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MAKING BETTER USE OF INFORMATION TO DRIVE IMPROVEMENT IN LOCAL PUBLIC SERVICES

A Report for the Audit Commission

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Version 22 June 07

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1   Introduction

Martha S. Feldman, a distinguished student of the role of information in organisations and in decision making starts her book 'Order without design' by talking about her experiences doing fieldwork for a research project in the U.S. Department of Energy:

> 'When I explained to the members of this office that I was interested in how the policy office produces information and how it was used, I was met time and again with the response that the information is not used.' (Feldman 1989: 1)

This report on making better use of information to drive improvement in local public services was commissioned from the School of Public Policy at the University of Birmingham, by the Audit Commission. It explores how decision makers use information when making decisions. These decision makers can be politicians, top managers, operational managers, planners etc. The focus of this report is not on the use of performance indicators *sensu stricto*, but on the use of information more generally. Rather than studying how existing information is used or not used in decision making, this report is looking at how decision makers go about searching, analysing, summarising, processing and interpreting information when they need to make a decision.

The report consists of three main chapters

Chapter 2:	A summary of key government policy initiatives in the UK to stimulate the use of information in decision making
Chapter 3:	A review of the relevant research literature. This is the main section of the report. In it, we review the role of information in decision making theories, the organisational and structural context of information use, and psychological factors in the use of information in decision making
Chapter 4:	A presentation of a number of international perspectives on the use of information in public sector decision making

Limitations of this study

This study is a literature review, and is limited to the use of information in a public sector context. It has therefore not reviewed how private sector managers use information when making decisions. This has been the object of another study currently undertaken for the Audit Commission. Neither does this study deal with the technical aspects of Management Information Systems.

The literature on the role of information in decision making spans a very wide field, ranging from information-seeking behaviour (e.g. in library studies), through knowledge utilization studies (in management studies) and evidence-based policy making (in evaluation studies), to game-theoretical approaches to decision making (in economics). Much of our current thinking about decision making, and the role of information in decision making, can be traced back to post-war research and debate. There was a particular surge of interest in the topics that will be dealt with in this review during the 1970s and 1980s. Consequently, much of the material used in this review is quite old – but we feel that it is indeed timely to revisit this debate, in a context where the public sector is increasingly being challenged to be more accountable for its decisions and to improve its decision making processes.

2   Government initiatives on information provision in the UK

In this chapter, by way of introduction to the overall study, we summarise a number of key government initiatives in the UK to promote the use of information. There has been a wide range of initiatives in the UK designed to promote the use of more or better quality information in decision making in government. We will categorise these initiatives in two ways:

- o   The type of decision which this information was meant to inform
- o   The type of information which has been promoted

In Table 1 below, we illustrate a range of different government initiatives since the birth of New Public Management in the early 1980s, showing how they produced information which was meant to be used in a range of decision making contexts. We have mainly illustrated initiatives which have related to local government and NHS organisations, given the Audit Commission's interests. We have mainly focused on the category of information which is generally labelled 'performance information', given that this type of information has been a particular concern of government initiatives on information gathering and dissemination since the early 1980s. Moreover, performance information (including BVPIs, PAF indicators, inspection reports, CPA judgements, benchmarking club results, etc.) has often been given a high profile in public debates leading to decision making, both at local level and in Whitehall during the last 25 years, while information produced for other purposes has often played a more background role. This applies in particular to information produced in the planning processes for individual services (housing, children's services, environmental improvement, etc,) and for particular areas (local plans, community strategies, etc). The Table also omits major data gathering exercises, such as the various Censuses or regular national surveys, since these are a resource for decision making but are not tied into any specific decision-making processes.

Interestingly, one of the very earliest initiatives in the NPM was MINIS, designed to help Ministers understand the key resource issues in their departments. However, few subsequent information initiatives were aimed at the Ministerial level until the advent of PSAs fifteen years later.

Table 1: Government initiatives on information provision in the UK

	Ministerial decision-making	Whitehall policy making	Whitehall managerial analysis	Local services policy making	Local services managerial analysis	Public views on quality and efficiency of service
FMI (1983)	MINIS		Departmental and service business plans		*Council service business plans*	
CCT (1981, 1988)					Contracts for all relevant services Full cost accounts for DLOs and DSOs	
Internal market (1988)					*Service level agreements*	
Next steps agencies (1988)			Executive agency framework documents and Corporate Plans			
Citizens Charter (1991)			National charters with standards of service		*Local charters with standards of service*	National and *local charters* with standards of service
Best Value (1997)			BVPIs PAFs	Best Value Reviews BVPPs	BVPIs BV and other inspection reports PAFs	BVPPs
PSAs (1997)	PSAs	PSAs	Service delivery agreements			

Making better use of information to drive improvement in local public services

Table 1 continued

	Ministerial decision-making	Whitehall policy making	Whitehall managerial analysis	Local services policy making	Local services managerial analysis	Public views on quality and efficiency of service
Health Improvement and Modernisation Programmes (1999)				Health Improvement Plans	Health Improvement Plans	Waiting list targets
LSPs and Community strategies (2001)				Community strategies		Community strategies *Participatory budgeting*
Capital strategies and Asset Mgmnt Plans (2001)					Capital strategies and Asset Management Plans	
NHS Star Ratings System (2001)			NHS Star Ratings		NHS Star Ratings	NHS Star Ratings
LPSAs (2002)			LPSAs		LPSAs	
Comprehensive Performance Assessment (2002)					CPA reports	CPA scores
LAAs (2005)		LAAs		LAAs		

Key: *discretionary* initiatives are shown in italics.

The attributions of initiatives made in Table 1 are necessarily crude. For example, PSAs are clearly important for both policy making and managerial analysis. However, in Table 1 they have been mainly slotted into the 'Whitehall policy making' column, since Service Delivery Plans clearly carry much of the managerial analysis which derives from the PSAs, once they have been agreed. Again, the final column listing initiatives which are meant to inform the public about the quality and efficiency of public services does not seek to distinguish initiatives which are mainly quality oriented (e.g. Citizens Charter) from those which are more efficiency oriented – mainly because most initiatives either do attempt to combine elements of both quality and efficiency or are interpreted by the public as reflecting both.

Nevertheless, one pattern which appears to emerge from Table 1 is that there has been more emphasis on the gathering and publication of information related to managerial analysis rather than to policy making. Of course, this might be seen as redressing an imbalance in previous decades, where managerial decision making was often seen to be based on insufficient information. It may, on the other hand, simply derive from the tendency of performance information (which predominates in Table 1) to be of more interest to managers than to policy makers, whether they be politicians or policy advisers amongst officials. In practice, there has been little research into this balance and the pattern in Table I does call into question as to whether the balance is now appropriate.

The extent to which these initiatives have actually succeeded is difficult to judge. Some initiatives have been evaluated but not all. Where evaluations have been undertaken, they have not always focused on the role of the information generated. For example, the meta-evaluation of the Local Government Modernisation Agenda has paid particular attention to the compliance of local authorities with the new structures (such as new council constitutions) and new processes (such as Best Value reviews, Best Value performance plans and Community Strategies) set out in the 2000 Act and to the impacts of these processes on outcomes such as service improvement (Martin and Bovaird, 2005), community leadership (Sullivan and Sweeting, 2005) and public confidence (Cowell, Bovaird and Downe, 2005). However, this study has not looked in detail at how the various forms of information generated in the modernisation process have actually been used and how important they have been in driving the impacts identified.

The effect of increased or improved information provision in some of the initiatives in Table 1 have, however, been evaluated, at least in part. For example, the requirement for local authorities to draw up Capital Strategies and Asset Management Plans was heavily dependent on the development of new information systems but the evaluation published in 2003 reported little impact in local authorities (York, 2003).

Most of the initiatives in Table 1 have had several purposes, of which increasing and improving the use of information in decision making has generally only been a minor part. There are very few instances where government has imposed mandatory collection and information provision as a

prerequisite for the making of specific decisions. In consequence, it seems likely that each of these initiatives has had very varied effects in different public sector organisations and different contexts.It is an open question as to whether this variability of information usage would be much affected if government were to become more specific about what information should be available when particular decisions were being made – given the openness of the decision making process, and the degree of judgement involved, it is quite likely that such an imposition would lead only to 'box-ticking' behaviour, in which the organisation certified that decision makers had indeed been made aware of the specified information before the decision was made.

3   A review of the relevant research literature

In this chapter, we review the existing research and literature on the role of information in decision making. This chapter consists of four parts:

> 3.1. A review of three different but related strands of research in the knowledge utilisation literature, where we look at how evaluation research, scientific information, and performance information is used by decision makers
>
> 3.2. A review of the role of information in some of the major decision making models
>
> 3.3. The organisational and structural context of information use
>
> 3.4. Psychological factors of information use

Given the breadth and variety of the issues covered, and the large number of disciplines that have studied the issue from different angles, we do not aim to provide a comprehensive coverage of the literature. Instead, we only present the core elements of every approach.

3.1   Three strands of research

In this section, we analyse three streams of research that have focused on how information is used in the public sector decision making process. These are evaluation research, research on the use of academic research and scientific information, and research on the use of performance information. Throughout this section we will gradually introduce a number of topics that will return in later sections. Generally, we distinguish between issues related to the information itself, and issues related to the information context. The former refers to characteristics of information and how this may influence utilisation (complexity, timeliness, relevance…) while the latter refers to processes through which information reaches the decision makers.

Knowledge utilisation: evaluation research

Evaluation research is one of the fields where extensive research on the impact of information on policy decisions has been done. The aim of this research was to establish how policy evaluation might help to improve policy. Some studies have focused on the direct effect of specific evaluations on specific policies. Others have looked at the broader context of the role of evaluations in organisations' knowledge utilisation.

A common observation in evaluation research is that the impact of evaluation research on programmes is limited (Patton, 1997). Negative evaluations do not generally lead to the termination of programmes (Dahler-Larsen, 2000), and decisions are sometimes taken before the results of an evaluation become available. Organisations seem to have a 'remarkable resistance [...] to unwanted information' (Weiss, 1972: 3); indeed, Dahler-Larsen suggested adding blunt 'non-use' to the list of

ways how organisations use the outcomes of evaluation research (Dahler-Larsen, 2000: 71). Evaluations may develop into routinised regimes, and become an administrative procedure, rather than a means for improving programmes (Dahler-Larsen, 2000: 72).

