Environmental Information:

Issues of Access, Policy and Information Resources Management

Volume I

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Declaration

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Abbreviations

BATNEEC	Best Available Techniques Not Entailing Excessive Cost
BPEO	Best Practicable Environmental Option
BPM	Best Practicable Means
CBA	Cost-Benefit Analysis
CBI	Confederation of British Industry
CCTA	Central Computer and Telecommunications Agency (UK)
COPA	Control of Pollution Act 1974
CRI	Chemical Release Inventory
CRIB	Current Research in Britain
DTI	Department of Trade and Industry (UK)
EA	Environment Agency (UK)
EEA	European Environment Agency
EIR	Environmental Information Regulations 1992
ENDS	Environmental Data Services
EPA	Environmental Protection Act 1990
EPCRA	Emergency Planning and Community Right-to-Know Act 1986
FOE	Friends of the Earth
FOI	Freedom of Information
FOIA	Freedom of Information Act
GAO	General Accounting Office (US)
GG	General Guidance
GMO	Genetically Modified Organisms
HMIP	Her Majesty's Inspectorate of Pollution (UK)
ICT	Information and Communication Technology
IM	Information Management
IP	Information Policy
IPC	Integrated Pollution Control
IRM	Information Resources Management
IS	Information Science
ISR	Inventory of Sources and Releases
ITM	Information Technology Management
LIS	Library and Information Science
LISA	Library and Information Science Abstracts
MIS	Management Information Systems

MSDS	Material Safety Data Sheet
NFDC	New Forest District Council
NGO	Non-Governmental Organisation
NRA	National Rivers Authority
OIRA	Office of Information and Regulatory Affairs (US)
OMB	Office of Management and Budget (US)
OSA	Official Secrets Act
PC	Personal Computer
PRA	Paperwork Reduction Act
PSR	Process Schedule Reference
QM	Quality Management
RAS	Radioactive Substances
RCEP	Royal Commission on Environmental Pollution (UK)
RTKNET	Right-to-Know Network
SARA	Superfund Amendments and Reauthorization Act
SSCI	Social Science Citation Index
SSSI	Site of Special Scientific Interest
TCR	Toxic Chemical Release
TRI	Toxic Release Inventory
UKELA	United Kingdom Environmental Law Association
UN ECE	United Nations Economic Commission for Europe
US EPA	United States Environmental Protection Agency
US GAO	United States General Accounting Office
US OMB	United States Office of Management and Budget

Abstract

This thesis investigates access to information and presents a summative evaluation of a government information access policy. The primary aim of this research is to build upon the theoretical approaches already employed within the field of information policy, to develop a new analytical model that can be used in the analysis of information access policies. This model will then be employed to examine the case study chosen for this research, which is the register for Integrated Pollution Control (IPC), which was set up by the UK government to give the public greater access to environmental information.

This thesis is divided into three sections. The first examines both the background to access to environmental information and the particular case study employed in this research. It investigates the history of access to environmental information in the UK, charting the moves that have been made from secrecy towards greater openness. It then examines the Environmental Protection Act, 1990, which established the IPC registers, and investigates a number of issues which have effected the way in which environmental information is made available through the registers. In particular, it identifies policy implementation and information resources management (IRM) as having a dramatic effect on the success of this information access policy.

Having identified an important link between information access, policy implementation and IRM in relation to the case study, the second section of this thesis then examines these relationships in greater detail. This second section is divided into two parts. The first examines the relationship between information access, policy implementation and IRM through a review of the literature, and goes onto develop an 'information access model', which can be used in the examination of information access policies. This model is then used to drive the case study analysis which is carried out in second part of this section. This case study analysis examines the implementation of the IPC registers firstly, by local authorities, where it identifies the existence of an underlying structure in the data set and secondly, by the Environment Agency, where the IPC registers can be seen to have been implemented in a far more uniform way.

In part three of this thesis, the local authority and Environment Agency case study findings are then examined in light of the 'information access model'. This analysis enables a number of different management styles to be identified and highlights four key areas, which could be seen to have resulted in the development of successful registers. These were the approach to the policy problem, the use of planning, the development of set procedures and control over the policy. Finally, the validity of the 'information access model', as a research framework, is examined. The 'information access model' is analysed in light of the empirical evidence gathered as part of this research and it is concluded, that this can be seen both as a useful investigative and evaluative tool for information policy research.

Part 1:

Rationale for research and research context.

Chapter 1. Introduction

1.1   Background and Rationale for Case Study

This thesis is concerned with the examination of access to information and presents a summative evaluation of a government policy designed to address this issue. In recent years, 'information access policies' have increasingly become the subject of work carried out within the field of information policy, particularly as academics have tried to gain a greater understanding of the relationship between policy and a variety of information issues. Information policy remains a relatively new area of study, but is one that has grown substantially in the last thirty years and this development has been accompanied by a growing debate about its theoretical foundations. This has led more recently, to a growing body of research that has been primarily concerned with improving the methodological frameworks that are available for use. (Rowlands: 1996, Browne: 1997a, 1997b, Turner: 1999) This thesis builds on that work, by constructing an analytical model which can be used to investigate and evaluate information access policies. This model is then employed to examine the relationship between information access and information management in relation to the case study used in this research. This case study examines the implementation of the registers for Integrated Pollution Control, which were set up by the UK government in 1990 to give the public greater access to environmental information.

The reasons for studying information access policies and for the adoption of the environmental case study, arose from some previous research carried out by the author in 1995. This research examined access to geographic information held by the UK government and looked at the effect that a number of issues, such as privacy, copyright, pricing, quality, standards and liability, were having on the use of this type of information. (Beasley: 1995) One of the main points highlighted by that study, was that all of these issues were linked by questions of access and that it was this issue that was the key for users of geographic information, as the other issues only came into play once information had actually been made available. Britain, at that time, did not have a freedom of information act but there was one group of users that did have a right of access to government information. These were the users of environmental information and this right of access was the result of Freedom of Information legislation for environmental information, that had been adopted by the European

Union.[1] It soon became apparent however, that despite having this legislation, these users were having problems in obtaining and using environmental information from government and that the adoption of freedom of information legislation had not solved all their problems in relation to information access.

The acknowledgement of this fact, led to the following two questions being asked:

- What difference had the introduction of freedom of information legislation made to accessing environmental information from government?
- What issues were still affecting access to environmental information from the government following the introduction of freedom of information legislation?

The research contained in this thesis resulted from the initial investigation into these two questions. This in turn led to the adoption of the case study and the development of a model which could be used to examine information access policies.

1.1.1 The case study

An examination into environmental information had identified that whilst Freedom of Information legislation gave people the right of access to environmental information, it did not prescribe the actual ways in which this information was made available by the government, and so this issue, of how information was made available, was quickly highlighted as being responsible for some of the difficulties experienced by the users of environmental information .

In preparation for the introduction of the European Union's Freedom of Information legislation, the UK government had decided that it would be advantageous to make some environmental information available to members of the public, and so they decided to set up a system of public registers, which would make information easily accessible. The idea for a system of public registers to make environmental information available, had first been proposed in the 1970's, however, it was only in the late 1980's and early 1990's that they were finally introduced. These public registers were designed to give the public access to a

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[1] This Freedom of Information legislation was the European Union's Directive on Freedom of Access to Information on the Environment 1990, which was transposed into UK law through the Environmental Information Regulations 1992.

wide range of environmental information[2] and were kept by local authorities or the national pollution control body.

One of the registers created was for Integrated Pollution Control (IPC). This register, established by the Environmental Protection Act 1990, was designed to provide the public with access to information on industrial pollution. However, it soon became clear, that the use of this and other registers to access environmental information, was not quite as straightforward as had originally been predicted. A number of issues soon arose, including those of location, standardisation, maintenance and user friendliness that affected the way in which information was made available through the register.[3]

By examining these problems, it soon became clear that they were largely the result of two things; firstly, the lack of consideration that had been given to the management of the registers, and secondly, the way in which the information access policy had been implemented. In recognition of these fundamental problems, the primary concern of this thesis is to investigate the three issues of information access, information resources management and policy implementation and to examine the relationships between them, so that a greater understanding of information access policies can be gained.

1.1.2 Information policy and the development of the model

With the above objective in mind, this thesis goes on to examine the specific information policy problem of how an information access policy can be successfully implemented. There are many things that can ultimately affect the success of an information access policy. These issues can include technology, costs and benefits, rights and duties, organisational structure and the role of stakeholders. However, in relation to this particular case study, two issues were identified, which were seen as being central to the problem. These were, firstly, the way in which the information access policy was implemented and, secondly, the use of information resources management. It appears obvious that both these issues would have a significant impact on an information access policy and so it is somewhat surprising, that following an examination of the literature, this appears to be an area of information policy where little, if any, research has been carried out. This thesis will therefore, examine the three key areas of information access, information policy and information resources management.

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[2] A full list of environmental registers can be found in the Department of the Environment's 1996 publication *Environment Facts: A Guide to Using Public Registers of Environmental Information*, Department of the Environment, London.

It will then go on to investigate the relationship between information access and information resources management and also that between policy implementation and information resources management. To examine these relationships, this research draws on ideas from information science, public policy and information resources management, which it then uses to create a model which can be employed in the evaluation of information access policies.

From examining research that has attempted to define the scope of information policy, access to information can be seen as a key issue within the field (Chartrand:1986, Oppenheim, 1996) and is therefore an important area for information policy research. The research contained in this thesis, makes a further contribution to this area and offers important insights, both from a practical and theoretical standpoint, into how information access policies can be successfully implemented.

This thesis also makes a number of new contributions to the study of information policy within the field of Information Science by:

- Adding a new case study, to those that are already available, for study within information policy.
- Examining the relationships between information access and information resources management, and information policy and information resources management. An area where little, if no, research has been carried out before.
- By devising an analytical model that can be used for studying information access policy in the future.

1.2 Research Aims and Objectives

This thesis has a number of aims and objectives which it sets out to achieve in the course of this research. These aims are arranged under three broad headings, which relate to particular areas of the research. To address these aims, a number of specific research questions are then asked. These research questions can be found linked to the appropriate chapter in Section 1.3.

1. The case study

- To summarise the history of access to environmental information in the UK.
- To investigate the setting up of the register system in England and Wales.

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[3] This will be discussed further in Chapter 3.

- To analyse the implementation of the IPC registers, as set up under the Environmental Protection Act 1990.

- To identify any diversity in the local authority registers or Environment Agency registers.

- To compare the registers set up by local authorities and the Environment Agency.

2.   Information policy

- To identify, from the literature, the key issues that influence the development of information access policies

- To investigate the issues that affect the successful implementation of an information access policy.

- To analyse the relationship between information access and information resources management.

- To analyse the relationship between information policy and information resources management.

3.   The conceptual model

- To devise an analytical tool that can be used both to investigate and evaluate the implementation of information access policies.

1.3   Research Strategy and Chapter Overview

The thesis is structured in three parts:

- **Part 1:   Rationale for research and research context.**

- **Part 2 (a):   Evidence from the literature and the basis for a model.**

-          **(b):   Primary data gathering.**

- **Part 3:   Synthesis and conclusions.**

The contents of each chapter from the three parts will now be summarised and specific research questions highlighted.

Part 1: Rationale for Research and Research Context

Chapter 2. Access to environmental information

The aim of this chapter is to set out the background to the case study by examining the area of environmental information. The first section of this chapter provides a definition of environmental information and examines why access to it is seen as important within Western democracies. The second section examines the significant role that international institutions have played, in recent years, in encouraging access to environmental information by identifying three pieces of international legislation that have had a profound effect on the way in which environmental information is made available in Britain.[4] The third section summarises the history of access to environmental information in the UK, describing how a policy of secrecy has shrouded access for much of the Nineteenth and Twentieth Centuries. It then charts the steps that have been taken towards greater openness since the 1970's, when legislation was finally passed to encourage access to environmental information.

The specific research questions for Chapter 2 are as follows:

- What is environmental information?
- Why do we need access to environmental information?
- What has been the role of international bodies in encouraging access to environmental information?
- What was the history of access to environmental information in England and Wales?
- What were the reasons for the setting up of a register system in England and Wales?

Chapter 3. The Environmental Protection Act and Integrated Pollution Control register

After a review of the history of access to environmental information, the aim of this chapter is to set out the context of the research through an investigation of the case study. This chapter examines the background to the case study, focusing on the adoption of the Environmental

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[4] These are the European Union's Directive on Freedom of Access to Information on the Environment, the United Nation's Action Plan for Sustainable Development and the recent adoption of the United Nations Economic Committee for Europe Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters.

Protection Act and the creation of the register for Integrated Pollution Control. The first section examines the reasoning for the measures that were introduced by the Environmental Protection Act and traces the history of the legislation through to its enactment. Section two then goes on to examine Part I of the Act which led to the setting up of the system of Integrated Pollution Control. The third section then goes on to examine the information provisions found in Part I of the Act which led to the setting up of the registers for Integrated Pollution Control and examines their implementation The final section investigates the day-to-day running of the registers and highlights a number of particular problems that have arisen in relation to the IPC register and examines why these have occurred.

The specific research questions for Chapter 3 are as follows:

- What led to the setting up of the Integrated Pollution Control Register?
- What were the basic requirements for setting up this register as set out in the Environmental Protection Act?
- What are the specific problems that have been associated with this register?
- Why have these particular problems occurred?

Part 2(a): Evidence from the Literature and the Basis for a Model

Chapter 4.   Information policy: a study of the relationship between information access, policy implementation and information resources management

The aim of Chapter 4 is to investigate information access policies and their relationship with policy implementation and information resources management through a critical review of the literature. The first section sets out the research questions examined in this chapter. The second section looks at the methodology used for the literature review. The third section then looks explicitly at access to information. It examines what information access is and the reasoning behind it. It looks specifically at information access in relation to government information and examines different models of access. Finally it identifies a number of issues that can affect the success of information access policies. The fourth section focuses on the implementation of information policy. It draws on work from the policy sciences to examine the policy process and specifically policy implementation. The fifth section looks at the development of information resources management, particularly in the United States and examines some of the ideas for managing information that have emerged out of this movement. It then goes on to look at how one of these ideas, the information life cycle can be used as a tool to understand the management of information resources. Sections six and seven

then turn to analyse the relationships between information access and information resource management, and policy implementation and information resource management, an area where little research has been carried out in the past. Finally, section eight identifies a model to be used in the examination of information access policy. This conceptual model is used to examine the relationships of the two key issues of policy implementation and information resources management, and is employed to give intellectual structure to the case study evidence.

The specific research questions asked for Chapter 4 are as follows:

- What is an information access policy?

- Why do we need access to government information?

- How have information access policies developed?

- What are the specific issues that affect information access policies?

- What is information resources management?

- What are the origins of information resources management?

- What are the basic concepts that underpin information resources management?

- How has information resource management been used?

- How has information resource management developed?

- What is information life cycle analysis?

- How can the information life cycle be employed in the management of information resources?

- How can work carried out in the policy sciences help us to analyse information policy?

- What is the policy process?

- What are the different approaches to policy implementation?

- What is the relationship between information access and information resources management?

- What is the relationship between information policy and information resources management?

- Can a model be devised that can be used to examine information access policies?

Part 2 (b): Primary Data Gathering

Chapter 5.   Research methods

This chapter identifies the research methods used to investigate the case study. The case study examines the two key issues of policy implementation and information resources

management and the relationships between them. It then investigates the influence that these two issues have had on the policy that led to the setting up of IPC registers. The information access model is employed in the case study to provide a clear structure, through which, these issues and their interactions can be examined. The first section sets out both the case study used in this research and the information access model. The second section then examines the research methods employed to conduct the data collection and summarises the structure used in the analysis of this data in Chapters 6 and 7. The final section briefly examines the discussion of the research findings which are set out in Chapter 8.

The specific research questions for Chapter 5 are as follows:

- What are the research methods used in this research?
- What are the advantages and disadvantages of using questionnaire research?
- What were the steps taken in the design of the questionnaire?
- What are the key areas addressed in the questionnaire?
- How were questionnaire respondents identified?
- How were the case study visits conducted?
- How were the visit locations identified?
- What were the key areas addressed by the case study visits?
- What were the key areas addressed by the case study interviews?
- How was the data from the questionnaire returns, case study visits and interviews analysed?

Chapter 6. Local authority case study findings

This chapter investigates the IPC registers set up by local authorities in England and Wales, through the analysis of the data collected from the questionnaire returns, case study visits and interview transcripts. The first section sets out the research questions examined in this chapter. The second section examines the characteristics of the data collected from the questionnaire survey and other statistical sources, and explores the validity and reliability of the data set. The third section reviews the analysis of the local authority data set using a number of multivariate techniques, including hierarchical cluster analysis, discriminant analysis and factor or principal components analysis. The fourth section sets out the preliminary conclusions drawn from the multivariate analysis and the final section, attempts to validate these preliminary conclusions by drawing on the wider case study data, including that from the case study visits and interviews, as well as from the questionnaire responses.

The specific research questions for Chapter 6 are as follows:

- Is the local authority questionnaire data set reliable and valid?

- Is there any underlying structure to the local authority data set?

- What are the best statistical techniques to establish if there is any structure in the data set?

- What was the design for the cluster analysis?

- Are the clusters identified from the cluster analysis valid?

- Can discriminant analysis confirm the results of the cluster analysis?

- How can the clusters identified from the cluster analysis be interpreted?

- Can factor analysis identify any structure in the data?

- Can the results of the factor analysis be validated by the wider case study data?

Chapter 7.   Environment Agency case study findings

This chapter examines the IPC registers set up by the Environment Agency in England and Wales, through an analysis of the data gathered from the questionnaire returns, case study visits and interviews. This chapter is arranged in four sections. The first section sets out the research questions addressed in this chapter. The second section sets out the data collected from the Environment Agency questionnaire survey and government statistical sources and examines its reliability and validity as a data set. The third section sets out the case study visits and interviews that formed the second method of data collection for this investigation, and the final section examines the implementation of the IPC registers by the Environment Agency by drawing on the data collected from the case study visits, interviews and questionnaire returns. Unlike the local authorities, visits to the Environment Agency had highlighted the uniformity of the IPC registers, and in light of this, the multivariate analysis that had been used to examine the variance in the local authority data, was considered inappropriate. The analysis of the Environment Agency questionnaire data set was therefore conducted using univariate and bivariate techniques, and was structured around the same issues that had been used to examine the local authority IPC registers in the final section of Chapter 6.

The specific research questions addressed in Chapter 7 are as follows:

- Is the Environment Agency questionnaire data set valid?

- Is the Environment Agency questionnaire data set reliable?

- Have size issues had any affect on the Environment Agency's IPC registers?

- What procedures have been put in place by the Environment Agency to support access to

the registers?

- How is the information contained within the Environment Agency's copy of the register being used?
- What particular management strategies has the Environment Agency put into place?
- How does the Environment Agency support users of the registers?
- What have been the register's cost implications for the Environment Agency?

Part 3: Synthesis and Conclusions

Chapter 8.   Discussion and interpretation

This chapter examines both the local authority and Environment Agency case study research findings in light of the 'information access model' that was developed in Chapter 4. The first section summarises the main theories underpinning the 'information access model'. It examines the reasons for its development and sets out its purported value both as an investigative and evaluative tool. The second section then carries out an examination of the local authority and Environment Agency case study findings using the 'information access model', both to investigate and evaluate the implementation of the IPC registers. The final section then investigates the validity of the 'information access model' for information policy research by examining its prescriptive value and effectiveness as an evaluative research device.

The specific research questions addressed Chapter 8 are as follows:

- What is the 'information access model'?
- What is the purported value of the 'information access model' for information policy research?
- Can the 'information access model' be used to explain the local authority and Environment Agency case study findings?
- What is the value of the 'information access model' for information policy research?
- What were the limitations of the 'information access model' when used in this research?
- Are there any areas where the 'information access model' can be further developed?

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Chapter 9.   Conclusions

This chapter will firstly consider the limitations of this piece of research, before going on to provide a summary of the research findings. Finally, it highlights a number of directions for future research.

Chapter 2.   Access to Environmental Information

2.1   Introduction

As has been seen from the previous chapter, the main aim of this research is to examine the implementation of information access policies, using the information provisions contained within the Environmental Protection Act 1990, as a case study. However, before turning to look at the specific details of this case study in the next chapter, it is important to provide some context for it, by examining the background to the environmental area. This chapter, therefore, investigates the history of access to environmental information in the United Kingdom. The first section looks at what environmental information is and why access to it is needed. The second section looks at the work of three international bodies that have had a significant influence on the way in which environmental information is made available in Britain. The third section, provides an outline of past environmental information policy in the United Kingdom, looking specifically at the history of secrecy which has plagued this area. The final section, then examines more recent moves towards widening access to environmental information and the legislation that has been enacted, during the last thirty years, to accomplish this.

2.1.1   Environmental information

The concepts of the 'environment' and particularly those of 'conservation' and 'environmental protection', are something of a twentieth century invention. For example, the widespread use of the term 'conservation' in its modern sense, of meaning the careful management of natural resources, was only introduced at the beginning of the twentieth century in North America and remained hardly known in Britain until the 1950s. (Clapp: 1994) Now although the terminology used to describe environmental matters is relatively new, Britain itself does have a long history of environmental protection, dating back to medieval statutes that dealt with small-scale pollution. (Ball & Bell: 1995) Since that time and particularly following the industrial revolution, environmental concerns have cyclically come to the fore of British politics. In the 1860's, for example, the rapid growth of Victorian towns created fears about a number of environmental problems, including those of sanitation and atmospheric pollution. This, in turn, led to the creation of a loose environmental movement with a number of lobbyists calling for legislation on these matters, and by the end

of the 1870s both of these environmental problems had been tackled by parliament.[1] (Clapp: 1994) In Victorian Britain, however, concerns about environmental problems were only raised by the privileged few, and it would be another one hundred years before a widespread environmental movement developed.

During the 1960's, public anxieties over environmental matters again came to the fore of politics and led to the birth of the so-called 'green' movement. However, it was only during the 1980's and 1990's that this movement would come of age, when environmental issues began to receive widespread media coverage and were thrust to the front of the public's consciousness. This explosion in environmental awareness, in turn led to a huge growth in the demand for environmental information, which came from many groups including government, industry, teachers, voluntary organisations and the general public. All of these users required accurate information that could be easily understood, manipulated and exploited, to help them make more informed decisions about the environment. (Tozer: 1992)

So what is environmental information? There are numerous definitions of the term 'environmental information' available, many of which originate from the legal documentation from international or governmental bodies. These definitions do, however, contain a number of subtle differences, as they were designed with both different purposes and target audiences in mind. It is beyond the scope of this study to examine them all and so, instead, it will focus on two, both of which have had or will have an important role to play in the way environmental information is defined in Britain. The first of these definitions comes from the European Union Directive on Freedom of Access to Information on the Environment (90/313/EEC) and the second from the United Nations Economic Commission for Europe's (UN ECE) Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters[2].

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[1] Fears about public health problems, such as sanitation, led to the passing of the landmark Public Health Act 1875, whilst atmospheric and later water pollution were dealt with by the Alkali Act 1863 and the Rivers Pollution Prevention Act 1876 respectively. (Ball & Bell: 1995)

[2] Other definitions include that devised by the OECD for policy makers, at its 1991 International Forum on Environmental Information. Here environmental information was defined as: 'data, statistics and other quantitative and qualitative materials that decision-makers require to assess conditions and trends in the environment, to determine and adjust policy directions, and to invest funds. Such information permits decision-makers to analyse cause and effect, to develop strategies for action, to manage natural resources, to prevent and control pollution, and to evaluate progress made towards goals and targets.' (Strachan: 1996)

One of the main definitions currently in use in the United Kingdom, comes from the European Directive on Freedom of Access to Information on the Environment, which was published in 1990. In this Directive environmental information is described as being:

> 'any information ... on the state of water, air, soil, fauna, flora, land and natural sites and on activities (including those which give rise to nuisances such as noise) or measures adversely affecting, or likely to affect these, and on activities or measures designed to protect these, including, administrative measures and environmental management programmes'.[3]

This Directive was designed to create a basic right of access to environmental information, for all European Union citizens, and harmonise this type of legislation throughout the member states. These objectives led to the creation of a fairly broad definition of environmental information covering the three main environmental media of 'water, air [and] soil' and also the flora and fauna contained within them. It also incorporated a number of other environmental issues, such as human activities that could adversely affect or help to protect the environment. There are, however, a number of important areas of environmental interest that this definition does not include. It fails for example, to include information on climatic change or of the effects of environmental problems on human life and so has been criticised for not bringing some important areas of environmental information within the terms of the Directive. (Birtles: 1991)

The second definition is from the UN ECE Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters,[4] adopted in 1998. In this Convention, environmental information is described as meaning any information on:

> '(a) The state of elements of the environment, such as air and atmosphere, water, soil, land, landscape and natural sites, biological diversity and its components, including genetically modified organisms, and the interaction among these elements;
>
> (b) Factors, such as substances, energy, noise and radiation, and activities or measures, including administrative measures, environmental agreements, policies, legislation, plans and programmes, affecting or likely to affect the elements of the

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[3] Article 2(a).

[4] Also known as Aarhus Convention as it was adopted at a conference in Aarhus, Denmark on 23 –25th June 1998.

environment within the scope of the sub-paragraph (a) above, and cost-benefit and other economic analyses and assumptions used in environmental decision-making.

(c) The state of human health and safety, conditions of human life, cultural sites and built structures, in as much as they are or may be affected by the state of the elements of the environment or, through these elements, by the factors, activities or measures referred to in sub-paragraph (b) above.'[5]

This is probably one of the broadest definitions of environmental information available and was developed to bring the vast majority of environmental issues within the terms of the Convention. In many ways, sections (a) and (b) include much of the same information as the earlier European Union definition. However, it is paragraph (c) which really brings a wider range of information within the terms of the Convention. Information about humans and human relationships with the environment are now included, something which the EU definition had been widely criticised for leaving out. This UN ECE Convention was adopted by much of the industrialised world, including the UK, at the end of 2001. It is therefore expected, that in the coming years this will have an important bearing on how environmental information is defined in the UK, and what environmental information citizens are able to access from public bodies.[6] (Wates: 1996)

2.1.2   Why do we need access to environmental information?

Over the last twenty years, environmental issues have increasingly become a matter of concern, both in the political arena and amongst the public as a whole. Widespread coverage by the media of a number of high profile environmental issues, such as global warming, the Chernobyl incident and more recently questions of food safety, has meant that people are increasingly aware of the effects that environmental problems can have on their lives. In response to this, the number of people wishing to access environmental information has steadily increased. Research has shown, for example, that when the public is questioned about their information needs in relation to citizenship, requests for environmental

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[5] Article 2.3 of the Convention.

[6] The UN ECE definition is likely to have a further impact on the UK, as the European Commission has already stated that it will bring in a wider definition of environmental information in its review of the Directive on Freedom of Access to Information on the Environment and it is likely that this is the definition that they will adopt.

information feature highly on that list.[7] Having access to environmental information has therefore been seen as increasingly important by members of the public, but why should we have access to it? A number of reasons have been put forward as to why the public should have access to environmental information. These reasons tend to fall into three categories; firstly, that it would provide better accountability; secondly, that it would aid law enforcement; and finally, that it would encourage public participation in the democratic process and in helping to protect the environment.