Factors determining the use of evaluation outcomes in decision making can be clustered into five groups (Leviton & Hughes, 1981: 525)

1. 'the relevance of evaluation to the needs of potential users;
2. extent of communication between potential users and producers of evaluations;
3. translation of evaluations into their implications for policy and programs;
4. credibility or trust placed in evaluations; and
5. commitment or advocacy by individual users.'

Especially from the 1970s and 1980s, with growing evidence that research and evaluations did not necessarily lead to changes in policy or programmes, the instrumental view of research utilization began to be challenged (Amara, Ouimet, & Réjean, 2004: 77). This **instrumental view** posits a direct impact of the findings of evaluations or research on subsequent decisions. It 'assumes a rational decisionmaking process: decision makers have clear goals, seek direct attainment of these goals and have access to relevant information' (Marra, 2000: 23). Negative evaluations, in this view, would lead to changes or termination of programmes, while positive findings would lead to their continuation. Instrumental use of research and evaluation reflects the problem solving approach to the use of information (Weiss, 1979): 'A problem exists and a decision has to be made, information or understanding is lacking either to generate a solution to the problem or to select among alternative solutions, research provides the missing knowledge' (Weiss, 1979: 427).

Other purposes or uses of evaluation research have been identified. Generally, we can talk about **conceptual use**, where the evaluation outcomes are used for general enlightenment, and **symbolic use**, where they are used for persuasive or legitimation purposes (Weiss, 1979; Leviton & Hughes, 1981). These different uses coexist in organisations (Amara et al., 2004: 99)

The processes and characteristics of this conceptual use deserve further exploration. Yet they also demonstrate how difficult the study of information is. In the conceptual or 'enlightenment' use of evaluation outcomes, 'it is not the findings of a single study nor even of a body of related studies that directly affect policy. Rather it is the concepts and theoretical perspectives that social science research has engendered that permeate the policy-making process.' (Weiss, 1979: 429). This 'knowledge creep' (Weiss, 1980) is based on 'a gradual accumulation and synthesis of information' and a gradual incorporation 'into the user's overall frame of reference' (Marra, 2000: 23)

Knowledge utilisation: use of scientific information in policy making
A second, and related, research tradition has focused on the use of academic research in policy making. Much of this research has focused on the impact and incorporation of scientific and technical

information, but the impact of social science has also received considerable attention (Weiss & Bucuvalas, 1980). A major difference with evaluation research is that in academic research the main emphasis is on the production of knowledge, while in evaluation it is on the *use* of information and knowledge (Weiss, 1972: 6). These differences in aims, knowledge advancement in the research community vs. creating knowledge to tackle a specific problem in the policy community, have an impact on the use of research information and its perceived usefulness. Studies have revealed considerable differences in how research is being used. Canadian research on the use of a specific type of information (university research) by government departments showed large difference across policy domains where such information is being used (Réjean, Lamari, & Amara, 2003). Use was the lowest in the policy domains of municipal and regional affairs, public works, and public infrastructures, and the highest in the sectors of education and information technology.

Rich and Oh distinguished between three main explanatory models for information use in decision making: communications, organisational interests, and rational actor theories (Rich & Oh, 2000). Amara et al. distinguish between 4 different sets of explanatory variables why research information is or is not used by decision makers (Amara et al., 2004). The first is **engineering explanations**: these refer to the characteristics of the information, such as availability, complexity, reliability and applicability of information, and to a number of formal characteristics such as whether the information is theoretical or applied, quantitative or qualitative etc. Determinants vary depending on the policy domain studied. Others have also referred to costs involved in using research such as the time needed to read it or obtain it, or difficulties in reading reports as factors influencing the use of research information (Réjean et al., 2003: 194).

The second group of factors relates to **organisational interests**. Information that is perceived as responding to the organisation's needs is more likely to be used. A rather interesting finding is that the technical quality of research results does not seem to influence its use (Réjean et al., 2003: 202).

The third group consists of **interaction explanations**, which stress the role of social linkages between researchers and policy makers in promoting the uptake of research information (Réjean et al., 2003: 202). Research information is not necessarily used in a direct, instrumental way. Research may provide diffuse generalisations that 'creep' into policy. This means that while the research does not lead to concrete and visible changes, it changes the way that people think about issues (Weiss, 1980). Again, this 'enlightenment' shows that the relationship between information and decisions is not straightforward, so that we cannot really distinguish between use and non-use.

A final group is labelled as **two communities explanations**. These explain the under-utilisation of information as the result of the existence of two communities, that of researchers and that of policy makers, and the cultural gap between them (Caplan, 1979). This gap results in reports that are maladapted to policy makers' needs, and a lack of efforts by decision makers to interact with researchers to acquire information (Bolton & Stolcis, 2003).

As was the case in the previous section on evaluation research, the literature on the use of academic research in public decision making has also challenged the instrumental approach to information

utilisation. The question, therefore, should not just be whether research information is used, but also for what purpose it is being used (Amara et al., 2004). In the case of research information, the evidence is especially strong for the use of information for legitimation purposes. Political use of research in policy is often seen as bad (Albaek, 1995), yet some would say that 'using research to support a predetermined position' is also research utilisation (Weiss, 1979: 429). Agencies often gather technical information, not for decision making, but to justify themselves in case their decisions are being challenged (Sabatier, 1978: 402): 'In fact, it is quite likely that administrative agencies devote a considerable portion of their resources to the *acquisition* of technical information but that this information is often *utilized* to legitimate, rather than to influence, policy decisions' (Sabatier, 1978: 396).

The utilisation of performance information in public sector decision making

A more recent development in knowledge utilisation studies is research on how performance indicators are actually used in decision making. The link between performance measurement, and the use of this information in decision making is often assumed (Ho, 2005; Pollitt, 2006; Moynihan & Ingraham, 2004). Yet, Lægreid et al. have described 'use' as the Achilles' heel of performance information systems (Laegreid, Roness, & Rubecksen, 2006). Researchers are indeed very sceptical about the usefulness of performance indicators (Askim, 2006a). At the same time, whereas some research on the use of information is available in the streams described above, academic interest in the 'use' of (performance) information has so far been very limited (Pollitt, 2006: 41). Much of the evidence on whether the information coming from performance measurement is actually used in decision making is still rather anecdotal (de Lancer Julnes & Holzer, 2001), and opinion on whether performance measurement actually matters for decisions is divided (Ho, 2005: 18; Askim, 2006a: 4).

Again, 'use' is a difficult concept. **Performance information may be used for different reasons**, and each of these uses has its own logic, and therefore its own determinants. Behn identified eight reasons why managers may use performance measurement (Behn, 2003: 588):

Evaluate	How well is my public agency performing?
Control	How can I ensure that my subordinates are doing the right thing?
Budget	On what programs, people, or projects should my agency spend the public's money?
Motivate	How can I motivate line staff, middle managers, nonprofit and for-profit collaborators, stakeholders, and citizens to do the things necessary to improve performance?
Promote	How can I convince political superiors, legislators, stakeholders, journalists, and citizens that my agency is doing a good job?
Celebrate	What accomplishments are worthy of the important organizational ritual of celebrating success?
Learn	Why is what working or not working?
Improve	What exactly should who do differently to improve performance?
(Behn, 2003: table 1)	

When deploying performance measures, managers should make clear why they want to use them, as no single measure will be appropriate for all eight purposes.

A simple judgement of whether performance information is used ignores **differences between types of use, stages in the decision making proces**s (Melkers & Willoughby, 2005) **and between policy sector**s. Performance information is more embedded in some sectors than in others, and also the use of performance information in (local politicians') decision making differs between policy sectors (Askim, 2005). Van Dooren found similar differences across policy domains in the use of indicators in a study of parliamentary questions in the Belgian Parliament (van Dooren, 2004). In a comparison of how evidence guides policy in a number of sectors in the UK (health care, criminal justice, housing, …), Davies et al. observed that 'the accepted rules of evidence differ greatly between research cultures' (Davies, Nutley, & Smith, 2000: 3). The nature of the relationship between evidence and policy varies with the policy area (Nutley & Webb, 2000: 14). Whether performance indicators are used depends on organisational culture (Moynihan, 2005a: 204). Pollitt found large differences in patterns of use of performance information between countries (Pollitt, 2005).

The difference with the previous research streams is that the study of 'use' in performance measurement often extends beyond organisational use, but also includes 'end-users' such as politicians and citizens. We have seen a number of studies of **how politicians use performance information** (Ho, 2005; ter Bogt, 2004; Askim, 2006a; Johnsen, 2005; Brun & Siegel, 2006). A common finding in this research is that politicians often do not value the performance information. Pollitt focused on the use of performance reports by end-users, and the evidence he reviewed 'suggests that evaluation and performance reports and audits are seldom highly valued by politicians or citizens' (Pollitt, 2006: 38). Aldermen in the Netherlands use performance information infrequently, and do not always see much value in the available information (ter Bogt, 2004). Pollitt reviewed evidence that indicated that Auditor General's reports in Canada were not read in their entirety by Canadian MPs or that performance information is not really used in budgeting decisions in the US (Pollitt, 2006). In decision making, political considerations and performance information are used (Heinrich, 1999), but we know little about their respective weight, and about the contextual factors that influence this selection. The two-communities explanation as used in the previous section may be relevant here as well.

Yet, before discarding performance information because it is not used by politicians anyway, we need to recognise that most studies focused on instrumental use. Politicians may not pick up performance reports, 'read them carefully and then set out directly to apply their findings to the reformulation of policy or the better management of programmes' (Pollitt, 2006: 49), but this does not mean performance information is not used at all. Politicians use various ways to collect information, and the **use of information may be less formalized than what the existence of performance reports or league tables suggests**. Aldermen in Dutch municipalities found little use in performance indicators and instead preferred to rely on personal interactions with civil servants (ter Bogt, 2004). Politicians normally engage in 'problemistic search' and seek out supplementing sources of information, rather than just relying on one predefined set of information (Askim, 2006b: 6; Cyert & March, 1963). Gray

and Lowery studied where US state legislators and legislature staff get their information from in different stages of the policy process (Gray & Lowery, 2000). They were most interested in where 'policy ideas' came from. The emergence of these ideas is clearly different from an instrumental use of formal information.

One of the most extensive initiatives to study the use of performance information by local politicians can be found in Norway, where several authors have studied this phenomenon as part of a large-scale project (Johnsen, 2005; Askim, 2006b; Askim, 2006a). Johnsen studied the use of non-mandatory performance measurement in political institutions in Norwegian local government (Johnsen, 2005). Askim studied local politicians' use of performance information in Norway, with a focus on these politicians' needs and abilities. Some of his findings were 'that use of performance information increases with a politician's rank within the polity; that the politicians with the highest education make the least use of performance information; that polity size has a positive effect on use; and that different factors matter in distinct ways in different phases of policymaking' (Askim, 2006b: 1).

Explanations for the use or non-use of performance information abound. In the case of politicians' use of performance information, elements of power and accountability are obviously important. Yet, there are also important organisational determinants. Van Dooren (2006) distinguished between demand and supply of performance information, and spoke about 'demand frustration' or 'supply frustration' when demand and supply of performance information are not in an equilibrium. Askim suggests using analogies to herd behaviour in studying the use of performance information, which gave an important role in explaining inter-organisational differences to 'variations in the degree of support from the leading persons in the organizations' (Askim, 2006b: 22). Moynihan stressed the need for having routines in an organisation for examining and interpreting information (Moynihan, 2005a: 205). Johnsen pointed at the contradictions in the use of information: decision theory would suggest that in uncertainty, managers would search for information, yet because of the high uncertainty, the information may actually be of limited relevance to decision making (Johnsen, 2005: 7), because it does not help to reduce the ambiguity. Having more information therefore does not contribute to decision making in a situation of high uncertainty (Johnsen, 2005: 8).

3.2   Information in the decision making theories

What is a decision, what is information, what is information use?
The traditional study of decision making has taken a linear approach to policy making, whereby collecting information precedes a clear-cut decision in the logical sequence of actions. Studying the role of information in decisions requires expanding the concepts 'information' and 'decision'. While it is possible to study the impact of a well-defined piece of information on a single discrete decision, organisational reality is more complex.

One reason is that **decisions are seldom discrete**, and that it is therefore **hard to determine when and where a decision is actually taken**. 'Many policy actions […] are not "decided" in brisk and clear-cut style' (Weiss, 1980: 381), and many managers 'do not believe that they make decisions' (Weiss, 1980: 398). According to March, 'most theories of choice overestimate the coherence of decision processes' (March, 1987). Decision making is fragmented (Weiss & Bucuvalas, 1980: 20), so it is hard to pinpoint where information is used, how, and to what effect.

Weiss talked about **decision accretion**. Not all organisational outputs are discrete decisions as such. Many people in an organisation take steps when doing their work and in an uncoordinated way make things happen. Looking backwards it may seem as if a decision was taken, but at the time, nobody is aware of it: 'No problem (or opportunity) is identified as an explicit issue, no identifiable set of authorized decision makers meets, no list of options is generated, no assessment is made of relative advantages and disadvantages, no crisp choice is made. Yet the onrushing flow of events shapes an accommodation – and a pattern of behavior- that has widespread ramifications.' (Weiss, 1980: 382). As a result it is hard for managers to 'identify the unique contribution that one study, a body of studies, or research in general, has made to their actions' (Weiss, 1980: 391), and it is often difficult to retrace the genealogy of certain ideas (Weiss, 1980: 385). Furthermore, 'the decisionist approach assumes a unitary decision maker' (Majone, 1989: 15).

The same goes for information. Information has been defined by Claude Shannon, a founding father of information theory, as that what reduces uncertainty, and uncertainty stimulates people to search information (Rogers, 1962). **Information is seldom 'precoded in decision-relevant form'** (March & Sévon, 1988: 434), **and often comes from unexpected or unplanned sources** (March & Sévon, 1988). 'Information is not predefined or prepackaged; rather it is often vague, ambiguous, and, most importantly, generated from multiple sources. [...] it is dynamic' (Jones, 2003: 406). Information can consist of highly formalised reports and indicators, but can just as well appear as media reporting, protest meetings, or stories citizens tell (Herzog & Claunch, 1997). Studying the role of information on decision making becomes especially difficult in the case of latent information, or in cases where information is found to have an 'enlightenment' of 'conceptual' function. It may be difficult for decision makers themselves to determine whether they have 'used' certain information in taking decisions (Webber, 1991), and 'use' may be interpreted in different ways. Dividing information utilisation into a number of stages ranging from mere reception of certain information to situations where the information actually influences the decision (Réjean et al., 2003: 193) does not really solve this problem. We are thus dealing with a process that is 'ambiguous, amorphous, incremental, and meandering' (Webber, 1991), and the processing of information does not always happen within a clearly defined organisational routine (Moynihan, 2005a: 205). Deciding on a single definition of 'information' therefore doesn't particularly help us in this review and the apparent consensus as would information reduce uncertainty is not entirely convincing. Data needs to be interpreted before it becomes information, but information does not always facilitate decision making, as it needs to be processed.

Information can be collected for no direct specific purpose or decision, but only for permanently scanning one's environment. This is a process that does clearly not fit into classical decision making theory where information is sought to choose between alternatives given a set of priorities. Feldman and March spoke about '**information as surveillance'** (Feldman & March, 1981: 176). This means an organisation is monitoring its environment for surprises or for reassurance that there are no surprises. This is an inductive rather than deductive view, and a very exploratory process (Feldman & March, 1981: 176). This is done when decisions are expected or environments are expected to be faced. This information use has a long lead time, and the relevance of the information cannot be estimated in advance (Feldman & March, 1981: 176). '**Knowledge creeps**' leave no traces that are concrete or directly visible, but do change how people think about issues. The research on how contextual information permeates organisations appears to be rather limited, probably due to the intangibility of this information.

We have already introduced how information emanating from evaluations, academic research, and performance indicators is used in public sector decision making. Some research has also focused on the use of information in decision making in a more generic way. This 'more generic way' also includes moving beyond some of the traditional decision making theories, which tend to focus on how information contributes to making choices between alternatives (March, 1987), and not on how information is gathered more generally to inform decisions. It is important to recognise that most information collected is not directly relevant to decision making, but it develops a context of knowledge (March, 1987: 163). One constant observation is that having information does not necessarily mean it will be used in decision making (Réjean et al., 2003: 195; Moynihan, 2005a: 205).

One of the seminal articles on the use of information in organisations, written in 1981 by two of the most influential figures in management and public administration theory, Martha F. Feldman and James G. March, proclaimed there is only a weak link between decisions and information (Feldman & March, 1981: 174). The picture they paint based on the study of the literature and of some case studies is a pretty depressing one for those who believe in the rational, information-based decision model. We repeat their observations in full (Feldman & March, 1981: 174)

1. 'Much of the information that is gathered and communicated by individuals and organizations has little decision relevance
2. Much of the information that is used to justify a decision is collected and interpreted after the decision has been made, or substantially made
3. Much of the information gathered in response to requests for information is not considered in the making of decisions for which it was requested
4. Regardless of the information available at the time a decision is first considered, more information is requested
5. Complaints that an organization does not have enough information to make a decision occur while available information is ignored

6. the relevance of the information provided in the decision-making process to the decision being made is less conspicuous than is the insistence on information

In short. Most organizations and individuals often collect more information than they use or can reasonably expect to use in the making of decisions. At the same time, they appear to be constantly needing or requesting more information, or complaining about inadequacies in information.' (Feldman & March, 1981: 174)

The decision making process: decision models summarized

As we have mentioned in the introduction, much of the research into information use in decision making has challenged the rational model. This does not mean it has bluntly discarded it. Most models are adaptations of the rational model, and give a specific place to information and evidence in decision making. In this section, we summarise some of the main decision making models. Naturally, such an overview can never be comprehensive (see Parsons, 1995: 271-303 for a detailed overview).

Bounded rationality

Herbert Simon's bounded rationality process (Simon, 1955) (Simon, 1976) emerged as a critique on the rational decision making process (Jones, 2003: 397). While human rationality is limited (Parsons, 1995: 277), decision making is based on a principle of intended rationality, which means that decision behaviour is goal-directed and actors intend to act rationally. This **rationality is hindered by uncertainty, information-processing difficulties, limited cognitive capabilities, time constraints, data overload, contradictions, and the need for trade-offs**. Taking a rational decision would also require that the decision maker knows why he wants to take the decision, and what his goals are. This leads to the principle of satisficing, or 'making good enough', decisions (Simon, 1976).

Incrementalism and muddling through

Lindblom's concept of 'disjointed incrementalism' is based on the assumption that rational analysis cannot work for complex policy problems and that information and analysis cannot be a substitute for politics. Analytical policy making is limited because (Lindblom, 1980: 19):

1. it is fallible, and people believe it to be so
2. it cannot wholly resolve conflicts of value and interests
3. it is too slow and costly
4. it cannot tell us conclusively which problems to attack

Facts alone are therefore 'unlikely to be sufficient in making good decisions in complex policy environments' (Jones & Williams, 2007: 21). In a rational model, the decision maker's frame contains a selection of feasible alternatives, and the criteria for decision or choice (Bamberg, Kühnel, & Schmidt, 1999: 7). **In an incremental approach, not all alternatives are considered**. Incrementalism is a method of comparing between policies, with a view to improving policy. There is no attempt at a comprehensive survey of alternatives. Instead, there is a **step by step approach to problems**: only *elements* of the problem are looked into, and problems are not considered in their

totality. Important is the **concrete treatment of actual problems, not the long term vision**. As a result, only a small number of alternatives that diverge from the dominant pattern are taken into account, leading to minor changes that differ only marginally or incrementally from existing policies. This incrementalism is 'disjointed', because decisions are not part of a big plan.

Incrementalism is no neat process of working towards predetermined goals, using evidence. The role of evidence is as a result more diffuse rather than fed into the system at a certain stage of policy making (Nutley & Webb, 2000: 27). Decision makers are really '**muddling through**' (Lindblom, 1959). Muddling through relies on successive limited comparison. It is a 'branch method', based on successive small steps, rather than the 'root approach' we find in the rational model, which starts at the fundamentals every time (clarifying values, objectives, means-ends analysis etc.). Compromises are always possible, means and ends can be redefined during the decision process. Decision making follows a very pluralist approach, and a good policy is one upon which various analysts find themselves directly agreeing (Parsons, 1995: 285). Decision making follows a process of partisan mutual adjustment, influenced by the power structure and the dependencies in the decision making process This hints at a social construction of information and how it is used in a decision making process. Politics has clear role in this process, and power matters in decision making.