Accountability

One of the main reasons put forward, for the public having access to environmental information, is that it would give them the opportunity to hold both industry and the enforcing agencies properly accountable. As the public's awareness of environmental issues has grown, industry has increasingly tried to promote itself as environmentally friendly in an effort to win consumer confidence. It is only by having access to environmental information however, that the public can properly judge whether a company's so-called 'green' image is justified.[8] Greater disclosure of environmental information would also lead to enforcement agencies being held more accountable. Questions, as to whether the standards set by enforcement agencies were rigorous enough, could easily be answered if information about those standards was made widely available. Likewise, having access to this type of information would also mean that the public could see if these standards, once in place, were being properly enforced. This would lead to greater public confidence in the enforcement authorities, as the public would be able to judge for themselves if industry was being properly regulated. (Frankel: 1984)

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[7] For example, see Marcella & Baxter's paper on information needs in relation to citizenship. In this study, 20.3% of respondents had sought environmental information in the past and 21.6% of respondents thought that they would need to access some kind of environmental information in the future. (Marcella & Baxter: 1999)

[8] For example, information on pollution could be used by the consumer to make direct comparisons between the products and services of rival companies on a number of environmental criteria. The availability of comprehensive and accurate environmental information, used in conjunction with other measures, such as price and value-for-money, would therefore enable the public to make informed decisions about what goods or services they wanted to buy or use. (Frankel: 1984)

Law Enforcement

The second reason for providing the public with access to environmental information is that it would lead to better law enforcement and, therefore, the better policing of polluters. Most enforcement authorities are unable to keep all industrial activities under surveillance all of the time and so the public has a crucial role to play in identifying the occurrence of pollution. Many pollution problems are highly visible, such as the emission of black smoke from a chimney or illegal waste tipping, and so the public can help to identify these problems and inform the enforcement agencies about them. (Frankel: 1984) Some pollution problems, however, are not so visible. Unauthorised emissions to water, for example, can be carried out without anyone's knowledge and sometimes their occurrence is only highlighted through the analysis of data collected by enforcement agencies. The public, therefore, need to be able to access the same pollution information as the enforcement authorities, if they too are to be able to assess levels of compliance.[9] (Ball & Bell: 1995)

Public Participation

Finally, wider access to environmental information would mean that the public would be able to play a wider role in the decision-making process. Governments, through the adoption of different policies and legislation, are often the most influential decision-makers in relation to the environment and as they operate on behalf of the electorate, it is important that the public are allowed to judge these policies on their own merits. They can only do this, however, if they have access to a wide range of environmental information. As the European Environment Agency (EEA) pointed out:

> 'citizens who feel (or are) ill-informed are less liable to lend their participation or backing even to policies and practices that experts regard as unassailably safe and sound. Only by sharing relevant knowledge can we apply the principle that environmental decision-making is a shared responsibility.' (European Environment Agency: 1994:1)

Wider access to information, therefore, has an important role to play in helping the public both to understand and participate in measures designed to protect the environment.

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[9] Providing wider access to this information could also mean that companies found in breach of their limits could be prosecuted by someone other than the enforcing authority, therefore providing a further deterrent against unlawful polluting.

Access to information is, therefore, essential if the public is to play a full role in environmental protection. As without it people cannot properly assess the risks that they face, they cannot hold industry or the enforcement agencies accountable, they cannot help with law enforcement and they are unable to fully participate in the decision-making process. Secrecy can be seen as creating a climate of fear, where judgements are made on hearsay and suspicion, rather than on fact and discussion and it is only by placing more information in the public domain that these fears are dispelled. This has been acknowledged by a number of national and international bodies over the last ten years and has led to a much stronger commitment, from these bodies, to provide access to environmental information.

2.2   Access to Environmental Information: The International Dimension

One of the most dramatic changes of the Twentieth Century has been the growth of globalisation, with individual countries, including the UK, participating far more widely in international politics. For Britain, international commitments, such as those to the European Union and the United Nations have increasingly affected areas of national government and this is especially true when examining access to environmental information. Over the last ten years, there have been a number of international treaties, conventions and European Union directives, that have impacted on this area and so before outlining the way in which the British government has gone about putting environmental information into the public domain, these outside influences must also be taken into account.

The following section looks at three internationally agreed documents that the United Kingdom has either had to transpose, due to its commitments to the European Union, or has voluntarily signed up to as part of its international agreements, which all support the need for improved access to environmental information. The first of these is the 1990 European Union Directive on Freedom of Access to Information on the Environment (90/313/EEC), which was transposed into British law in 1992. This piece of legislation gave citizens in the United Kingdom the *right* of access to environmental information from public bodies for the first time and so had a dramatic affect on this area. The second is the agreement that came out of the 1992 United Nations Conference on Environment and Development, the so-called 'Earth Summit', which had access to environmental information at the heart of its plans for sustainable development. The final document is the 1998 United Nations Economic Commission for Europe Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters which only came into force

on 30th October 2001. As a result of this its effects are still unknown, but as it goes somewhat further than the EU Directive and will probably affect future revisions of the Directive, it is likely to have a large influence on the way in which environmental information is made available in the UK.

2.2.1 The European Union and the European Directive on Freedom of Access to Information on the Environment

Originally, the European Community, did not recognise the environment as an area of specific policy concern. The 1957 Treaty of Rome, which established the EEC, made no mention of environmental protection reflecting, instead, on the more dominant economic concerns of post-war Europe. However, this concentration on economic development would soon mean that environmental issues came to the fore of European politics. In the 1960's, a number of Directives were passed with the aim of preventing market distortions, that resulted from differing environmental legislation in member states. However, it was only in the 1970's that the need for a specific environmental policy aimed at controlling the side-effects of increasing European industrialisation was identified. This was to result in the adoption of the first Environmental Action Programme, in 1973, with the aim of improving the quality of life and living conditions for all the people of the community.[10] (Lowe & Ward: 1998b) This first Environmental Action Programme, laid out the basic principles and objectives of European environmental policy and set out three specific areas where work was needed. These included improving environmental quality within the Community, the reduction of pollution and further co-operation with other international bodies on environmental matters. Since then, there have been four more Environmental Action Programmes each with slightly different policy objectives. (Polden & Jackson: 1994)

Although each of the Environmental Action Programmes had had a slightly different focus, they have all been linked by a commitment to wider access to environmental information. The first Environmental Action Programme for example, contained a number of provisions

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[10] Despite the adoption of both the first and second environmental action programmes, in 1973 and 1977 respectively, it was only in the 1980's that the environment become a distinct policy sector within the European Community. In 1981, a separate Environment Directorate-General (DG XI) was finally established. Which in turn became the driving force for both environmental policy and legislation within the EC. Following on from this, the European Community's commitment to the Environment was finally formalised through the adoption of the Single European Act 1986. This Act defined both the objectives and scope of European environmental policy and placed environmental protection at the heart of this. (Lowe & Ward: 1998b)

that dealt with the exchange and use of environmental information and this work would continue in later programmes. During the early Action Programmes however, questions of information access usually arose as part of the response to other issues, but this was to change with the Fourth Environmental Action Programme,[11] which contained a specific provision calling for 'a Community law on the freedom of access to information on the environment'.[12] (Bakkenist: 1994: 12) This resulted in the European Commission putting forward a proposal for a Directive on access to environmental information, which was finally adopted by the Council of Environment Ministers on 7th June 1990.[13] (Hallo: 1996) Member states were then given a deadline of 31st December 1992 to adopt legislation that would make them compliant with this Directive.[14]

The main purpose of the Directive was described as being:

> 'to ensure freedom of access to, and dissemination of, information on the environment held by public authorities and to set out the basic terms and conditions on which such information should be made available.'[15]

The Directive therefore set out the minimum level of access to environmental information across all member states. Member states were free to provide further levels of access than those set out in the Directive, if they wanted, but few actually did with the vast majority of member states transposing the Directive practically verbatim. (Hallo: 1996)

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[11] The Fourth Environmental Action Programme ran from 1987 – 1992.

[12] This was not the first time that the idea of a law giving access to environmental information had been raised in Europe. In 1985, a draft resolution had been tabled by two members of the European Parliament which called upon the European Commission to introduce a proposal for legislation which would give the public the right of access to environmental information. The European Parliament then asked its Environment Committee to put forward a report and proposals on the matter, which it did in 1987. These proposals were the subject of a plenary debate where a number of amendments and deletions were made. This resulted in the original proposal being withdrawn and there the matter was to rest until the adoption of the Fourth Environmental Action Programme. (Kramer: 1992)

[13] For the full text of the Directive on Freedom of Access to Information on the Environment see Appendix 1.

[14] Article 9.

[15] Article 1.

Coverage of the Directive

The Directive contained a fairly broad definition of the phrase 'information on the environment', as discussed in Section 2.1.1, and applied to environmental information in 'written, visual, aural or data-base' form.[16] So that as well as covering written documentation, it also included aerial photography, satellite imagery, tape recordings and most importantly, information kept in computerised or digital form.

The Directive placed an obligation on member states to give a right of access to environmental information 'to any natural or legal person at his request and without his having to prove an interest.'[17] This meant that as well as individuals, groups, such as environmental non-governmental organisations (NGO's), also had a right of access. The Directive also gave this right regardless of a person's country of residence, so that anyone, even if they lived outside the European Union, could apply for access to environmental information in a member state affected by the Directive. (Hallo, 1996)

The Directive then defined the bodies that had a duty to provide access to environmental information, which were 'Any public administration at national, regional or local level with responsibilities, and possessing information, relating to the environment'.[18] This definition, however, raised a number of concerns about which bodies would actually be covered. The use of the term 'responsibilities for the environment', led Hallo to observe that public administrations could easily claim that they were responsible for other areas, such as housing or transportation, and use this to deny people access to the environmental information that they possessed. (Hallo: 1996)[19]

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[16] Article 2(a)

[17] Article 3.1.

[18] Article 2(b)

[19] The definition was also criticised for appearing not to cover private companies with environmental responsibilities and thus failing to deal adequately with the trend in member states towards the privatisation of utility companies and other public bodies. (Birtles: 1991)

Requests for Information

When a public body received a request for information, the Directive required that they respond to that request within two months. It also set out that the charges made by public bodies for supplying information must 'not exceed reasonable cost'.[20]

Exemptions

Like most freedom of information legislation, the Directive also contained a number of exceptions that could be used as grounds to prevent access to environmental information. Article 3.2 sets out seven different types of information which member states could refuse access to. These included:

1.   information relating to international relations, national defence, or the proceedings of public authorities;
2.   information relating to public security;
3.   matters which are, or have been, *sub judice*, or under enquiry;
4.   information that is commercially or industrially confidential;
5.   personal data or files;
6.   information supplied by a third party; and
7.   information whose disclosure could lead to environmental damage.

In addition to these seven exceptions, Article 3.3 also stated that 'a request for information may be refused where it would involve the supply of unfinished documents or data or internal communications, or where the request is manifestly unreasonable or formulated in too general a manner.'

On the whole, the exceptions, included within the Directive, appear to be fairly standard.[21] However, they have been criticised by some commentators, for their very broad coverage. Hallo, for example, argued that the drafting of some of the exemptions was particularly poor leading to an 'inappropriately broad application'. The wording of exemption three, for

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[20] Article 5.

[21] The only difference from other freedom of information legislation is the inclusion of exemption seven, which was designed to safeguard particularly sensitive environmental information, such as the location of nesting sites for protected birds.

example, to cover 'matters which are, or have been, *sub judice,*' meant that this exemption could be used to cover any case that had ever been considered in court, even if that case was now concluded. (Hallo: 1996:12) However, it was exemption four concerning commercially confidential information, that Bakkenist described as being 'the greatest potential loophole in the Information Directive'. (Bakkenist: 1994: 35) She argued that because there was no definition of commercially confidential information, this exception could be used to draw a veil over all types of business information, and not just that which was truly commercially confidential, as was originally intended. (Bakkenist: 1994)

Practical Arrangements

There was nothing contained within the Directive as to what practical arrangements member states should put in place to make environmental information available to their citizens, despite the fact that, as is argued throughout this thesis, it is these very arrangements which hold the key to the success of this kind of legislation.[22] The Directive itself required only that 'information is effectively made available'.[23]

The Environmental Information Regulations

The Directive was transposed into British law through the Environmental Information Regulations (EIR)[24] which came into force on, the deadline date of, 31st December 1992.[25] The adoption of these Regulations finally gave the British public a right of access to environmental information held by public bodies and for a country, which up until then had had very little freedom of information legislation on its statute books, this marked a substantial change.

The Environmental Information Regulations contained a number of significant changes from the wording of the Directive, which meant that in some areas they went further than the

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[22] These practical arrangements were also seen as being essential to the creation a successful access programme by Hallo who argued, 'Where the practical arrangements have been organised indifferently or poorly, the usefulness of access to environmental information legislation is substantially diminished.' (Hallo: 1996: 15)

[23] Article 3.1

[24] SI 1992 No. 3240

[25] Unfortunately, a full examination of the Environmental Information Regulations is beyond the scope of this study but for more information see Birtles: 1992 and Roderick: 1996 or for a copy of the Regulations see Appendix 2.

Directive's requirements but in others were far more restrictive and this led to criticism both from commentators and the European Commission.[26] Practical experiences with the Directive have highlighted a number of problems which have led to many an enquirer finding that having the right of access to information did not necessarily mean that acquiring information was straightforward.[27] However, despite these problems there is no doubt as to the positive effect of the EIR, which has meant that far more environmental information is now publicly available than before their introduction.

2.2.2 The United Nations and the 'Earth Summit'

The United Nations is another international body that has turned its attention to environmental concerns and in doing so, has had a profound influence on how environmental information has been made available in Britain. The United Nations held its first conference on Human Environment, in Stockholm, in 1972, which led to the adoption of the first global action plan for the environment. In the years that followed, however, there was widespread concern that the goals agreed at this conference, were not being met and this led, in 1989, to the UN agreeing to a new conference, this time focusing on Environment and Development. (Sandbrook: 1992)

The resulting Conference was held in Rio de Janeiro in June 1992 and ended with the adoption of a global action plan for sustainable development called Agenda 21. During the drafting of this action plan, access to information was identified as a key theme as nearly all the chapters contained some discussion about the collection, use and dissemination of information. Eventually, this led to a systematic analysis of the information issues raised by Agenda 21 and resulted in the creation of a new chapter called *Information for Decision Making*.[28] (Strachan: 1996)

The conference agreed that sustainable development could only be successfully implemented by broad public participation in all aspects of the decision-making process. It also

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[26] In June 1994, the European Commission served a Formal Notice on the UK government setting out a number of key areas where they alleged that the Directive had not been adequately implemented. (Roderick: 1996)

[27] For a full discussion of the problems that have arisen following the implementation of the Environmental Information Regulations see Roderick: 1996, House of Lords Select Committee on the European Communities: 1996 and Friends of the Earth:1996.

[28] This can be found at chapter 40 and forms the very last chapter of the action plan.

acknowledged that this participation could only be achieved by improving access to information. As the action plan stated:

'individuals, groups and organizations should have access to information relevant to environment and development held by national authorities, including information on products and activities that have or are likely to have a significant impact on the environment, and information on environmental protection measures'. (United Nations Conference on Environment and Development: 1992: 191)

They understood that everyone, from the most senior national or international decision-makers to the individual, could only adopt the changes needed for sustainable development by having access to sound information on which they could base their decisions. (United Nations Conference on Environment and Development: 1992)

The main objectives of the chapter on *Information for Decision Making* were to highlight the need for more cost-effective and relevant data collection which could then be disseminated to a wide range of users. The action plan highlighted two main areas where effort was needed to accomplish these goals: the first they called 'bridging the data gap', the second improving the 'availability of information'.

Bridging the Data Gap

Whilst acknowledging that a wealth of environmental information was already available, the action plan highlighted the need for more data to be collected, particularly at different administrative levels, as they had found that there were wide varieties in the 'availability, quality, coherence, standardization and accessibility of data'. (United Nations Conference on Environment and Development: 1992: 237) This difference was particularly marked when comparing the environmental information available in the developing and developed world, and the action plan was concerned that these differences were preventing some countries from making informed decisions about the environment. The action plan set a number of objectives which they hoped would help resolve this problem. These included: the collection of more cost-effective and relevant data; to help strengthen local, provincial, national and international capacity to collect and use information in the decision-making process; to help ensure that sustainable development planning was based on timely, reliable and usable information and to make sure that this information was available in the best form to facilitate its use. (United Nations Conference on Environment and Development: 1992)

Availability of Information

When it came to the 'availability of information', the action plan highlighted the fact that much of the information already collected to aid sustainable development, was not being used to its full potential. Often this was the result of poor information management, but was also due to a lack of awareness about its value and availability. In the case of the developing world, these problems were further exacerbated by the exorbitant costs being charged for both information and the technology needed to manipulate it. The action plan hoped that by encouraging existing mechanisms for data processing and exchange, it could ensure effective and equitable availability of information, at all governmental levels, in all parts of the world. (United Nations Conference on Environment and Development: 1992)

Britain signed up to Agenda 21 following the 'Earth Summit' in 1992 and since then much of the responsibility for implementing these plans has come to rest with individual local authorities. British local authorities have each introduced their own Local Agenda 21 plans to try and encourage sustainable development at the local level. At the centre of many of these plans has been the aim to foster more widespread public participation in the environmental decision-making process and local authorities appear to have realised that this can only be achieved if they also provide access to comprehensive and accurate environmental information.[29] (Whittaker:1995)

Local authorities are already well placed to provide important environmental information to the public. Many environmental issues such as planning, waste management and pollution control are already dealt with at local authority level and through the development of the public register system, local authorities are already the first port of call for many people who wish to access this type of information. However, as shall be seen in the next chapter, the register system has not been without its problems. Lack of awareness, problems of access and the technical nature of the information has meant that they are often under-utilised and are a specific example of environmental information not being used to its full potential. So whilst the 'Earth Summit' played a important role in underlining the importance of having access to environmental information in Britain, there is still a large amount of work that needs to be carried out before its objectives are fully met.

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[29] For further information on how Britain's local authorities are implementing Local Agenda 21 see Agyeman & Evans: 1995, Bateman: 1995, Freeman, Littlewood & Whitney: 1996, Patterson and Theobald: 1995 or the special edition of Town and Country Planning, 63, 7/8, 1994.

2.2.3 The United Nations Economic Commission for Europe and the Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters

In addition to the 'Earth Summit', another UN body, the United Nation's Economic Commission for Europe (UN ECE), has also promoted access to environmental information in Britain, through the adoption of its Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters, in 1998.

The UN ECE was set up in 1974 as one of the UN's five regional commissions. It is made up of fifty five member states from North America, Western, Eastern and Central Europe and Central Asia, which together form one of the most industrially developed areas of the world. The UN ECE member states are amongst the largest consumers of natural resources and in turn are also responsible for most of the world's pollution.[30] For this reason, the UN ECE has, from its creation, focused its attention on environmental issues and has tried to foster greater co-operation, between member states, through the development of conventions and protocols. (United Nations Economic Commission for Europe: 2001a) To date, the UN ECE has adopted five Conventions that deal specifically with environmental issues. The most recent of these being the Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters which was adopted by the Fourth Ministerial Conference on 'Environment for Europe', held at Aarhus, Denmark, from 23 – 25th June 1998.[31] (United Nations Economic Commission for Europe: 2001b)

This Convention was the result of work that had been set in motion by a previous Ministerial Conference on 'Environment for Europe', held in Sofia, Bulgaria in 1995. During that conference, Ministers had agreed to support Principle 10 of the Rio Declaration,[32] which stated that citizens needed access to environmental information if they were to participate in environmental decision-making.[33] To help implement this declaration, the UN ECE region

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[30] Around two thirds.

[31] The other four were the 1979 Convention on Long-range Transboundary Air Pollution, the 1991 Convention on Environmental Impact Assessment in a Transboundary Context, the 1992 Convention on the Protection and Use of Transboundary Watercourses and International Lakes and the 1992 Convention on the Transboundary Effects of Industrial Accidents. (United Nations Economic Commission for Europe: 2001b)

[32] See section 2.2.2.

[33] Principle 10 states: 'Environmental issues are best handled with the participation of all concerned citizens, at the relevant level. At the national level, each individual shall have appropriate access to

introduced their Guidelines on Access to Environmental Information and Public Participation in Environmental Decision-making. These guidelines called on all member countries to ensure that they established mechanisms through which their citizens could access environmental information and thereby take part in the decision-making process. In addition to this, Ministers also agreed to the need for a regional Convention on Public Participation in Environmental Decision Making, which was finally adopted at the Aarhus conference in June 1998. (Brady: 1998)

The main objective of the Convention, as stated in Article 1, was to:

> 'contribute to the protection of the right of every person of present and future generations to live in an environment adequate to his or her health and well-being [by each member state guaranteeing] the rights of access to information, public participation in decision-making and access to justice in environmental matters...'.

The Convention, was therefore based on three core areas; that of access to information, access to the decision-making process and access to justice in environmental matters and like other international agreements in this area, set out to provide a minimum standard through which all ECE citizens could access them. (Brady: 1998) Of these three rights, however, it is the first one of access to environmental information that held the key to success in this area, as without it the other two could not be achieved.[34]

Coverage of the Convention

The Convention gave the right of access to environmental information to any natural or legal person and their associations, organisations or groups.[35] It also conferred a duty on 'public authorities' to collect and disseminate information. As was seen in Section 2.1.1, the Convention contained a very broad definition of the phrase 'environmental information' which included much of the information that the EU Directive (90/313/EEC) had been

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information concerning the environment that is held by public authorities, including information on hazardous materials and activities in their communities, and the opportunity to participate in decision-1making processes. States shall facilitate and encourage public awareness and participation by making information widely available. Effective access to judicial and administrative proceedings, including redress and remedy, shall be provided.' (United Nations Conference on Environment and Development: 1992: 11)

[34] A fact that had already been highlighted by the UN Rio declaration.

[35] Article 2.4

criticised for leaving out. In addition to this the Convention also included a wide definition of the term 'public authorities', covering government at national, regional and other levels, as well as natural and legal persons who provide public services or have public responsibilities for the environment. Once again, this Convention, by including any government body, automatically has a wider coverage than the EU Directive (90/313/EEC), which only included those government bodies with a responsibility for the environment. (Brady: 1998)

Requests for Environmental information

Article 4 of the Convention set out the terms under which the public could request information from public bodies. Firstly, requests for information, under the Convention, could be made without the requester having to state an interest in the information. (Brady: 1998) Public authorities had to make information available to the enquirer in the form that they requested, unless the information was already publicly available in another form.[36] For most applications, information had to be made available within one month of the original request being received. This could be extended for a further month if it was a particularly large or complex request and as long as the public authority informed the enquirer as to the reasons for the delay.[37] Finally, public authorities were allowed to make a charge for supplying information but this could not exceed a 'reasonable amount'.[38]

The Convention included a number of exemptions which could be used as grounds to refuse a request for information. Most of these exemptions tended to follow similar lines to those found in the EU Directive (90/313/EEC). The exemptions were separated into two parts, the first dealing with problems regarding the actual request for information, which could be refused on three grounds. Firstly, if the authority did not hold the information, secondly, if the request was unreasonable or too general and finally, if the request was for material still in the course of completion or which concerned the internal communications of the public authority.[39] The second set of exemptions dealt with problems that could occur if the information was actually disclosed and were designed to protect the holders or suppliers of the information. These exemptions included: the confidential proceedings of public authorities; information which could adversely affect international relations, national defence or the course of justice; personal data; information covered by intellectual property rights and

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[36] Article 4.1

[37] Article 4.2

[38] Article 4.8

[39] Article 4.3

third party information which had been voluntarily supplied.[40] Confidential commercial and industrial information was also exempted from being disclosed.[41] This was described by Brady as being the most contentious exemption, as there was considerable divergence as to how it should be worded. A number of delegations wanted a very narrow definition of commercial and industrial confidentiality with a strong public interest test, but after much debate it was finally agreed that this exemption should be qualified by including the term 'where such confidentiality is protected by law in order to protect a legitimate economic interest'[42] and to include a further exemption, within this exemption, whereby emissions data relevant for environmental protection was not included. All the exemptions, found in this second set, were also subject to a further obligation, which meant that they should be interpreted as narrowly as possible with the public interest argument always being taken into account. (Brady: 1998)

Collection and Dissemination of Environmental Information

Finally, the Convention dealt with the collection and dissemination of environmental information by public authorities.[43] Unlike the EU Directive on Freedom of Access to Information on the Environment which only required that 'information is effectively made available' by member states, this Convention tried to put a number of practical arrangements into place that would facilitate access to environmental information. For example, the Convention required that firstly, public authorities have access to up-to-date information about existing and proposed activities which significantly affect the environment, and secondly that they are able to rapidly disseminate this information to the public in the event of an imminent threat to human health or the environment.[44] To do this, parties to the Convention had to ensure that a national framework was established through which environmental information could be made 'effectively accessible' to members of the public.

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[40] Article 4.4

[41] This states 'A request for environmental information may be refused if the disclosure would adversely affect: the confidentiality of commercial and industrial information, where such confidentiality is protected by law in order to protect a legitimate economic interest. Within this framework, information on emissions which is relevant to the protection of the environment shall be disclosed.' Article 4.4(d)

[42] Article 4.4(d)

[43] Article 5

[44] Article 5.1

The Convention then set out a number of ways in which information could be made accessible to the public. The first of these was through the provision of meta-data services. Article 5.2 stated that sufficient information must be made available about the type and scope of environmental information that was held by public authorities and the basic terms and conditions under which this information is made available. Secondly, the Convention required that a number of practical arrangements be put in place to make environmental information available to the public. These included the setting up of easily accessible lists, registers and files which could be accessed free of charge. In addition to this, Article 5.3 also required that environmental information be made available through electronic databases that were easily accessible to the public. Thirdly, the Convention required that parties actively disseminate a wide range of environmental information such as a national report on the state of the environment, legislation and policy documents, international treaties, conventions and agreements, as well as explanatory material and analysis that could be used by the public to help them understand specific environmental issues.[45] Finally, the Convention required that a coherent, national system of pollution inventories or registers be established which are made available in a structured, computerised and publicly accessible database. This database should contain information on the use, release and transfer of a specified range of substances and products from a range of activities.[46]

As has been previously mentioned, this Convention was only adopted on 30th October 2001 and so it is still unclear what its impact will be on the UK. However, it goes much further than previous legislation enacted in this country and there will have to be substantial changes if its requirements are to be met.

2.3 Access to Environmental Information in the United Kingdom

Access to environmental information in Britain has therefore been profoundly affected by the work of a number of international bodies who have become increasingly aware that people need access to environmental information if they are to fully participate in the decision-making process. However, environmental information policy can be traced back long before these three agreements were adopted and so this study will now turn to look specifically at the background of access to environmental information in the UK.