A refinement of Lindblom's approach was suggested by James Brian Quinn (Quinn, 1980) – he suggested that 'Constantly integrating the simultaneous incremental process of strategy formulation and implementation is the central art of effective strategic management' and coins the term *logical incrementalism* to cover an adaptive approach of strategy formulation which recognizes that there is often a nonlinear mixture of strategic planning and spontaneous change midcourse, based on sensing changes in the environment and learning from experience. 'What is going on in any particular subsystem is known to its members, but the master scheme of the rational comprehensive model is not apparent'. This is an understandable and defensible response to the complexities of a large organization, where the announcement of goals for the whole organization too early in the planning process can '...centralize the organization, rigidify positions too soon, eliminate creative options...cause active resistance to the goals themselves...(and) provide focal points against which an otherwise fragmented opposition will organize'.

The incremental approach as an explanatory model has also been criticised, because it is based on stagnation. Incremental decisions create a corridor making it difficult to diverge from the current dominant course of action. As a result, incrementalism has difficulties explaining innovation in society, or large fundamental decisions. While it cannot explain fundamental decisions, incrementalism gives these fundamental decisions an important role because of their profound influence on all subsequent decisions.

Garbage can model

The main characteristic of the garbage can model is that **solutions and problems are not directly linked** (Cohen, March, & Olsen, 1972). Problems, information and possible solutions are all thrown into a 'garbage can', and in this model there no traditional linear processing of decisions and information. The same information will therefore not necessarily lead different decision makers to the same conclusions (Moynihan, 2005b: 157). Solutions do not neatly follow from predefined problems and problem analysis. This has become a major model in the strategic management literature, as it fits well with Mintzberg's analysis of how emergent strategies develop from the actions of practitioners and middle managers, rather than from the top-down decisions made through the managerial hierarchy (Mintzberg 1978).

Mixed scanning

With *mixed scanning*, Etzioni developed a middle ground between incrementalism and the rational model. While the rational model requires too many resources for decision making, incrementalism tends to be very conservative. Mixed scanning is situated between the utopianism of the rational model, and the conservatism of incrementalism (Etzioni, 1967: 385). It differentiates between 'high-order, fundamental policy making processes which set basic directions' and 'incremental ones which prepare for fundamental decisions and work them out after they have been reached' (Etzioni, 1967: 385). It limits the amount of detail required in decisions (cf. the critique of the rational model) yet it also explores long term alternatives (cf. the failure of incrementalism). The model is based on weather forecasting techniques, which combine a general image with a detailed examination of problem areas (Parsons, 1995: 297). The basic principle of mixed scanning is that there is a **permanent**, yet rather vague **general image of problems and alternatives for the long term. Decision makers only focus on those areas where conflict zones emerge**. In the rational model, a very wide range of minor elements makes decision very difficult, while in incrementalism there is a tendency only to focus on those issues where problems are expected. In mixed scanning, decisions are taken after exploring the main alternatives within a broader value framework. A general overview remains possible while very specific elements are studied in detail.

Rational decision making vs. rationalising decision making

The rational model of decision making, whereby decisions are based on an informed choice between alternatives, retains a powerful influence in efforts to improve decision making: 'the assumption that the information can be used in, and improves the nature of, decision making clearly remains salient to government reformers' (Moynihan & Ingraham, 2004: note 3). It also serves as a handy image to present and motivate one's decisions.

The rational model of decision making looks as follows: Agenda => problem => objectives => alternatives => forecast => compare => select => implement => monitor => evaluate, and back to the first step (Golub, 1997: 9). In decision analysis, we are mainly concerned with detecting alternatives, forecasting, comparing, and selecting. Monitoring and evaluation will however also provide

information to be fed into the decision process. But setting or responding to the agenda, and defining the problem and the organisation's objectives are also part of decision making.

Actually, **much of the research literature is a long refutation of the rational decision making model**, resulting from a confrontation with the model's limitations: '… the differences between the ways humans use information and make decisions and the ways our theories say they should do so are partly attributable to limitations in the theories, rather than limitations in the behavior' (March, 1987: 162-3). Theorising about organisational decision making has tended to move away from the very simple rational model. Talking about the progress in explaining how decisions are made, March stated that 'If scientific progress is measured by simplification, this is a story of retrogression' (March, 1988: 15). The rational model is often seen as a model of how decisions should be made. It is, however, less capable in describing how decisions are really made (Bazerman, 2002).

Whereas the **rational model** may not be the best for explaining decisions and the use of information in decision making, it **remains a powerful image for decision makers to describe and legitimise their behaviour**. '[…] information use symbolizes a commitment to rational choice. Displaying the symbol reaffirms the importance of this social value and signals personal and organizational competence' (Feldman & March, 1981: 182). Policy making is an untidy process (Lindblom, 1980), not a rationalistic, ordered one. Yet organisations want to appear as rational, so 'the gathering of information provides a ritualistic assurance that appropriate attitudes about decision making exist' (Feldman & March, 1981: 177). Decisions need observable features of information use (Feldman & March, 1981: 178), because they are a 'representation of competence and a reaffirmation of social virtue' (Feldman & March, 1981: 177). This leads to a need to display information and to explain decisions in line with the information. If as a manager you cannot explain your decisions within a rational framework, preferably relying on formal sources of information, and showing how this fits into your organisation's neatly defined objectives, you cannot be seen as a 'good manager'. Heuristics such as 'gut feeling' are not acceptable explanations for your decision making behaviour. Using information, evaluation, data, indicators and models gives an appearance of efficiency and competence to decision making (Bjornholt, 2006; van Dooren & Van de Walle, 2004; Albaek, 1995; Dahler-Larsen, 2000). In a political context, this has led to a situation where only rational information utilization is seen as legitimate, while political utilization is described as illegitimate (Albaek, 1995). Using information is an instrument not just to improve the technical quality of decisions, but also to legitimize the decision (Sabatier, 1978). In many personal decisions, the decision rule seems to be 'Tell a qualified expert about your problem and do whatever he says – that will be good enough' (Janis & Mann, 1977). Rational appearance of decisions seems to be important for legitimacy and accountability reasons, but it does not necessarily mean that decisions are also based on more comprehensive or technically superior information (Sanderson, 2002: 5).

In the rational model, 'acquiring, disseminating, and utilizing information is without question a positive activity that is in the interest of all possible stakeholders' (Rich & Oh, 2000: 174). The desirability and perceived necessity to use more and better information in making decisions reflects the '**problem**

solving' approach to policy making, the belief that there are clearly definable courses of action that will lead to 'better' outcomes (Lindblom & Cohen, 1979). It reflects 'the continuing influence of the "modernist" faith in progress informed by reason' (Sanderson, 2002: 1). Oakeshott described the Rationalist, as someone who cannot imagine 'politics which do not consist in solving problems, or a political problem of which there is no "rational" solution at all' (Oakeshott, 1991: 10). An 'advantage' of the use of the problem solving metaphor is that it 'seeks to drive out contradiction and pursues efficient solutions to messy social problems' (Adams & Balfour, 1998: 139).

The role of 'professional social inquiry' (Lindblom & Cohen, 1979) may be more limited than we want to acknowledge. Lindblom and Cohen make a case for the use of what they call '**ordinary knowledge**', which often is based on 'common sense, casual empiricism, or thoughtful speculation and analysis' (Lindblom & Cohen, 1979: 12). This clearly is an underanalysed aspect of information in the decision making process: 'By viewing policy knowledge as an interrelated body of beliefs, information, evidence, and explanations, we can begin to understand how it is that a policy maker uses personal knowledge to make decisions and what can be done to prepare policy makers to use other types of policy knowledge. It is not likely that policy makers can/will use a more systematic type of policy knowledge if their personal knowledge about a policy problem is meager' (Webber, 1991). Another relevant concept is that of **bricolage**, used by Weick in organisational analysis, where decision makers recombine earlier used elements in a novel and unconventional way (Weick, 2001: 63). An additional problem with knowledge or information in the social and political sphere is that there is generally no agreement on what this information means. It does not automatically lend itself to easy implementation. This distinguishes it from knowledge in the hard sciences, where the meaning of a breakthrough is often easier to define (Weiss, 1979).

Recent research in management public administration has emphasised the power of **anecdote and story telling** in influencing decisions. 'The reason why stories are so powerful in conveying a social reality which numbers can never do is that narratives are the *only* way through which human beings construct and give meaning to the lives and events which surround them' (Deneulin & Hodgett, 2006). Phelps (2006) argues that 'the human being is a "*homo narrans*", that is, we understand our lives in terms of narratives'. Narratives are important in human lives because they place humans in relation to their environments, communities and families (MacIntyre, 1981).

Psychological studies suggest that the human mind is framed to process stories, and not statistics, because stories enable people to relate events or facts to an environment and a history, and to engage human emotions. Fischer (1998) has argued that policy analysts 'tell causal stories to convey the nature, character, and origins of policy problems. … Policy controversies …turn on the underlying storyline. [The facts] are embedded- explicitly or implicitly- in narrative accounts'. The most potent of all 'storylines' is that which can be summarized in the 'killer fact' (Le Grand, 2006). While the emphasis on story telling as an aspect of negotiating policy decisions is relatively new, 'narratives' are now being used in the evaluation of public policies (Deneulin & Hodgett, 2006).

Information characteristics: Information studies vs. studies of information behaviour

The nature of information is one of the factors that decides whether it will be used in decision making. As we have shown already in the review of earlier research, information that is not presented or available in a form that is directly useful for the decision is less likely to be used. When information is easily accessible, decision makers still make judgements on its usefulness or suitability (see also 3.3 and 3.4).

Research has identified numerous reasons why 'information' is not used by decision makers: time limitations; timeliness of the information (March & Sévon, 1988: 435); limited cognitive abilities to process information; poor knowledge transfer between producers and users of information (Caplan, 1979); different logics in the supply and demand of information (van Dooren, 2006) leading to the supply of the wrong kind of information; perceived credibility of information (Coursey, 1992); etc.