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[45] Article 5.5

[46] Article 5.9

As with many other areas of information, access to environmental information in the UK was for many years shrouded in secrecy. Environmental legislation, often working in conjunction with the Official Secrets Act, meant that all too often the onus was placed on keeping environmental information away from the public. Both government and industry employed a wide range of reasons to keep environmental information out of the public domain and it was only in the 1970's, that a marked shift in attitude could be seen and legislation was finally passed to make environmental information more readily available. However, even then it would take another ten years before the practical implementation of this legislation was to have any real effect.[47]

2.3.1 The development of an environmental secrecy policy

The beginnings of environmental secrecy can be traced back to the middle of the Nineteenth Century, which was a period of rapid industrialisation in Great Britain. In 1863, parliament passed the Alkali Act and in so doing created the world's first pollution body, the Alkali Inspectorate, which was charged with regulating atmospheric pollution from the growing alkali industry. A year later, in 1864, the Alkali Inspectorate commenced its enforcement procedures and in so doing also created 'the worlds first environmental secrecy policy'.[48] (Frankel: 1984: 28)

As British industry continued to grow, so did the country's pollution problems and the sphere of influence of the Alkali Inspectorate, as the main enforcement agency, was to become even more embracing. This meant that for the next 100 years, its policy of keeping information out of the public domain was to continue. For the most part this secrecy had been self-imposed, but in 1974 this was to change with the introduction of the new Health and Safety at Work Act which gave this policy of secrecy legal backing. The Alkali Inspectorate, now renamed the Industrial Air Pollution Inspectorate, was prevented from publishing any information which gave details of the monitoring it carried out as part of its statutory duties. (Frankel: 1984) Many other environmental statutes also went on to enshrine this policy by containing sections that categorically forbade the release of environmental discharge data to the public.

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[47] As the main area of concern for this case study is to look at access to information on pollution control. It is on this particular area of environmental information that the next section shall focus.

[48] This policy of secrecy arose for two reasons; firstly, because the alkali industry wanted to keep information out of the public domain, thereby ensuring that the public were unaware of what pollutants were being emitted from alkali factories and secondly, because it was argued by the enforcement

One such example can be seen in the area of water pollution where the Rivers (Prevention of Pollution) Act 1961, prevented the public from accessing any information, held by the enforcing authority, that related to the application by a company for a consent to discharge, the consent itself, or the monitoring data that was then collected. This information would only be released if there was a statutory requirement to do so or if it was authorised by the company involved. If information was released, without either of these criteria being fulfilled, then the official responsible could be liable for up to three months imprisonment.[49] (Ball & Bell: 1995)

2.3.2 Justifying environmental secrecy

Historically then, secrecy formed an integral part of the way in which pollution control bodies operated and appeared to stem largely from industry fears about the release of environmental information into the public domain. A number of arguments were put forward by industry for keeping environmental information secret. These included that the information would be too difficult for lay persons to understand, that the information would be used by environmental extremists and could lead to unnecessary court actions and finally, that the information would breach commercial confidentiality and lead to the exposure of trade secrets. (Frankel: 1984)

The Technical Nature of Environmental Information

One of the main arguments put forward by industry, to prevent the disclosure of environmental information, was that the public would be unable to interpret, what was seen as, highly technical information. The Confederation of British Industry (CBI) certainly espoused this view, as this passage from their 1979 statement on the release of environmental and technical information showed:

> 'Greater release of data enhances the risk of their misinterpretation and the likelihood of unwarranted alarm or ill-founded 'remedial' actions ... Data are often highly detailed and technical, requiring interpretations by trained toxicologists; hence the capacity for correct interpretation is limited. This restricts further the amount and

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agencies that the release of pollution information would harm the trust that had been established between themselves and industry. (Frankel: 1978)

[49] Other Acts which contain secrecy clauses include the Public Health Act 1936, the Clean Air Act 1956 and the Control of Pollution Act 1974

type of information which can usefully be released without problems of misinterpretation.' (Royal Commission on Environmental Pollution: 1984: 24)

The Royal Commission on Environmental Pollution and other commentators, however, strongly disagreed with this interpretation. Frankel, pointed out that whilst some environmental data, such as that on chemical hazards, may be difficult to interpret without specialist advice, there were no more grounds for withholding this kind of information than there were for any other kind of technical information, much of which was already in the public domain. He then went on to argue that the refusal by companies to disclose information on the grounds of its technical complexity was often simply an excuse for keeping information secret when really there was very little technical content within the information in the first place.[50] (Frankel: 1984)

Much of this argument by industry centred on the fact that individual members of the public would be unable to understand the technical information that would be made available. However, from the 1960's onwards, members of the public had increasingly left it to environmental non-governmental organisations to represent them and monitor such problems, as pollution. In turn this had led to environmental pressure groups developing great expertise in these areas and as the Royal Commission acknowledged, in 1984, they had seen:

> 'a growing professionalism in many voluntary organisations in the environmental field and with it an ability to evaluate and present scientific reports which compare favourably with those of officially sponsored researchers. In our view, to deny access to data on the grounds that 'the public' is not competent to make 'correct use of them is neither a tenable nor an acceptable position' (Royal Commission on Environmental Pollution: 1984: 27)

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[50] In the *Secrets File*, Maurice Frankel cites an example of this. A chemical company had been withholding health and safety information from the public and its workers about one of its products. They had claimed that 'the information is of a highly specialised nature, only individuals with the relevant qualifications and wide experience of the materials would fully comprehend the importance of the data'. However, when eventually the data sheets for the product were eventually released they contained nothing more than a brief statement 'Does not contain materials generally regarded as toxic but accidental spillage on to skin or eyes should be immediately washed thoroughly'. (Frankel: 1984: 34 –35)

'Green' Extremists

Another argument put forward by industry for keeping environmental data out of the public domain, was that it would be used by so-called 'green extremists' to cause a nuisance and interrupt the workings of industry through protest and court action. Frankel gives an example of such an opinion in this comment given by an Environmental Health Officer at the National Society for Clean Air Conference, in 1977.

'Action Groups frequently composed of university research workers, lecturers, people who have failed to gain election through the ballot box and including many cranks, persisted in twisting the truth concerning emissions to atmosphere and their predictions of doom were made to the delight of an ever waiting national press.' (Frankel: 1984: 35)

One of the problems here of course, lies in the definition of 'environmental extremists'. The groups of people cited above were obviously viewed with a great deal of suspicion by the enforcing officer and probably by industry too. On the other hand, they could also be seen by environmental pressure groups as just the kind of people who were needed to give an independent assessment of environmental data and who had the necessary skills to do it. (Frankel: 1984)

The advocacy of views opposed to widening access to environmental information were not however, merely historical. As recently as 1990, during the debate on the Environmental Protection Bill, in the House of Commons, there were arguments put forward by some MP's about the hazards of allowing increased public access to environmental information. Mr Andrew Hunt, MP for Basingstoke, contended that any increased rights for the public would 'allow the 'green nutters' to get on parade and have a field day of litigation against industry on entirely inconsequential grounds'. (Ball & Bell: 1995: 145) Other MP's also warned of endless prosecutions which would be used by reputable environmental groups as a media tool rather than to promote environmental improvement.[51]

The CBI in its evidence to the Royal Commission on Environmental Pollution was also worried that the greater availability of environmental information would lead to what it called 'vexatious litigation'. In response to this, however, the Royal Commission stated that it was sure that the courts would be well aware of this kind of complaint and would not fail in their

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[51] Comments by Mr Tim Devlin, MP, representing Stockton South, in parliament on 30th April 1990.

duty to prevent injunctions being awarded when complaints were 'plainly without merit'. (Royal Commission on Environmental Pollution: 1984: 27)

Commercial Confidentiality

Finally, perhaps industry's most enduring argument against the release of environmental information was that it could affect the viability of industry itself. Concerns have often been raised, by industry, that by making environmental information available and particularly discharge data, competitors would be able to glean valuable 'trade secrets'. It has been argued that by releasing this type of information and making it available to their competitors, companies would be unable to reclaim the costs that they incurred when developing new products. The CBI confirmed this view in its evidence to the Royal Commission on Environmental Pollution claiming that in certain circumstances it would be possible 'for commercially-sensitive information about a product or production process ... to be deduced from knowledge of an effluent's content'. (Royal Commission on Environmental Pollution: 1984: 26)

On the whole, however, the fears of industry regarding this area appear to have been overemphasised. The occurrence of companies finding out commercially valuable information about their competitors, in publicly available registers, is practically non-existent, as the Royal Commission on Environmental Pollution pointed out. Apart from an infamous case, in the United States, where the Environmental Protection Agency accidentally made commercially sensitive information concerning a Monsanto product available, the CBI could only identify one other case where this had happened. (Royal Commission on Environmental Pollution: 1984) Other commentators also pointed out that if a company was intent on finding out the trade secrets of a rival competitor, then there were far more advanced methods of industrial espionage available, than checking a public register for information.

2.4   Moves Towards Greater Openness

Environmental secrecy, can therefore be seen to have been somewhat endemic in the United Kingdom, however, in the last thirty years, a number of moves have been made towards greater openness. These began with individual measures being introduced into a number of pieces of environmental legislation and culminated in the adoption of the Environmental Information Regulations, which gave British citizens a right of access to environmental

information from public bodies.[52]   However, before turning to look at these moves towards greater openness, the next section will first focus on the Royal Commission on Environmental Pollution which has been particularly influential in encouraging access to environmental information in the UK.

2.4.1   The Royal Commission on Environmental Pollution[53]

One of the greatest proponents of wider access to environmental information, within the British establishment, has been the Royal Commission on Environmental Pollution (from now on referred to as the Royal Commission). The Royal Commission was created on 20th February 1970 with a remit 'to advise on matters, both national and international, concerning the pollution of the environment; on the adequacy of research in this field; and the future possibilities of danger to the environment'. (Royal Commission on Environmental Pollution: 1984: 2) The Royal Commission has produced a number of wide-ranging, authoritative reports[54] which have, in many ways, been highly influential on government environmental policy. In each report, the Royal Commission has provided a number of recommendations that can be used by the government to address the problem identified. However, the government is under no obligation to accept these recommendations and in a number of areas, including that of widening access to environmental information, the government has often been slow to adopt the Royal Commission's recommendations or has, in some cases, ignored them completely.

The Royal Commission, from its inception, has always been a strong supporter of increased access to environmental information and on numerous occasions has denied the need for secrecy based on the reasons put forward by industry. Their second report entitled *Three Issues in Industrial Pollution*, published in 1972, investigated some of the secrecy clauses contained in environmental legislation and concluded even then, that 'the legislation which protects secrecy over industrial effluents and wastes no longer safeguards genuine trade secrets'. (Royal Commission on Environmental Pollution: 1972: 2) They opposed industry's reliance on secrecy and consistently argued that the public had a right to know about environmental pollution and the risks that they faced because of it. They also maintained that

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[52] This was discussed in Section 2.2.1.

[53] Further information on the Royal Commission on Environmental Pollution is available from their website, which can be found at www.rcep.org.uk

[54] The Royal Commission has to-date produced twenty two reports on all areas of environmental pollution.

the public would only have confidence in the enforcement system if they had access to the same information as the enforcing bodies. (Ball & Bell: 1995) All these arguments were to underpin what was to prove to be a very long campaign by the Royal Commission for greater openness in this area.

It was however, the publication of the Royal Commission's tenth report entitled *Tackling Pollution – Experience and Prospects* in 1984, that was to bring the problem of industrial secrecy to the fore. In this report, the Royal Commission reviewed the situation relating to environmental secrecy in light of their past recommendations and went on to conclude that whilst there had been some progress in public disclosure on environmental matters, they were still 'not satisfied that the tasks set by the second report have been tackled systematically enough or with sufficient urgency'. (Royal Commission on Environmental Pollution: 1984: 36) The lukewarm response that they had received, from both government and industry, to their previous recommendations led them to firmly reassert their commitment to greater openness in this report. Once again they recommended that:

'a guiding principle behind all legislative and administrative controls relating to environmental pollution should be a presumption in favour of unrestricted access for the public to information which the pollution control authorities obtain or receive by virtue of their statutory powers, with provision for secrecy only in those circumstances where a genuine case for it can be substantiated.' (Royal Commission on Environmental Pollution: 1984: 38)

The government was to reply to the Royal Commission's tenth report, in 1986, through the Department of the Environment's Pollution Paper *Public Access to Environmental Information*.[55] This paper was keen to support the Royal Commission's principle of greater openness and even went on to specify a number of areas where legislation or at least guidance were needed to encourage greater public disclosure.[56] However, the main thrust of this document was to highlight moves that the government had already made towards greater openness in the environmental area rather than to adopt the Royal Commission's

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[55] Pollution Paper No. 23

[56] The paper concluded that there was a need for new primary legislation to bring in greater disclosure in relation to radioactive wastes and waste disposal. That MAFF was currently consulting with government departments to provide greater access to information on pesticides. It also argued for the need to bring in new administrative guidance for all pollution control authorities that would help them

recommendations. This Pollution Paper therefore contained no radical changes but tried instead to focus on legislation that had already brought about greater degrees of openness, such as the Control of Pollution Act 1974. This Act contained a number of information provisions which covered all areas of environmental protection and was to become the blueprint for how environmental information was made available in Britain.

2.4.2   The Control of Pollution Act 1974

Until the 1970's, much of the environmental legislation on Britain's statute books, either prevented the release of information to the public or was at the very least interpreted in this way by the enforcement authorities and industry. The Control of Pollution Act 1974 (COPA), therefore, marked a substantial turn around in environmental legislation by containing direct measures to increase the flow of information into the public domain. The Act covered information relating to noise and waste disposal on land, but its most important disclosure provisions were concerned with air and, particularly, water pollution. In relation to both these sources of pollution, the Act either allowed or required the publication of discharge information. Trade secrets could still be protected under the Act,[57] but on the whole information which had previously been kept out of the public domain was now to be disclosed. (Frankel: 1982) There was however, a great deal of opposition from industry bodies, to these disclosure provisions and this would lead to a delay of over ten years for them to be implemented.

The Control of Pollution Act not only marked a watershed in terms of what information was made available but also, in how information was made available, as for the first time, the concept of using public registers to make environmental information accessible to the public was introduced. Under Section 41 of the Act, an obligation was placed on all water authorities to maintain a public register which had to contain a range of information in relation to discharges into water. This included the application by a company for a discharge consent, a copy of the consent itself and regular sample and monitoring data. The Act required that the registers be available for inspection by the public at reasonable times and free of charge. (Department of the Environment: 1986)

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make the most of powers that they already had to disclose information (Department of the Environment: 1986: vi – vii)

[57] Companies now, however, would have to go to the Secretary of State to have these trade secrets protected rather than simply coming to an agreement with the enforcing body.

The register system, as outlined in the Control of Pollution Act, was finally introduced in July 1985 and was quickly seen by government as a practical model for making environmental information available to the public. The Department of the Environment's Pollution Paper on *Public Access to Environmental Information,* identified the COPA model as the best way of making environmental information available as it used very few resources and minimised the burden placed on industry. (Department of the Environment: 1986) However, other research which looked at the workings of the COPA registers was not quite as enthusiastic in its conclusions, as it was soon established that they were very rarely used by the public.[58] (Burton: 1989b) The government, however, had decided that public registers were the best way in which 'prescribed information could be made accessible' (Department of the Environment: 1986: 7) and so others were soon established.[59] This meant that registers quickly became the designated way of providing access to information on most areas of environmental control and the model established then, continues to be used today.

This chapter has examined the background to environmental information by establishing what environmental information is and why the public should have access to it. It then turned to look at access to environmental information in the UK, by examining both the international bodies and domestic legislation that have had an effect on this area. This review has highlighted the importance of a number of pieces of legislation in giving people the right of access to environmental information, but has also set out some of the problems that have arisen in relation to them. In particular it has identified the difference between having a right of access to information and actually being able to access it. This could be seen, for example, in relation to the European Directive which while giving people the right of access, failed to prescribe how this information should be made available. Other environmental legislation tried to make environmental information more easily available,[60] however, even then, commentators have highlighted a difference between what the policy hoped to achieve and what occurred in practice. In light of this the following chapter will now look at the policy that set up the registers for Integrated Pollution Control, which form the case study for this research, and will then go on to examine the development of the registers in practice.

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[58] This will be discussed further in the Chapter 3.

[59] For the water industry they were created under the Water Resources Act 1991, the Water Industry Act 1991 and the Water Supply (Water Quality) Regulations 1989. For waste disposal, under the Environmental Protection Act 1990 and the Waste Management Licensing Regulations 1994 and for Integrated Pollution Control under the Environmental Protection Act 1990.

[60] Such as the Control of Pollution Act, which set up the public registers for water pollution,

Chapter 3. The Environmental Protection Act and the Register for Integrated Pollution Control

3.1 Introduction

After examining the background of access to environmental information in the UK, this chapter now turns to look at the case study chosen for this research. This case study examines the Environmental Protection Act 1990 and specifically its information provisions, which led to the creation of the public register for Integrated Pollution Control (IPC). The first section of this chapter examines the history of the Environmental Protection Act 1990, by looking at the background to its introduction and then its passage through Parliament. The second section examines Part I of the Act, which introduced a new system of pollution control into the UK. It will look specifically at the provisions for Integrated Pollution Control which were designed to reduce emissions from the country's most polluting industrial processes. The third section then goes on to examine the information provisions found in Part I of the Act, which led to the setting up of the registers for Integrated Pollution Control and examines their implementation. The final section then investigates the day-to-day operation of the registers, examining a number of physical, financial and particularly informational barriers that have been seen as hindering public use of the registers.

3.1.1 The Environmental Protection Act 1990[1]

The Environmental Protection Act 1990 has been described as a particularly 'ambitious piece of legislation' as it introduced a number of new measures for environmental protection in the UK. (Morris: 1991: 118) One of the Act's primary objectives was to create a new integrative approach to pollution control, designed to deal with environmental pollution through one unified system. This marked a substantial change from previous environmental legislation, which had tackled releases to different environmental media separately, and had led to a system where decisions about pollution were based largely on cost rather than trying to identify the least environmentally damaging method of disposal. The introduction of this new integrative approach was, therefore, seen as an important step forward in the way that industrial pollution was dealt with in the UK. The significance of these changes was highlighted by the then Secretary of State for the Environment, Mr Chris Patten, who was to comment, in Parliament, that the Environmental Protection Bill would 'surely provide us with

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[1] A copy of Part I of the Environmental Protection Act 1990, can be found in Appendix 3.

the basic framework for much of our pollution control in Britain [for] well into the next century'. (Hansard: 1990a) However, not all the political parties were quite so enthusiastic about the Bill's provisions. What was seen as an ambitious piece of legislation, tackling a diverse range of environmental issues on one side of the political fence, was heavily criticised as a hotchpotch of ideas on the other.[2] (Tromans: 1991) A difference of opinion that would result in a number of heated parliamentary debates and amendments to the Bill, before it finally became law on 1st November 1990.

3.1.2   Background to the Environmental Protection Act 1990

The Environmental Protection Act 1990 has been seen as one of the most important pieces of environmental legislation to be passed in the UK in the latter half of the Twentieth Century, as it marked a milestone in many areas of environmental protection. In addition to this, its significance also arose from the variety of environmental issues that it tackled. This diversity meant that the origins of the Act are quite difficult to trace as they are the result of work by a number of different bodies. However, despite these difficulties, Tromans has examined the origins of some of the Act's provisions including those for Integrated Pollution Control, Local Authority Air Pollution Control and access to environmental information. He found that many of the Act's provisions could be traced back to the earlier work of parliamentary committees or the Royal Commission on Environmental Pollution, and identified almost forty government and Royal Commission documents that had previously examined the issues which were later included in the Environmental Protection Act.[3] This meant that many of these issues had been on the policy agenda for some time, and had already undergone periods of detailed analysis and consultation before they were incorporated into the Environmental Protection Bill.[4] (Tromans: 1991)

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[2] Bryan Gould, the Labour Party's then environment spokesman described the Bill as 'little more than a rag-bag of measures drawn from disparate sources, many of which have been dusted down and brought to life again simply to be cobbled together to give it a lick of green paint and the impression of action and cohesion'. (Hansard: 1990b)

[3] For example, in the case of Access to Environmental Information he traced the origins of this back to four documents including: the Royal Commission on Environmental Pollution's 1972 and 1984 reports; the Department of the Environment's 1986 Pollution Paper on *Public Access to Environmental Information* and the House of Lords Select Committee on the European Communities 1989 report on *Freedom of Access to Information on the Environment.*

[4] This was seen by Tromans as being particularly important, as it would later result in a relatively smooth passage for much of the Environmental Protection Bill, through the Houses of Parliament. Many of the main provisions of the Act were passed fairly quickly, the only provisions that were to

There were two main reasons for the introduction of the Environmental Protection Act by the UK government. The first was the need to transpose a number of pieces of European legislation into UK law and the second was to introduce the concept of integrated pollution control into environmental protection. (Waite: 1991) Both of these issues were dealt with in Part I of the Act. European law played a particularly important role in shaping the Environmental Protection Act 1990, as it was used to transpose the provisions of a number of European Directives into domestic law. One such example of this, was the introduction into Part I of the Act, of the term 'best available techniques not entailing excessive cost' (BATNEEC) to determine what techniques companies should use to reduce pollution. This came from a similar definition of BATNEEC, this time meaning 'best available technology not entailing excessive cost', that had been set out in the European Air Framework Directive (84/360/EEC).[5] (Tromans: 1991) In addition to this, the European Commission's draft proposals for a European Directive on Freedom of Access to Information on the Environment (9/313/EEC), were also seen as having been an important influence, as these were responsible for the inclusion of a number of information provisions into the Act with the aim of increasing public access to environmental information. (Tromans: 1991)

The second reason for the introduction of the Environmental Protection Act 1990, was so that the government could introduce the concept of Integrated Pollution Control into the UK environmental regulatory system. (Burnett-Hall: 1995) The introduction of this concept was a major shift in the way that environmental pollution was controlled, as until this Act, it had traditionally been dealt with in a piecemeal way, so that problems were tackled as they arose, rather than in a systematic fashion. (Bell: 1997) This meant that control of pollution was often fragmented, with different regulatory systems and enforcement bodies being established to deal with pollution to the three environmental media of air, water and land. (Sunkin, Ong and Wight: 1998) This fragmented approach had resulted in a number of problems. Firstly, it meant that little attempt had been made to view the environment as a whole. Each

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really cause political controversy were the re-organisation of the Nature Conservancy Council and the introduction of an amendment that called for a scheme on compulsory dog registration. An amendment that was later defeated by the Government. (Tromans: 1991)

[5] Other Directives whose provisions are incorporated into the Environmental Protection Act include Directive 88/609/EEC on the Limitation of Emissions of Certain Pollutants into the Air from Large Combustion Plants, Directive 76/464/EEC on Pollution Caused by Dangerous Substances Discharged into the Aquatic Environment of the Community and Directive 86/280/EEC on Limit Values and Quality Objectives for Discharges of Certain Dangerous Substances included in List I of the Annex of Directive 76/464/EEC.

environmental media was seen as separate from the others, so that little notice was taken of the effects that the regulations for one media had on any of the others. This created a situation of 'regime shopping', whereby companies would shop around for the cheapest, rather than the best, way of disposing their waste.[6] (Sunkin, Ong and Wight: 1998) Secondly, there was a lack of consistency in the way in which environmental protection legislation was enforced by different pollution control bodies. This meant that the regulations for one media could be enforced far more rigorously than in another, again having an affect on the way in which industry disposed of its waste. Thirdly, problems had arisen where the responsibilities of different enforcement bodies overlapped, leading to an uncoordinated approach and ineffective enforcement. Finally, this fragmentation led to a lack of public accountability, as it was difficult for people to identify which enforcement agency was responsible for a particular pollution problem. (Bell: 1997)

These problems had all been raised by the Royal Commission on Environmental Pollution, in its fifth report in 1976. The Royal Commission had stated that the treatment of pollution to air, water and land as three separate issues, had led to a haphazard system of waste disposal, which took no account of where a pollutant would be best disposed. They therefore, recommended that a single body should be established to enforce the regulatory system which would ensure that pollution was disposed of using the 'Best Practicable Environmental Option' (BPEO). This method would be used to find the waste disposal option that provided the most benefit or the least damage to the environment at an acceptable cost. (Bell: 1997)

Although it would take some time, the government would eventually pass legislation that accomplished both of the Royal Commission's objectives. In 1987 the first steps were taken towards a new integrated enforcement body, with the creation of Her Majesty's Inspectorate of Pollution (HMIP), which had responsibility for air pollution, waste disposal, radioactive substances and some limited controls over water pollution. Discharges to water were still largely supervised by the National Rivers Authority (NRA) but closer co-operation between the two bodies was introduced to aid enforcement where their responsibilities overlapped. (Burnett-Hall: 1995) In 1995, this was to change again when these two bodies were finally merged to form the Environment Agency (EA) and the Royal Commission's objective of having one unified enforcement agency was finally realised. Secondly, the adoption of the Environmental Protection Act in 1990, introduced a new system of Integrated Pollution

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[6] For example, if the controls for air pollution got too tight then companies would move the disposal of their waste to a less strict regime, such as to water.

Control, which regulated the pollution from all industrial processes to all environmental media through one unified system.

3.2 The Environmental Protection Act 1990, Part I: the provisions for Integrated Pollution Control

The Environmental Protection Act 1990 was a substantial piece of legislation, that tackled a wide range of issues. The Act itself was made up of eight different parts:

- Part I dealt with Integrated Pollution Control and air pollution control by local authorities;
- Part II with waste on land;
- Part III with statutory nuisances and clean air;
- Part IV with litter;
- Part V with radioactive substances;
- Part VI with genetically modified organisms;
- Part VII with nature conservation; and
- Part VIII with miscellaneous items.

This study focuses on the provisions for Integrated Pollution Control, which were found in Part I of the Act.

The aim of Part I of the Act, as set out in the preamble, was to 'to make provision for the improved control of pollution arising from certain industrial and other processes'. The Act set out to do this by establishing two new systems of pollution control: Integrated Pollution Control (IPC), controlled by the Environment Agency[7] and Local Authority Air Pollution Control (LAAPC) controlled by individual local authorities. These two systems were designed to run in tandem with one another so that many of their provisions were identical. There were however, subtle differences between them; IPC, for example, regulated the country's most polluting processes and was designed to minimise the effects of their emissions to all environmental media, whilst LAAPC controlled less polluting processes and their emissions solely into the atmosphere. (Bell: 1997) This study focuses on the provisions

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[7] The system of IPC was originally controlled by Her Majesty's Inspectorate of Pollution until its merger with the National Rivers Authority which led to the formation of the Environment Agency in 1995.

for IPC which will now be examined, to provide the background to the Act's information provisions, which form the case study for this research.