The traditional approach to information in decision theory is that information is sought to improve the quality of decisions. Using more and better (and better analysed) information is seen as superior to decision making without the use of this information. The quality of information is an important consideration here. This approach has a number of very simple assumptions: 'relevant information will be gathered and analyzed prior to decision making; information gathered for use in a decision will be used in making that decision; available information will be examined before more information is requested or gathered; needs for information will be determined prior to requesting information; information that is irrelevant to a decision will not be gathered.' (Feldman & March, 1981: 172). Acquiring much information does not mean more information will be used in reaching the decision (Rich & Oh, 2000: 193).

Feldman and March argue that a rational choice approach to information use, suggesting that 'information about the possible consequences of alternative actions will be sought and used only if the precision, relevance, and reliability of the information are compatible with its cost' is not an accurate reflection of organisational reality (Feldman & March, 1981: 171). Instead, they find, 'organizations systematically gather more information than they use, yet continue to ask for more' (Feldman & March, 1981: 171). Therefore, they argue, use of information is highly symbolic. This makes the **study of information different from the study of information behaviour**, where we want to 'understand actual human encounters with information' (Feldman & March, 1981: 171). An interesting summary of the different views on the use of information in decisions is presented by Shulock: 'Information, in rational choice models, reduces uncertainty when it is revealed and shared. In organization theory, information frames and interprets reality more than it reduces uncertainty' (Shulock, 1998: 300).

For this reason, the following two sections will not just focus on information characteristics, but also on the structural context of information in organisations, and the psychological factors influencing the processing of information.

3.3   Information: the structural context

In the previous section, we discussed the place of information in decision making models. In this section, we will deal with the link between information, its sources, and the user. The focus is on the environment in which the information exists and is created, and on the factors that determine the entrance of information into an organisation, or its flow within an organisation. Decision makers do not just have a pile of information in front of them they can use. They must get it from somewhere (Gray & Lowery, 2000). Getting information is not a one-directional process, where the decision maker decides to collect some information. Using information is not a neutral process, and the presence of certain information sources is felt more strongly than that of others.

Organisational characteristics
Organisational characteristics determine how and whether information is used in decision making. In larger government organisations, for instance, there is a greater use of performance information in decision making (Moynihan & Ingraham, 2004: 444), because in these organisations it is more difficult to rely on first hand information. Also, there seems to be a clear **preference for immediate and internal information**. 'Administrators will tend to rely, over time, on immediate sources of information – exhibiting a lower tendency to venture outside the immediate organizational unit to incorporate additional material' (McGowan & Loveless, 1981: 333). This implies they will use the easily accessible material, even if more comprehensive material is available elsewhere, but in a less accessible. In a study of mental health professionals in the US, Rich and Oh (2000) found that internal sources of information are used more than external ones. Internal refers to one's own organisation, or, by extension, government, and information mainly gets shared with others within the organisation.

Diffusion of information and information sources, opinion leaders, and gatekeepers
Rogers' diffusion theory (Rogers, 1962), although developed to study the diffusion of innovations, can also be used to study how the use of certain bits of **information** or information sources is **diffused through a policy-making community**. What information will be used, and by which managers, may be influenced by how the information, and the practice of using it, has been diffused through the specific policy-making community. This diffusion is not necessarily a conscious process.
We earlier referred to the 'two communities' theory, used to explain the limited use of research information in policy. The lack of interrelated channels for information diffusion between the research and the policy community is part of the theory's explanatory approach (Caplan, 1979). In a later section, we introduce the concept of institutional isomorphism, where diffusion of ideas and practices is used to explain processes of convergence.
The 'two-step flow of communication' model gives an important role to **opinion leaders, who select, interpret and diffuse information** (Katz & Lazarsfeld, 1956). It suggests that certain actors have a more prominent role in the diffusion of information. Opinion leaders often are early adaptors of new information sources, and they are also regarded as authoritative persons who determine which information is useful or can be trusted. They define what information is privileged in the decision

making process. Yet little is known about who these persons are in the local government or public management community, what their status is, and especially, what networks they use.

Of a different but related nature are **gatekeepers**. Gate keeping is a term coined by Kurt Lewin (1947), and later extensively used in communication studies, especially in the context of newspaper journalism. It refers to a process where information is being filtered by a 'gatekeeper'. This person decides which information is relevant or desirable, and will get through to other parts of the organisation, or, as in the journalism studies, will get published. These gatekeepers exist in all kinds of organisations, and they do not always have a formal role. Information in an organisation is routed and filtered. Not all information gets through to decision makers: information is condensed and summarised, and there are information dead-ends in organisations (Cyert & March, 1963: 109-110). Gate keeping can also be deliberate strategic behaviour: 'Information providers will try to shape outcomes by choosing what information will be collected and highlighted.' (Moynihan, 2005b: 156). Control of information is a tool for pursuing one's own interests within an organisation (March, 1988: 6). For this reason, information is subject to strategic misrepresentation (Feldman & March, 1981: 175).

This phenomenon has received considerable attention in the context of presidential decision making in the US. Different presidencies dealt with data, policy analysis and neutral competence in different ways (Jones & Williams, 2007). At the level of public organisations or even local authorities, considerably less research is available. We therefore know little about who the gatekeepers are, and what their effect is on decision makers' access to information. We do know, however, and this is a link to diffusion studies, that decision makers tend to get their information more by talking to other people than by reading reports (Mintzberg, 1975). This is especially so in political contexts. This has implications for communicating and distributing information. Pollitt suggested that, instead of writing reports, evaluators and the performance management community should aim their communication efforts in relation to their findings and recommendations at politicians' advisors if they want politicians to be informed (Pollitt, 2006: 50).

Advocacy coalitions and knowledge creep

As mentioned in the previous section, using information for making decisions should not just be studied at the individual level (see the section in this report on psychological explanations), but should take the context into account. Information use is not neutral. An important critique levelled against the rational model is that it considers the use and presence of information as a given. It leaves very little space for strategic and political considerations in making information available and in promoting the use of certain sources of information. Especially in a public environment, decisions cannot be value neutral, because politics is precisely an 'authoritative allocation of value' (Easton, 1965). Context, political and otherwise, determines what information will be used. Certain bits and types of information are considered to be more relevant or useworthy than others. Gatekeepers and opinion leaders have an important role to play in this definition of useworthiness.

This process of definition is not always a visible and conscious process. When we summarised the literature on the use of evaluation research outcomes in decision making, we referred to the

enlightenment function of this research. This means that decisions are based 'on a gradual accumulation and synthesis of information' (Marra, 2000: 23). This is related our introductory remarks that decisions are not always clear-cut decisions, and that it is therefore difficult to speak about a well-defined piece of information that is used for a specific decision. Weiss introduced the concept of knowledge creep into our vocabulary (Weiss, 1980) to show **how our understanding of things and frames of reference change gradually over time**. Information may thus not lead to concrete and visible changes, but may change the way that people think about issues. Information's impact is not direct and instrumental, but conceptual, which blurs the relationship between a specific piece of information and a discrete decision.

This observation takes a central role in Sabatier's and other's work on **advocacy coalitions** (Sabatier, 1988; Sabatier, 1978; Jenkins-Smith & Sabatier, 1994). **Information percolates into a policy arena where it influences thinking** and is 'a major force of change' (Parsons, 1995: 195). The policy system consists of all actors engaged in generating, disseminating and evaluating ideas. This goes beyond the actual decision makers, but also includes analysts, politicians, journalists, civil servants etc. This system consists of advocacy coalitions that share beliefs and values. This belief system consist of three elements, with different susceptibility to change (Parsons, 1995: 197):

- o Deep core beliefs: fundamental norms and beliefs which apply to all policy subsystems
- o Policy core: fundamental policy positions and strategies for attaining core values
- o Secondary aspects: instrumental decisions and information searches necessary to implement the policy core

Information is therefore most likely to have an instrumental effect on secondary aspects of policy. However, through a process of policy-oriented learning the policy core and, even more slowly, **the deep core of a policy belief system will gradually change**. There will be 'a gradual shift in concepts and paradigms' (Neilson, 2001). Studying the impact of information, therefore, requires a very long time perspective. The Advocacy Coalition Framework theory (ACF) also blurs structural and psychological aspects of decision making, because it conceptualises public policies as belief systems (Sabatier & Jenkins-Smith, 1993). The ACF opens up the prospect of studying policy making in local government through studying the belief systems of specific professions, especially 'information processing' professions such as performance indicator and planning staff. This could then reveal how these groups integrate the 'need to use information' as one of their core beliefs (see also the section on rationalising decisions).

We will see in the next section, where we deal with psychological aspects of decision-making, how these belief systems, through their sets of values priorities and causal assumptions, influence policy makers' search and interpretation of information. More specifically, through decision heuristics, advocacy coalitions, agendas and information diffusion will have an important impact on the information decision makers will incorporate into their decisions.

In Baumgartner and Jones' punctuated equilibrium model (Baumgartner & Jones, 1993) many issues are normally dealt with in parallel within specialized policy systems. Only in times of instability do

some issues move to the centre of the political agenda and are dealt with in a serial way. This model thus combines **incremental change in periods of stability, with large changes in periods of instability. Information is processed very differently during these periods**.

Agenda setting

The theory of agenda setting (Kingdon, 1984) is another related theory that may be helpful in explaining how decision makers use certain information but not other. The theory was developed to explain how certain issues enter the (political) agenda, or how they come to the attention of policy makers (Parsons, 1995: 192-3). The approach posits the existence of a series of 'windows of opportunity' through which a given issue is viewed. A problem window is opened, for instance, when a problem becomes compelling (e.g. when it is picked up by the media), while a political window is opened, for example, when a new government takes office. Problem and political windows open more often than policy windows. Policy windows rarely open – but, when they do, it provides unique opportunities for large scale policy shifts (Kingdon, 1984). Kingdon therefore suggests that agenda setting processes are more influenced by what happens in the problem stream and in the political stream, while the generation of options is more sensitive to events in the policy stream.