3.2.1. Prescribed processes and substances

The provisions for Integrated Pollution Control applied to any industrial process, in England and Wales, that was determined as falling within the terms of the Environmental Protection Act, by the Secretary of State.[8] For the purpose of this Act, a process was described as being 'any activities carried out in Great Britain, whether on a premises or by means of mobile plant, which are capable of causing pollution to the environment.'[9] A full list of the processes covered by the Act were set out in The Environmental Protection (Prescribed Processes and Substances) Regulations 1991 (SI 1991/472).[10] (Bell: 1997) This list of prescribed processes, was split into six chapters, which outlined the six main industrial sectors covered by the Act. These included the fuel and power sector, the metal sector, the mineral industries, the chemical industries and the waste disposal and recycling sector, as well as other miscellaneous industries. The processes listed for each industry sector were then split into more detailed Part A and Part B lists. The Part A list containing details of the most polluting industries, such as petroleum processing, which were subject to IPC, whilst the less polluting industries, that were subject to LAAPC, such as cement processes, were listed in Part B. (Sunkin, Ong and Wight: 1998) These industrial processes came within the terms of the Act because their operation resulted in the release of certain 'prescribed substances' into the environment.[11] As a result of this, changes in the quantity or type of substance released by an industrial process could result in it moving between the different control regimes. Thus the removal of a prescribed substance from an industrial process could result in it being

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[8] Section 2(1)

[9] Section 1(3)

[10] The EPA 1990 required that a series of regulations be passed in which the full details of many parts of the legislation were set out. These were introduced to bring an element of flexibility into the Act, so that it could cope with any advances in pollution abatement methods and that these changes could be quickly brought within the terms of the Act. Other regulations included the Environmental Protection (Applications, Appeals and Registers) Regulations 1991 (SI 1991/507) and the Environmental Protection (Authorisation of Processes) (Determination Periods) Order 1991 (SI 1991/513). (Bell: 1997)

[11] A list of these 'prescribed substances' was also set out in the Regulations.

downgraded from the IPC to LAAPC scheme or being excluded from the terms of Act completely.[12]

3.2.2. Application for an authorisation

Section 6(1) of the Environmental Protection Act 1990, prohibited the carrying out of a prescribed process without an authorisation having first been issued by the appropriate enforcing authority.[13] The issuing of an authorisation for each process was, therefore, central to the system of Integrated Pollution Control. An authorisation was used to set out the full details of each industrial process and included information on what releases could be made, where they could be made and what methods should be employed to reduce them. The issuing of an authorisation was, therefore, the main way in which each industrial process was regulated under the Act and it was these provisions which formed the real teeth of IPC. (Waite: 1991)

To obtain an authorisation, the owner of an industrial process had to apply, in writing, to the appropriate enforcement agency, which in England and Wales would be the Environment Agency.[14] The actual procedure for obtaining an authorisation was set out in the Environmental Protection (Application, Appeals and Registers) Regulations 1991 (SI 1991/507) which, in Regulation 2, listed the information that needed to be supplied by a company as part of their application for an authorisation. This included:

1. The name, address and telephone number of the applicant;

2. A map of the area where the process was located, with indications of the exact location of the process, the address of the process and the name of the relevant local authority;

3. A full description of the process, including information on the techniques that would be employed to reduce pollution;

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[12] A number of widespread changes to the substances used in some industrial processes led to the government introducing the revised Environmental Protection (Prescribed Processes and Substances) (Amendment) Regulations (SI 1994/1271) in 1994, in which a number of processes were demoted from IPC to LAAPC control. (Sunkin, Ong and Wight: 1998)

[13] The carrying out of a prescribed process without an authorisation was made a criminal offence in Section 23(1)(a).

[14] Although originally it would have been its predecessor, Her Majesty's Inspectorate of Pollution.

4. A list of the prescribed substances that would be used or result from the process, which could lead to environmental damage, including information about amount released and the way in which it would be released;

5. A description of the techniques that would be employed either to prevent the release of prescribed substances, to reduce the release of such substances to the bare minimum or to render any released substance harmless;

6. A detailed assessment of the environmental impact of any proposed release into any environmental medium;

7. Information relating to the monitoring of the released substances. (Bell: 1997)

The Environment Agency provided an official application form for companies to use when applying for an IPC authorisation. However, this was a relatively short document that dealt mainly with the administrative requirements of the application, such as the relevant names and addresses and the payment of fees. This meant that the bulk of information, that was required for an application, was usually submitted by the company separately. There was no mention in the Act as to the amount of information that a company should submit nor as to how this, often very technical information, should be presented. This led, in the beginning, to the submission of a number of very poor applications for IPC authorisations and in response to this, Her Majesty's Inspectorate of Pollution was to develop a number of guidelines which could be used to aid companies both with the structure of their application and the information that should be included, so that the time taken for processing applications could be cut to a minimum. If a company's application still failed to meet the required standards, then the enforcement agency had the option of issuing a written notice asking for certain information to be made available, within a specified time period. (Bell: 1997)

3.2.3. Consultation

Once a company had submitted its application to the enforcing authority, and this had been accepted, they then had to advertise their application in at least one newspaper that was circulated in the area where the process would be carried out.[15] This advertisement had to contain:

1. The details of the applicant;

2. A description of the process;

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[15] Regulation 5 of the Environmental Protection (Applications, Appeals and Registers) Regulations 1991 (SI 1991/507).

3.   Information as to where the company's application could be consulted (i.e. the register where the application would be held); and

4.   The details of where the public could make representations about the application (i.e. the name and address of the appropriate enforcing authority) and the time scale in which these representations had to be received, which was usually twenty eight days from the publication of the advert. (Bell: 1997)

This advertisement had to be placed in the press no earlier than fourteen and no later than forty two days after the company's application had been submitted to the enforcement agency, and a copy of the advert forwarded to the enforcement authority within ten days of its publication, so that it could be placed on the public register. (Waite: 1992)

In addition to informing the general public about the company's application, other consultees were also given the right, under the Act, to make representations to the enforcing authority about the application.[16] These 'statutory consultees' reflected the wide range of impacts that a process could have both on the environment and the workplace, and included:

1.   The Health and Safety Executive, to examine the health and safety aspects of the process;

2.   The water services companies or appropriate sewerage company to look at any discharges into water;

3.   The Minister for Agriculture, Fisheries and Food;

4.   The relevant Nature Conservancy body, such as English Nature or the Countryside Council for Wales, to examine whether the process might affect a site of special scientific interest (SSSI);

5.   The appropriate harbour authority, if a release was to take place into a harbour; and

6.   The appropriate local authority, to examine the effects that the process may have on air quality management plans.

These statutory consultees had to be notified by the enforcing authority, of a new application for an IPC authorisation within fourteen days of its receipt. Statutory consultees were also given twenty eight days to respond to the application and their comments, unlike those of the general public, had to be taken into account by the enforcement agency, when a final decision was made about the application. (Bell: 1997)

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[16] Regulation 4

3.2.4   Determining the application

Once the twenty eight day time limit for representations had passed and replies had been received from the appropriate statutory consultees, the enforcement agency was then able to determine the application for an authorisation. For most straightforward applications, the Environmental Protection (Authorisation of Processes) (Determination Periods) Order 1991 (SI 1991/513) set a time limit of four months from the receipt of the application for the enforcement agency to make its decision.[17]   Under section 6(3) of the EPA 1990, the enforcement agency was entitled to grant an authorisation for a process, subject to any conditions that it thought were necessary to reduce pollution. Likewise if it had any doubts as to the applicant's ability to fulfil these conditions when carrying out the process, then it was also entitled to refuse their application. In fact, if this was the case, then the enforcing authority had a duty, under the Act, to refuse the application. (Bell: 1997)

Section 7 of the EPA 1990, set out a number of objectives that had to be met in every authorisation issued by an enforcing authority. These statutory objectives included:

1.   Ensuring that, in carrying out a prescribed process, the best available techniques not entailing excessive cost would be used –

    (i)   for preventing the release of prescribed substances into any environmental medium or, where this was not practicable by reducing the release of such substances to a minimum and for rendering harmless any such substances which were released; and

    (ii)   for rendering harmless any other substances which might cause harm if released into any environmental medium;

2.   Ensuring compliance with any directions by the Secretary of State given for the implementation of any of the United Kingdoms obligations under Community Treaties or international law relating to environmental protection;

3.   Ensuring compliance with any limits and the achievement of any quality standards or quality objectives prescribed by the Secretary of State;

4.   Ensuring compliance with any requirements applicable to the grant of authorisations specified by the Secretary of State.

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[17] However, this time limit could be extended if it was agreed by both the applicant and the enforcing authority.

These objectives were central to all authorisations issued by the enforcement agency, as they set out the key concepts of IPC, such as using the 'best available technique not entailing excessive cost' (BATNEEC) to minimise pollution.[18]

3.2.5   Variation notices

Once an authorisation had been issued to an applicant, the enforcing authority had the power to vary its conditions at any time.   There were a number of reasons why the enforcing authority would do this, the most common of which would be to implement a new pollution control measure.   For example, if the enforcing authority was aware of a new technique to reduce pollution from a certain process, they could serve a variation notice on all the operators of that process requiring them to introduce it, thereby bringing their pollution abatement methods up-to-date.   In addition to this, if the enforcing authority thought that a process had changed significantly from its original authorisation, it could also issue an individual variation. This variation would be used to introduce any new requirements that the enforcement agency felt were needed, to deal with the changes to the process.   Variations could also be applied for by the operator if they knew that they were going to make substantial changes to their process, that would alter it substantially from that described in the original authorisation.[19] (Bell: 1997)

Whether the impetus for change came from the operator or the enforcing authority, all variations were carried out through the issuing of a Variation Notice. This notice set out the terms of the variation and gave the authorisation holder a time limit, in which to bring about any changes that were needed to meet the new conditions of the variation. (Waite: 1991) The issuing of a variation notice by the enforcement agency was, for the most part, used to authorise minor changes to a process which did not affect the emission limits set in the original authorisation.   If, however, the changes went beyond this and were seen by the enforcing authority as being 'substantial', then an operator would be required to apply for a major variation and the original process of application and consultation would have to be gone through again.

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[18] A full description of the concept of BATNEEC is beyond the scope of this study. However, more detailed information on this subject can be found in Department of the Environment and Welsh Office 1994, Bell: 1997, Waite: 1992, Purdue: 1991 and Hughes: 1996.

[19] The procedure for carrying out a variation was set out in the Environmental Protection (Applications, Appeals and Registers) Regulations 1991 (SI 1991/507). This required an operator to apply to the

3.2.6   Enforcing Integrated Pollution Control

Having set out the details of Integrated Pollution Control, the EPA 1990 then went on to detail the enforcement options that could be used to deal with any breaches of an authorisation. These gave the enforcement authorities the power to enter a premises, to carry out inspections, to take samples and to require the production of relevant documentation. In addition to this, they could also seize and render harmless any substance found on a premises, which they thought could result in environmental harm. (Waite: 1991)

The Act also introduced a number of administrative procedures, such as the issuing of enforcement, revocation and prohibition notices, which could be used, by the enforcement agency, to provide different levels of sanctions against a company, whose process was failing to meet the necessary standards. The first step taken by the authority, when it believed that a process was contravening or was about to contravene its authorisation conditions, was to issue an enforcement notice to the operator. This notice would set out the details of the process's infringement, what steps were required to remedy this and the time period in which these steps needed to be taken. Following on from this, if the enforcing authority then felt that the operator had failed to introduce an improvement programme, it could then issue a revocation notice. This revoked the operator's authorisation and meant that they could no longer legally carry out the process. Finally, if the enforcement authority thought that the authorised process could result in the risk of serious pollution, then it could serve a prohibition notice on the operator which meant that they could no longer carry out that process until improvements had been made. (Bell: 1997)

If these actions failed then the enforcement agency had one final option which was to prosecute the operator through the courts. Section 23 set out a number of criminal offences under Part I of the Act. These included the operation of a prescribed process without an authorisation, contravening the conditions of an authorisation, failing to give notice of the transfer of an authorisation, failing to comply with an enforcement or prohibition notice, failing to comply with a requirement imposed by an inspector and intentionally making a false entry in any record required to be kept as a condition of an authorisation. The more serious of these offences when tried in a magistrate's court could carry a maximum fine of £20,000, or if

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enforcement agency, in writing, for a variation notice setting out the details of the changes that were to be made and the pollution control techniques that would be used in the process. (Bell: 1997)

tried in a Crown Court, were subject to a maximum prison sentence of two years and/or an unlimited fine. (Ball & Bell: 1995)

3.2.7 Appeals

Finally, Section 15 of the Act gave applicants and process operators the right of appeal against a decision by the enforcement agency. This right of appeal was to the Secretary of State and could be launched for a number of reasons, including:

1. The refusal, by the enforcing authority to grant an authorisation;

2. The conditions attached to an authorisation;

3. The refusal, by the enforcing authority, to issue a variation to an authorisation;

4. The revocation of an authorisation;

5. The issuing of a variation notice;

6. The issuing of an enforcement notice; and

7. The issuing of a prohibition notice.

An appeal needed to be made, in writing, to the Secretary of State specifying the grounds for the appeal and stating whether the appellant wanted it dealt with at a hearing or through written representations. The full appeals procedure was set out in the Environmental Protection (Applications, Appeals and Registers) Regulations 1991 (SI 1991/507), which included a number of time limits for their completion. An appeal against the refusal to grant an authorisation or the conditions attached to an authorisation had to be dealt with within six months, whilst those that dealt with the revocation of an authorisation or the issuing of a notice, had to be dealt with within two months. (Waite: 1992)

3.2.8. The implementation of Integrated Pollution Control

In contrast to the incredibly slow introduction of the Control of Pollution Act 1974,[20] the government quickly issued their proposals for the implementation of Part I of the Environmental Protection Act 1990. This set out that the system of IPC should be introduced for new processes and large combustion plants from the 1st April 1991, with other existing processes gradually being brought within the terms of the Act over the next five years.[21] This

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[20] This took over ten years to implement.

[21] This was done on a sectoral basis, with each industry sector having a different deadline for implementation. A copy of this implementation programme can be in Annex A of the Department of

schedule was later adopted and meant that the implementation of IPC would be completed in
April 1996. (Waite: 1992)

3.3 The Environmental Protection Act, 1990 Part I: The Information Provisions for Integrated Pollution Control

The significance of the Environmental Protection Act 1990 is often connected to the new
measures that it introduced for Integrated Pollution Control which fundamentally changed the
way in which pollution was regulated in the UK. However, its importance was also due to its
information provisions, which again marked a considerable turning point, this time in the way
in which information on industrial pollution was made available to the British public. The
introduction of the Act's provisions removed many of the restrictions to information
disclosure that had existed in previous pollution control legislation and so helped to create a
far more open climate of access. The Act itself, led to the creation of a public register for IPC
which was designed to make more information on pollution control available to members of
the public. This section will now examine the information provisions found in Part I of the
Act, which led to the setting up of the IPC register. It will firstly investigate the background
to these information provisions, then examine the provisions themselves, before finally
turning to look at the actual system of registers that developed as a result of this Act.