The same approach can also be applied to information to explain **why certain types or sources of information are considered important while others are not, and why these judgements of importance change over time. Certain sources of information can enter the policy agenda at a certain moment and subsequently be used, even though the information existed before, but was not used. Information can become relevant to a problem where it was not relevant before** (e.g. quality of housing information in debates on juvenile delinquency). Certain sources of information may be considered as very important and retain this label for a long time, while other sources are rejected at a first encounter. The agenda serves as a frame within which problems and information are interpreted. New information intrudes the policy process, and thereby influences it. Manoeuvring certain sets of information into the policy debate is a strategy to influence the debate. The problem for policy makers becomes how to allocate their attention and how to prioritise the information with which they are bombarded (Jones & Baumgartner, 2005).

Embedded routines and isomorphism

This brings us to a further set of explanations why certain information is used while other information is not: a set of information is used because it has always been used – essentially a theory of information use inertia. Likewise, decisions are made in a certain way because they have always been made like that. In relation to budgeting in the US, Moynihan states that 'performance information is ignored in favor of previous agreements reflected in last year's base. A comprehensive use of performance information is beyond limited human cognitive capacities, leads to information overload, and is a distraction for policy analysts' (Moynihan, 2005b: 155). Bazerman described the tendency to take subsequent decisions that continue a previous commitment (Bazerman, 2002: 77). **Using certain information for a certain kind of decision becomes an 'embedded routine' for**

organisations. Dahler-Larsen found something similar for the use of evaluation research in organisations: these evaluations become routinised in organisations, and transform into an administrative procedure (Dahler-Larsen, 2000: 72). In the same way, the use of certain packages of information could become routinised in certain decisions or in the production of certain policy documents (we include indicator A in the annual report because it has always been included in it; we collect information on the evolution of B in year X2, because we also collected this information in year X1). In such a way, certain sets of information become privileged to individuals, organisations and policy sectors. These routines may actually hinder the development of organisational learning, because all attention goes to a limited number of key performance indicators, thereby limiting the use of information to that bottom line (Wiggins & Tymms, 2001). Following established procedures and established sources of information is an appropriate and safe strategy, yet not necessarily optimal (March, 1988: 8). These 'habits' also extend beyond the use of specific sets of information, to the use of information in general. Pollitt for instance found that information has a different place in policy making in some countries than it has in others. Countries' approach to performance information is especially different (Pollitt, 2005).

In organisational theory, the concept of institutional isomorphism (DiMaggio & Powell, 1983) is a powerful explanation for why decision makers use certain information and do not use other information. **Isomorphism is the process of organisations becoming similar to one another** through a number of developments. When this isomorphism is due to similar reactions by organisations to the changing features of a shared environment, DiMaggio and Powell call this 'competitive isomorphism', because it enhances the ability of these organisations to compete successfully in their market or their political circumstances. However, some drivers to convergence of organisational behaviour are not dictated in this way but rather come about because institutional pressures exist which organisations find it hard to resist, even though they do not contribute directly to the organisation's ability to respond successfully to its environment. Three types of institutional isomorphism are generally distinguished:

- o *Coercive isomorphism* 'results from both formal and informal pressures exerted on organizations by other organizations upon which they are dependent and by cultural expectations in the society within which the organizations function' (DiMaggio & Powell, 1983: 150). The coercion for local governments to use certain indicators, or the fact that it is expected that local authorities will publish performance information for legitimation and ranking purposes is a good example.
- o *Mimetic isomorphism* indicates that, in a situation of uncertainty, organisations model themselves on other organisations that have proved to be successful.
- o *Normative isomorphism* is a result of professionalisation. An important role is played by formal education and professional networks (DiMaggio & Powell, 1983: 152)

Again, **decision makers and organisations become selective in their use of information**, and this time, the selectivity is guided by isomorphic tendencies. This selectivity is likely to occur more in

cases of complex or ill-structured problems: in such cases, decision makers tend to rely on pre-packaged solution sets, based on 'ideology, professional identification or current organizational practices' (Jones, 2003: 408). Furthermore, 'the more uncertain the relationship between means and ends the greater the extent to which an organization will model itself after organizations it perceives to be successful' (DiMaggio & Powell, 1983: 154). When scanning the environment, managers 'generally look to other managers like themselves and to other firms like their own.' (Johnsen, 2005: 2). This is an important factor to explore in a context of local government decision making: how can local decision makers be made to move beyond 'how we have always done it, how others are doing it' (DiMaggio & Powell, 1983) in using information?

This process of imitation is also found in the research on the use of performance indicators and research information which we have summarised in an earlier section. We have showed for instance that the use of performance indicators differs substantially between policy domains (van Dooren, 2004), and that the uptake of research by policy makers is not the same in every policy domain (Réjean et al., 2003). At the organisational level, Askim suggested that it would be valuable to explore the Alpha hypothesis which emphasizes herd behaviour. This means that particular people or organisations could have a central role in whether certain information will be used in decision making, or whether decision makers will use information in making their decisions (Askim, 2006b). Organisational leadership is an important factor here (Moynihan & Ingraham, 2004: 441). The similarities to diffusion theory are apparent.

3.4   Psychological factors in the use of information in decision making

The mere availability of information does not necessarily lead to its use. Although the stages are not always easy to distinguish, a distinction needs to be made between information acquisition and information processing or interpretation (Rich & Oh, 2000). Decision makers make decisions about the value and usefulness of information. Information overload makes it harder to decide which information to use and how to use it. The challenge becomes to turn the 'superabundance' of data into 'meaningful messages' that can be used for decision making (Martin & Smith, 2006: 599). Just as data requires to be processed into meaningful 'information', information requires interpretation (March, 1988), and the same available information will not necessarily lead different decision makers to the same conclusions.

In this section we focus on psychological issues of information perception and information use. These include selective perception and interpretation of information, the role of decision making heuristics in processing information, and the phenomenon of groupthink.

Selective perception and interpretation of information

Managers' **information processing capabilities are distorted by selective perception** (Walsh, 1988). Faced with a wealth of information and data, people perceive and interpret information selectively. This means that certain information is not seen as 'relevant' while other information is.

Interpretation follows schemas (Augoustinos & Walker, 1996). A schema is a mental structure, used to organise information. It is a simplification of reality to aid the processing of information. New information is interpreted in line with this schema. Information not fitting into it is likely to be discarded. As a result, **prior assumptions and opinions influence whether certain information will be perceived and used for interpreting realities**. Resisting 'information that conflicts with one's prior assumptions about how the world works is just part of human nature' (Jones & Williams, 2007: 267). Certain bits of information will therefore only be used in decision making by 'policy makers whose policy theories include that information as an important element of their understanding of the world' (Weiss, Gruber, & Carver, 1986: 499). Prior attitudes will have an impact on later use of information. They affect 'the framing process that structures any choice situation' (Bamberg et al., 1999: 6). '[...] general attitudes influence the perceptions and lead to selectivity (Bamberg et al., 1999: 7). What are considered feasible alternatives is determined by these attitudes. Once the positions on a policy problem have been taken by the relevant actors, these are unlikely to be influenced by new evidence (Weiss, 1979: 429). Some ideas and policies are not based on information as such, but on deep core beliefs, myths and story telling, passed down over generations (Jones & Williams, 2007: 271). Ideas, even when bad, tend to persist: 'People come to identify emotionally with a policy idea—supposedly a means to an end—and value them in themselves rather than appreciating them for their utility in achieving goals' (Jones & Williams, 2007: 304). Decision makers have a '**selective interest in supportive information' after a commitment** (Janis & Mann, 1977: 214). Decision makers tend to become less receptive to information once a decision is made in a certain direction. Vigilance for other information declines, even if this information would suggest another course of action (Janis & Mann, 1977). Considering this conflicting information after the decision has been taken would create cognitive dissonance (Festinger, 1957).

Selectivity also occurs when judging the credibility of information or information sources. Decision makers use information that they perceive as credible (Coursey, 1992). Credibility logic theory states that 'individuals subjectively evaluate the believability of information on the basis of a variety of criteria often viewed as external to the decision' (Coursey, 1992: 316). Judgements of credibility are not necessarily based on a full inspection of the information, but may be solely based on the perceived trustworthiness of the organisation that has provided the information. Criteria may be different for different persons. Such criteria are who the provider or source of the information is (trustworthiness or prestige of source, existing relationships with sources etc.), whether the information comes from outside or inside the organisation, whether it is presented in a quantitative of qualitative way, etc. Yet, evaluations of information credibility or usefulness are not straightforward. If a certain type of information is already used, it is more likely to be judged as trustworthy (see dissonance reduction, Festinger, 1957). Credibility is also perceived to be higher when information was gathered using accepted methodologies, when it is easily understandable, when the source is a powerful person, or simply when everyone seems to think it is credible (De Biase, 2005).

Being selective in using information can be a deliberate process. There is a **tendency** for those in authority positions **to consider information as useful if it reinforces the existing power positions** (McGowan & Loveless, 1981: 334). Using information can incur risk, and selective exposure to opposing information is a strategy in volatile environments. Ideologies and party affiliation may be an important heuristic in judging information. It is risky to use information that may restrict the political manoeuvring space, yet at the same time managers want to be seen as competent and they therefore legitimate their decision by referring to information. In short, 'information selection and use occur in the context of different beliefs, preferences, and cognitive processes and will reflect organizational power and politics' (Moynihan, 2005b: 156).

The organisational context may also contribute to selective use of information. We have already dealt with the role of opinion leaders and gatekeepers, and will later discuss the phenomenon of groupthink. Decision makers' selective use of information influences how the organisation will collect its information: the acquisition of information in an organisation happens in anticipation of reactions by decision makers. Analysts will only expend resources to get and analyse information if they think it likely it will influence the decision maker (Sabatier, 1978: 400).

Decision heuristics

Like all people, managers have limited information-processing skills (Walsh, 1988). They therefore need **heuristics, or rules of thumb, to 'reduce the complex tasks** of assessing probabilities and predicting values to simpler judgmental operations' (Tversky & Kahneman, 1982: 3). Heuristics are used more frequently when there is no programmed mode of decision, i.e. especially in cases of uncertainty or complexity (e.g. scanning the environment). While they are generally quite useful, heuristics may sometimes 'lead to severe and systematic errors' (Tversky & Kahneman, 1982: 3). Below, we summarise the main heuristics and the **biases** they may lead to **in processing information** (based on Tversky & Kahneman, 1982; Bazerman, 2002).

- o The availability heuristic: something is judged based on how available the information is in one's memory. Something that evokes emotions or is easy to imagine is mentally available more easily. The actual probability or frequency of an event is less important. Biases arise due to:
    - o (In)effectiveness of the search set
    - o Retrievability, ease of recall
    - o Biases of imaginability
    - o Presumed associations/illusory correlations
- o The representativeness heuristic, where people judge something based on traits that correspond to previously held stereotypes or established categories. Biases arise due to:
    - o Insensitivity to prior probability of outcomes or base rate frequency
    - o Insensitivity to sample size
    - o Misconception of chance
    - o Insensitivity of predictability

- o The illusion of validity
- o Failure to recognise regression to the mean
- o The conjunction fallacy: a combination of two or more descriptors cannot be more probable than any one of the descriptors
- o Anchoring or focalism and adjustment: people rely heavily on an 'anchor' or one trait or piece of information when making decisions, and adjust this to come to a final decision. This anchor may be often historical or even trivial. Biases resulting from this heuristic include:
  - o Insufficient anchor adjustment
  - o Conjunctive and disjunctive event bias: a tendency to overestimate the probability of events that occur in conjunction with one another, and to underestimate event that occur independently (disjunctive)
  - o Overconfidence

Additional biases in information processing are the confirmation trap, whereby people tend to seek confirmatory information even when disconfirming information is available and more important (Bazerman, 2002: 34), and hindsight, 'knowledge of an outcome increases an individual's belief about the degree to which he or she would have predicted that outcome without the benefit of that knowledge' (Bazerman, 2002: 36).

Groupthink

A final factor in our review of psychological factors influencing how information is being used in decision making is the *groupthink* phenomenon. Groupthink is 'a mode of thinking that people engage in when they are deeply involved in a cohesive in-group, when the **members' strivings for unanimity override their motivation to realistically appraise alternative courses of action**' (Janis, 1982: 9). The process is potentially very strong in small cohesive groups with strong leadership, where nonconformism is not appreciated or is seen as a sign of disloyal behaviour. A well-known example is the decision making on the Bay of Pigs invasion, where it was shown that information was interpreted in ways that corresponded to already held convictions, and in a situation with little outside intervention (isolation – note the link to the role of gatekeepers). As a result of group think, certain information is misinterpreted or not used at all, there is a selective bias in information interpretation, a poor search for information, an incomplete survey of alternatives, risks of the preferred choice are not examined, and initially rejected information or alternatives are not re-examined (Parsons, 1995: 347). Recommendations to avoid this failure essentially revolve around the need for challenge to the group, e.g. through devil's advocates and discussion with external people, or avoidance of key leaders expressing their preferences too early on in the information gathering and analysing process.

4 International perspectives

The issues in this report have long been of concern to governments around the world. In this section, we look at a number of very different approaches taken in different countries which might point the way for UK government, at all levels, to increase and improve the use of information in decision making. Table 2 sets out the main initiatives which we consider, again tabulated against the main types of decisions for which the information might be used. The countries chosen represent a wide variety of models of government and public administration. (As with Table 1, this table omits major data gathering exercises, such as the various Censuses or regular national surveys in each 'country, since these are a resource for decision making but are not tied into any specific decision-making processes).

Table 2: International approaches to increasing the use of information in government decision making

COUNTRY	Federal/central government Ministerial/political decision-making	Federal/central government policy making	Federal/central government managerial analysis	Local/state services policy making	Local/state services managerial analysis	Public views on quality and efficiency of service
USA		GPRA (1992)	Federal Financial Management Improvement Act of 1996			
Canada	Improved Reporting to Parliament Project	Results-based Management Accountability Framework (RMAF)				*Canada's Performance* Annual Report
Denmark			Performance-based management systems		Performance-based management systems	
Norway					Norwegian Municipal Benchmarking Networks	
France	La loi organique relative aux lois de finances (LOLF, 2001)	La loi organique relative aux lois de finances (LOLF, 2001)	La loi organique relative aux lois de finances (LOLF, 2001)			
Japan		Government Policy Evaluation Act (GPEA) (2001)				

4.1   USA

There have been several well-publicised US government initiatives on use of information in government decision making, at federal, state and local government levels. Here we focus on the federal level, particularly GPRA and the Federal Financial Management Improvement Act (1996).

Government Performance Results Act (GPRA)

The Governance Performance Results Act (GPRA) requires federal organizations to make their annual performance plans readily available to the public. It was signed into law in 1993 and strongly promoted by the White House under Bill Clinton, although the original proposal for legislation was actually drafted by a Republican Senator under the previous Bush (senior) presidency (Radin 2000). However, it only became fully operational in 1997.

The original proposals in the legislation which eventually became GRPA included Congress setting performance measures for agencies. The eventual GPRA legislation, however, entailed agencies setting their own performance measures, with guidance from both Congress and the Executive Branch.

In spite of GPRA, and the 'activist' legislature which spawned it, there is little evidence that performance reporting is being used effectively (Talbot, 2006) by politicians. Nevertheless, there is evidence that many Federal Programmes have already made use of regularly collected outcome data to help them improve their programmes (Hatry et al, 2003).

Federal Financial Management Improvement Act (1996)

The purposes of this Act, which complemented the National Performance Review, were to:

(1) improve the confidence of the American people in the capability of the Federal Government, by systematically holding Federal agencies accountable for achieving program results;

(2) initiate program performance reform with a series of pilot projects in setting program goals, measuring program performance against those goals, and reporting publicly on their progress;

(3) improve Federal program effectiveness and public accountability by promoting a new focus on results, service quality, and customer satisfaction;

(4) help Federal managers improve service delivery, by requiring that they plan for meeting program objectives and by providing them with information about program results and service quality;

(5) improve congressional decision-making by providing more objective information on achieving statutory objectives, and on the relative effectiveness and efficiency of Federal programs and spending; and

(6) improve internal management of the Federal Government.

Clearly, there was a major overlap with GPRA. Once again, the efficacy of this legislation, and the wider National Performance Review of which if formed part, has been questioned (GAO, 2001).

4.2   Canada

In Canada, there have been a number of major initiatives both at the Federal level and in particular provincial governments, most notably Alberta. Here we focus mainly on two Federal initiatives.

Results-based Management Accountability Framework (RMAF)

The RMAF was first introduced in 2000 shortly after the federal government introduced 'Results for Canadians' – an expectation that managers would focus on measuring progress towards achieving results of their programs, policies and initiatives. RMAFs and the associated Risk-Based Audit Frameworks (RBAF) ensure that managers have the means and measures for program monitoring, performance improvement, risk management and reporting.

The Government of Canada's Evaluation Policy (April 2001) also encourages the development of an RMAF. The RMAF integrates the evaluation function within the context of results-based management and supports managers and decision-makers in objectively assessing program and policy results.

With the Government's renewed focus on good management including good planning, performance assessment, ongoing expenditure review, and Parliamentary pressure to increase transparency on the use of public funds, the RMAF and the RBAF remains critical planning and management tools. They not only provide frameworks to help monitor performance, manage risk and demonstrate results but they are inextricably linked to the department's MRRS. Results of monitoring and evaluation activities will feed into the MRRS reporting process.

The creation of the MRRS, which replaces the Planning, Reporting and Accountability Structure policy beginning in 2005/06, requires that departments develop a Program Activity Architecture (PAA). The PAA reflects how a department allocates and manages the resources under its control to achieve intended results and reflects how programs are linked to the department's strategic outcomes. The MRRS also requires departments provide information on results expectations and performance measures for elements and levels of the PAA. RMAF development and implementation will help support this requirement. In particular, the process of developing an RMAF assures:

- o Sound program design takes place by developing a logic model,
- o Intended results are clear by developing outcomes statements; and,
- o A performance measurement strategy exists by identifying key performance issues and meaningful indicators.

Societal Indicators and Government-wide Reporting in the Government of Canada

This initiative started from the belief that key societal indicators can be useful for government-wide analysis, allowing a deeper understanding of broad societal trends in order to guide policy and planning, and providing a context within which government performance can be assessed (Treasury Board of Canada Secretariat, 2007).

Improved Reporting to Parliament: The Improved Reporting to Parliament Project began in 1994 in collaboration with a parliamentary working group. Its objectives were to improve the Expenditure Management documents supplied to Parliament and to produce and distribute departmental planning

and performance information to Parliament and the Canadian public more efficiently and economically, using information technology (Bennett et al, 2001).

In February 1999 the Social Union Framework Agreement (SUFA) (http://socialunion.gc.ca/news/020499_e.html) was signed by the federal government and all provinces and territories except Quebec. The Agreement built on earlier arrangements and made the accountability dimension more visible, committing federal and provincial governments to:

- o be accountable directly to Canadians - that is, to monitor, measure and report publicly on social policy outcomes; and
- o develop joint accountability frameworks for new Canada-wide social initiatives supported by transfers to the provinces and territories.

Reporting on societal outcomes, or 'quality of life' was seen an important mechanism which 'can help inform processes for involving citizens in policy making'.

These ongoing commitments to improve reporting and to provide information from a government-wide perspective led to calls for the use of key societal indicators in government reporting. For example, the Thirty-Seventh Report of the Standing Committee on Procedure and House Affairs - *Improved Reporting to Parliament Project - Phase 2:* Moving Forward (June, 2000) describes them as 'higher-level performance indicators'. According to the report, 'societal indicators essentially will provide a bridge linking specific government program and policy objectives to broader societal considerations'.

In 2001 a series of seminars, bringing together parliamentarians, senior public servants and members of the policy community seminars concluded that societal outcome reporting could more effectively plug parliamentarians and citizens into the policy process, lay the foundation of a better working relationship between parliamentarians and the Public Service and provide a 'whole-of-government perspective'.

In March 2004, the Government released details of its comprehensive plan to modernize public sector management, entitled Strengthening Public Sector Management: An Overview of the Government Action Plan and Key Initiatives (http://www.tbs-sct.gc.ca/spsm-rgsp/index_e.asp). The plan included a commitment to improve reporting to Parliament and the public by making it 'more timely, clear and useful, based on a "whole of government" perspective' (p. 19).

The Comprehensive Reporting Framework recognized that the purpose of each type of reporting is different. 'Reporting on the outcomes achieved on shared societal goals is intended to provide information to citizens in order to engage them, as well as other players such as governments and non-governmental organizations, in the identification and achievement of shared goals. Reporting on departmental program results and service delivery is intended to allow citizens to hold governments accountable, ideally from the perspective of transparency and learning rather than simply to blame or criticize'.

Canada's Performance: The Government's initial explorations of this possibility led to the production of an annual report, Canada's Performance (http://www.tbs-sct.gc.ca/report/govrev/03/cp-rc_e.asp).

The annual report fulfils the purpose of providing a context for assessing government performance. However, an explicit link to the expenditure planning process is not there yet (Treasury Board of Canada Secretariat, 2007).

The reports provide information on a core set of societal indicators grouped into four themes: economy, health, the environment and communities. Trend information, international comparisons and disaggregations are provided, when applicable, for all of the indicators. The reports also provide information on certain key governmental programs that contribute to improving the quality of life of Canadians. The *Canada's Performance* reports therefore contribute to several objectives:

- o supporting parliamentarians who require a context for reviewing the results achieved by individual departments and agencies;
- o enhancing the government's citizen focus by serving as a vehicle to engage Canadians in discussion of future policy developments;
- o advancing results-based management in the federal government and improving the quality of program performance information available to Canadians and parliamentarians over time;
- o supporting horizontal management and policy development by providing an overview of the connections between various issues and between the responses to these issues by different departments and agencies; and
- o contributing to the transparency of the federal government's plans and achievements, as well as its accountability to Canadians and parliamentarians.

4.3   Denmark

In 2001 there were well over 100 'contract agencies' in Danish government, and they have to produce contracts for all their work and an annual report, which is audited (Drewry, Tanquerel and Greve, 2006).

For example, in the highways sector, since the 1980s there has been a tradition of using KPIs in the Danish public sector highways service. The contracts are generally based on specifications developed by joint committees of all the relevant actors, including the central government roads agency, the county and municipal councils and the highway consultants managing the projects.

Another example is given by the Danish National Board of Health, which uses SAS Activity-Based Management to provide citizens with improved healthcare services without increasing costs. Denmark is claimed to be among the leading countries in the world in benchmarking its hospitals' services, responding to the challenge to create opportunities to obtain more hospital output for the same money. The DRG System was employed for the first time in the year 2000 as a basis for treatment payments of inter-county free choice patients. It was subsequently used as a tool for changing the financing of the hospitals, to comply with the government's wish to give more money to those hospitals that are most effective and accomplish more. The DRG system helps the hospitals locally to control their budgets by supplying updated, real-time information regarding relevant activities, resources and financial data.

4.4 Norway

In Norway, a nationwide benchmarking project for local governments, called 'Networks for renewal and efficiency' (*Kommunenettverk for fornyelse og effektivisering*) involved the participation of more than 300 municipalities from 2002 to 2004 (over 70% of the total), grouped in 40 benchmarking networks (Askim, J., Christophersen, K-A and Johnsen, A, 2006). The project was initiated by the Labour government in 2000, and was carried out in co-operation with the Norwegian Association of Local and Regional Authorities (*Kommunenes Sentralforbund, KS*) and the Ministry of Local Authorities and Regional Development.

The Ministry for Labour and Public Administration, responsible for the modernisation program for the public sector, wanted to stimulate the use of performance indicators and to document and stimulate development work regarding efficiency, effectiveness and quality throughout local government.

Following a piloting phase with 9 municipalities in 2001, all municipalities were invited to participate. The government financed the direct operating costs of the project. From 2005 Networks for Renewal and Efficiency were established as a permanent member service of the Association of Local Authorities. Since then municipalities have had to pay a modest fee to participate.

There were three components to the operational project design: performance measurement, comparisons and networks. The measurement component was reinforced by another Government-initiated local governmental benchmarking effort, called KOSTRA, a scheme designed to help central government keep track of expenditures and activities in local government by means of financial and non-financial performance indicators. From 2002 reporting to KOSTRA was made compulsory for all municipalities in Norway.

The municipalities were asked to review the lessons they had drawn from the network meetings and to identify areas for improvement. Based on these presentations the network partners discussed whether or not to continue cooperating beyond the project phase. A few networks decided to split up, most reconfigured a little, and some developed new network guides. Many networks started again from the beginning with measurement activities to get time series data, and most agreed on a joint plan of action to learn from each other's successes and failures.

4.5 France

In France, the *Loi organique relative aux lois de finances* (LOLF 2001) strengthened the prerogative of parliament by enabling it to modify programme definitions, to change allocations between programmes, and by permitting it to carry out inquiries and to exercise oversight during the implementation stage. The aim was to make it possible to consider the budget based on objectives, classified into missions, programmes and actions. It was also intended to foster reform of the State and to simplify state structures through more effective parliamentary oversight. LOLF laid down a five-year agenda for ministries to shift to a results-oriented form of management and became fully applicable with effect from the Budget Bill debates in 2006.

Budgeting is no longer based on categories of expenditure but on 'programmes' combining 'a coherent set of actions dependent on a single ministry, which are linked to precise objectives defined on the basis of general interest outcomes and expected results, which will be subject to evaluation'. These ministerial programmes are grouped together in 'tasks' linking programmes which form part of a particular public policy. Within a particular programme, managers can now redeploy funds among the different categories of expenditure. In return, they must commit themselves to targets, be accountable for results and submit an 'annual progress report' (Rochet, 2002)

This has considerable impact on the work of Parliament. Instead of voting on some 848 chapters, as previously, MPs are now required to approve between 100 and 150 programmes, grouped together in roughly 80 tasks. This should have the consequence that Parliament should therefore no longer debate education policy, for example, for only three hours a year, because it has to approve chapter after chapter of budgetary provisions. With its programme structure based on objectives, and associated PIs, this has some similarities to the PSA approach in the UK.

The local authority level in France, for municipalities of 3 500 inhabitants and over, the municipal council must hold a debate on the main lines of the budget two months before its full consideration. This debate must enable the local assembly to identify the main budget policy priorities. The main lines of the budget do not have to be voted on - the law simply stipulates that the budgetary documents analysed during the debate must be accompanied by a number of appendices facilitating a more accurate appreciation and a better overview of the municipality's financial situation. These documents have to be published in a local bulletin distributed around the municipality.

These arrangements are intended to improve the information available to citizens and their participation in the preparatory work for the adoption of the budget. Under Article L 121-15 of the Municipal Code, citizens may attend the relevant meeting and, where appropriate, are kept informed through media coverage.

4.6   Japan

The Government Policy Evaluation Act (GPEA) was passed by the *Kokkai* in 2001 and implemented from 2002 onwards (http://www.soumu.go.jp/english/kansatu/evaluation/index.html). Policy evaluation in this context includes both classical evaluation and performance reporting. GPEA places the onus on government agencies to develop their own approach to policy evaluation and performance reporting within guidelines laid down by the core executive and the legislation. 10,000 policy evaluation/performance reports produced every year come from different parts of the public service (Talbot, 2006). However, recent research has indicated that the number of ministries which use the results of evaluation in policy making is still limited and only a few ministries have linked the results of assessment to the improvement or revision of their targeted projects (Koike et al, 2006).

4.7   Summary

This review has demonstrated that there have indeed been many attempts around the world to increase and improve the use of information in government decision making. Most of the evaluations of these initiatives have either concluded that such initiatives are difficult to make effective (although a number of the initiatives highlighted here are so recent that their cost-effectiveness is still not clear).

In general, these initiatives have been either been aimed at government managers or have developed in such a way as to be of most use to government managers. This is, of course, a valuable outcome in itself, However, as Pollitt (2006) has concluded, research into the use of performance information by ministers, parliamentarians and citizens has been very patchy, but much of what we do know suggests that evaluations and performance reports and audits are seldom highly valued by politicians or citizens – so it is currently hard to substantiate the claim that performance information contributes to the quality of democratic debate and to the ability of citizens to make choices.

There is no clear evidence that general practice in data collection and information provision for the public sector is more advanced in any one country covered in this review. However, there is such variation internationally that there is clearly room for each country to learn from others in specific aspects of practice and policy.

5   Conclusion and prospects for further research

In this report, we have reviewed the literature and research on how information is used in decision making. In addition, we have reported on a number of British and international initiatives to improve the evidence base of public sector decision making. While most of the literature is of a generic nature, it does show a number of exciting opportunities to study the use of information in a local government context. Below, we list some possible avenues for an empirical study of how decision makers in local government use information.

Diffusion of information

- o   How do particular sets of information, whether it be indicator datasets, publications, or stories get diffused? What kind of real and virtual networks are used in this diffusion?
- o   In this diffusion process, who are leaders? Who are gate-keepers? What is the position of the Audit Commission in this process and network?
- o   How do new sources of information gain prominence, while other never gain ground
- o   Isomorphism: to what extent do organisations model their use of information on other organisations? Is this 'competitive isomorphism' (potentially increasing the success of the organisation) or 'institutional isomorphism' (potentially increasing the risk of failure of the organisation)?

Information beliefs and information assessment

- o   What are the information beliefs of different professional groups and types of decision makers? How do their views change when confronted with very different views from other groups (particularly the views of professional data processors or data creators)?
- o   How do policy makers assess the credibility and usefulness of information? Does it differ between groups?
- o   Do different countries have different approaches to the role of 'information' in the decision-making process, and do information beliefs vary across public sectors? What is the relative position of the UK? Is its approach to information common, or should it be treated as exceptional? (see e.g. Pollitt, 2008 forthcoming)

How do managers scan their environment?

- o Information as surveillance: How does it work? How do managers scan their environment, and how do they collect or receive information of a contextual nature, i.e. information without apparent immediate links to specific future decisions?
- o What structures do managers surround them with to channel, select and summarise information?
- o What effect do major new government policies have on the way in which managers seek out and interpret new information (e.g. in the move from CPA to CAA)?

How could managers be encouraged to use information differently?

- o Methods for embedding information use in organisational routines ('dynamic capabilities')
- o Learning to live with psychological traits – taking advantage of 'selective perception' and 'group think'
- o Making 'theories of change' an important element in funding applications and ex post evaluations

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