3.3.1 Background to the information provisions for Integrated Pollution Control

Like many of the other issues dealt with by the EPA 1990, providing the public with greater
access to environmental information had been on the policy agenda for quite some time. As a
result of this, the information provisions included in Part I of the Act could be traced back to a
number of other developments that had already occurred in relation to environmental
information. In 1986, for example, the UK government had made a commitment to making
environmental information more available to the public,[22] when it had accepted the Royal
Commission on Environmental Pollution's recommendation that 'there should be a
presumption in favour of unrestricted access for the public to information which the pollution
control authorities obtain or receive by virtue of their statutory powers'. (Royal Commission
on Environmental Pollution: 1984: 38) This led to greater openness in the UK, as information

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the Environment and Welsh Office's 1994 publication *Integrated Pollution Control: A Practical
Guide.*

[22] This commitment came through the publication of the Department of the Environment's, 1986,
Pollution Paper entitled *Public Access to Environmental Information.*

provisions were included in a number of pieces of environmental legislation, which were passed towards the end of the 1980's. One of these was the Water Act 1989, that set up a public register for information on water pollution, which could be consulted by the public free of charge.[23] The provisions for the IPC register can therefore, be traced back to many of these earlier pieces of environmental legislation. In addition to this, the Act's information provisions could also be linked to work being carried out by the European Community. The European Commission had stated its intention to introduce a Directive which would extend public rights of access to environmental information before the Environmental Protection Bill was introduced, and so the UK government had decided that the best way in which it could support this directive would be to build upon the system of registers that had already been set up. (Department of the Environment: 1989)

In 1989, the government issued a consultation paper which set out the information provisions for Integrated Pollution Control and Local Authority Air Pollution Control, which it intended to introduce in the Environmental Protection Bill. This paper also set out the government's reasons for introducing these provisions, as well as stating what they hoped they would achieve. The government set out six objectives that it hoped would be accomplished through this new system. These included:

1. That the system would be clear, so that both the public and industry would know what information was available;

2. That it would not discourage the voluntary supply of information from industry to the enforcing authorities;

3. That it would preserve the confidentiality of information that was either commercially sensitive or which would compromise national security;

4. That it was administratively practical and simple to operate;

5. That it involved minimal additional cost and did not place an administrative burden on industry or the enforcing authorities;

6. That it built on familiar procedures. (Department of the Environment: 1989)

The government had decided that a public register would fulfil these objectives, as the public would be able to easily see what information was available, the information would be available in a well-presented format, it would be administratively practical to run representing

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[23] Other environmental legislation from this time which contained information provisions included the Environment and Safety Information Act 1988, the Control of Pollution (Registers) Regulations 1989 and the Food and Environment Protection Act 1985.

a fixed burden, both in terms of workload and financial resources, on the enforcing authorities and would mean that they did not have to respond to ad-hoc requests for information. The paper then went on to outline some of the government's ideas as to how the register would be created, setting out what information would be made available, how the register would be accessed and how sensitive information would be protected. (Department of the Environment: 1989) These ideas were made available for public consultation before finally being incorporated into the Environmental Protection Bill, with only minor changes.

The information provisions incorporated into the Environmental Protection Bill had a relatively smooth passage through parliament, as the idea of increasing access to environmental information was welcomed by all parties. However, some MP's were concerned about the amount of information that would be made available which led to some debate about the levels of access provided by the register, and the problem of commercial confidentiality. For example, Mr Tim Devlin, MP for Stockton South, argued that 'Industry wants to be as open as possible with information for the public, but openness has to be restricted … [as] public availability, which includes availability to the company's competitors, of a particular trade secret or other confidential process information, would significantly damage the company's commercial interest'. (Hansard H.C.: 1990e) However, Simon Hughes, MP for Southwark and Bermondsey, disagreed stating 'I take a somewhat different view from the hon. Member for Stockton, South (Mr Devlin) who spoke earlier. The presumption should be in favour of the public having the information.' (Hansard H.C.: 1990f) Debates about commercial confidentiality and the level of access to information would continue throughout the Bill's passage through parliament, but in the end, the overall content of the information provisions remained pretty much unchanged. The Bill finally received Royal Assent on 1st November 1990 and the information provisions found in the new Environmental Protection Act fundamentally changed the way in which information on industrial pollution was made available to the public.

3.3.2   The information provisions for Integrated Pollution Control

The information provisions set out in Part I of the Environmental Protection Act 1990 covered both IPC processes, controlled by the Environment Agency, and LAAPC processes, controlled by local authorities.[24] This section however, will examine these provisions solely in relation to IPC, where information was required to be held simultaneously by the Environment Agency and the appropriate local authority. In addition to looking at the Act,

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[24] These information provisions can be found in Sections 20 to 22 of the Act.

this section will also examine the Environmental Protection (Applications, Appeals and Registers) Regulations 1991 (SI 1991/507)[25] which were used to set out the information provisions in more detail. (Ball & Bell: 1995)

The details of what information was required to be kept in the register were laid out in Section 20(1) of the Act and Regulation 15 of the Regulations. This included[26]:

(a)   all particulars of any application for an authorisation made to the authority;

(b)   all particulars of any notice served on the applicant by the authority to supply further information in support of their application and of any information furnished in response to such a notice;

(c)   all particulars of any representations made by any person required to be consulted (i.e. a statutory consultee) for each authorisation, variation initiated by the enforcing authority or application for a variation by the operator;

(d)   all particulars of any authorisation granted by the authority;

(e)   all particulars of any variation notice, enforcement notice or prohibition notice issued by the authority;

(f)   all particulars of any notice issued by the authority withdrawing a prohibition notice;

(g)   all particulars of any notification given to the holder of an authorisation, by the authority, that a variation to their process would be classed as a substantial variation;

(h)   all particulars of any application for the variation of the conditions of an authorisation when that variation has been classed as being substantial;

(i)   all particulars of any revocation of an authorisation effected by the authority;

(j)   all particulars of any notice of appeal, against a decision by the authority, in relation to an authorisation or a variation, enforcement or prohibition notice, the documents relating to the appeal,[27] and written notification of the Secretary of State's determination of such an appeal and any report accompanying any such written notification;

(k)   details of any conviction of any person for any offence which relates to the carrying on of a prescribed process under an authorisation granted by the authority, including

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[25] A full copy of the Environmental Protection (Applications, Appeals and Registers) Regulations 1991 (SI 1991/507) can be found in Appendix 4.

[26] As set out in Regulation 15 of the Environmental Protection (Applications, Appeals and Registers) Regulations 1991 (SI 1991/507)

[27] Including documents setting out the grounds for appeal, correspondence between the operator and the enforcing authority and a copy of the decision or notice which is the subject-matter of the appeal.

the name of the offender, the date of conviction, the penalty imposed and the name of
the Court;

(l)   all particulars of any monitoring information relating to the carrying on of a
prescribed process, under an authorisation granted by the authority, obtained by the
authority as a result of its own monitoring or furnished to the authority in writing by
virtue of a condition of the authorisation or in response to a written request for
information from the Secretary of State or the authority;

(m)   in a case where any such monitoring information is omitted from the register as a
result of commercial confidentiality, a statement by the authority, based on the
monitoring information from time to time obtained by or furnished to them,
indicating whether or not there has been compliance with any relevant condition of
the authorisation;

(n)   all particulars of any report published by an enforcing authority relating to an
assessment of the environmental consequences of the carrying on of a prescribed
process in the locality of premises where the prescribed process is carried on under an
authorisation granted by the authority; and

(o)   all particulars of any direction given to the authority by the Secretary of State under
any provision of Part I of that Act unless relating to the removal of information from
the register due to reasons of national security.

The Act required that registers be maintained by the Environment Agency for all prescribed
processes where they were the enforcing authority and in addition to this, by local authorities
for the prescribed processes in their area. This meant that the information on a process could
be easily accessed by the people living in that locality. (Tromans: 1991) Both these bodies
were required to make the register available, for public inspection, at all reasonable times and
free of charge and in addition to this, provide facilities for the copying of register entries, for
which they could then make a 'reasonable charge'. The Act allowed them to keep the register
in any form, thereby acknowledging the existence of different technologies which could be
used to set up and maintain the registers.[28]

The information provisions, set out in the Act, were all based on the presumption of
information being made freely available to the public. However, there were two exceptions to
this rule. The first of these, provided for the exclusion of information from the register, on the
grounds of national security. Under Section 21 of the Act, the Secretary of State could
prevent information being included in a register, if it was thought that its release would

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[28] Section 20(7).

adversely affect national security. This information would then remain off that register for as long as that danger existed. In addition to this, an operator could also apply for information to be excluded on the grounds of national security. This application would be made to the Secretary of State who, under the Act, was responsible for deciding if a valid case existed and information could be excluded from the register. (Ball & Bell: 1995)

The second exclusion applied to commercially confidential information which was consistent with the requirements laid down for both other registers and information access legislation. (Fairley: 1993) The Act defined information as being commercially confidential if its entry, on the register, would prejudice the commercial interests of a individual or person to an unreasonable degree.[29] The decision about which information would be classed as commercially confidential, and therefore excluded from the register, was taken on a case-by-case basis by the enforcing authority or on appeal to the Secretary of State. The government, from quite early on, indicated that it wanted as little information as possible to be excluded from the register on these grounds, and so claims of commercial confidentiality would be treated with some scepticism. (Tromans: 1991) This was later confirmed in the Department of the Environment's publication *Integrated Pollution Control: A Practical Guide,* where the onus was firmly placed on the applicant to prove that disclosure would diminish a commercial advantage or increase a commercial disadvantage. (Department of the Environment and Welsh Office: 1994) This objective of making as much information available as possible was also backed up by the inclusion of a public interest test in the Act, which allowed the Secretary of State to rule that commercially confidential information could be placed on the register if it was in the public interest to do so. (Fairley: 1993)

A operator could apply for information to be treated as commercially confidential at a number of different points along the IPC system including when they submitted their application, when applying for a variation, when supplying information to comply with a condition of an authorisation or when supplying information in response to a formal request from the enforcing authority.[30] In addition to this, the Act also allowed the enforcing authority to notify an applicant that the information they had supplied might be commercially confidential, thereby giving them the chance to object to its inclusion on the register.[31] (Ball & Bell: 1995)

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[29] Section 22(11).

[30] Section 22(2).

[31] Section 22(4).

When an operator applied for information to be treated as commercially confidential, the enforcing authority had fourteen days, from the date of application, in which to make a decision regarding that request. If the enforcing authority decided that the information was not commercially confidential, then the applicant had twenty one days in which to appeal to the Secretary of State, during which time the information would remain excluded from the register. If the information was found to be commercially confidential, then it was excluded from the register for a period of four years, after which the operator would need to reapply. This time limit was included so that the status of the information could be regularly assessed and it would only remain off the register for as long as was necessary. (Ball & Bell: 1995)

3.3.3   The Chemical Release Inventory

Before looking at the implementation of the IPC registers, this study will now briefly examine the Chemical Release Inventory (CRI) which was established by the Environment Agency as a further way of making information on industrial pollution available to the public. The CRI was set up because the information kept in the IPC registers, whilst enabling people to appraise the performance of individual operators, did little to help them understand the overall effects of releases to the environment. The objective of the CRI was therefore to provide the public with information about the overall scale and nature of releases from IPC processes, which could then be used to highlight specific pollution problems. The information found in the CRI, was taken from the emission reports and monitoring data submitted by each company with an IPC authorisation. This information could be found for each process on the register but the CRI was tabulated so that data for the total annual releases of over 360 substances to land, air and water could be made available to the public. This information could then be accessed in a number of different ways, so that releases could be examined at country, county and district council level, as well as by industry sector and industry type. (Ball & Bell: 1995) In 1998 the Environment Agency, following a period of consultation with government, industry and other interested parties, made some modifications to the CRI. These included changes to the way in which data was collected through the introduction of a new reporting form called the Inventory of Sources and Releases (ISR) and also to its name, so that it was now called the Pollution Inventory.

The development of the Pollution Inventory has been particularly important, as it is the only way in which information from the registers is made available to the public electronically.[32] The Pollution Inventory was first made available in this way, by Friends of the Earth (FOE), through their web-site, as part of their 'Factory Watch' campaign[33] and more recently, has been included on the Environment Agency's web-site as part of their 'What's in your Backyard' campaign.[34] This has meant that the public has been able to ask questions of this IPC data that it would have been unable to do if it was only made available through the registers. The Pollution Inventory, therefore, offers the public another way of accessing information on IPC and whilst it only contains some of the data found on the registers, has highlighted both the value and uses of this type of information when made available to the public electronically.

3.3.4   The setting up of the registers

The first applications, by process operators, for IPC authorisations began in April 1991 and would have led to the setting up of the first registers, as their documents were made available for public inspection. This meant that there was only a short period of time, once the Act received its Royal Assent on 1st November 1990, for people to become familiar with it and prepare for its introduction the following April. This led, in early 1991, to the publication of a number of guidance notes by the government which set out the provisions of the new legislation and how they would be implemented. (Morris: 1991)

For IPC, the Secretary of State issued a general guidance note entitled *Integrated Pollution Control – A Practical Guide.*[35] This set out, in a straightforward manner, the main provisions of Part I of the Act and offered an interpretation of many of the legal terms, such as BATNEEC, that were found within it. It contained a brief overview of the Act's information provisions and gave details of where the new registers would be located. (Department of the Environment and Welsh Office: 1994) In addition to this, the Department of the Environment and Her Majesty's Inspectorate of Pollution also issued a number of other documents that

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[32] The 'IPCIS' index lists, the Environment Agency's administrative database for running IPC, also makes some information available in an electronic format but this can only be obtained by contacting the Environment Agency direct and so is not easily accessible to members of the public.

[33] This can be accessed at http://www.foe.co.uk/campaigns/industry_and_pollution/factorywatch/

[34] The Pollution Inventory is just one of the databases made available by the Environment Agency as part of its 'What's in your Backyard?' campaign. This can be accessed at http://216.31193.171/asp/introduction.asp

[35] This guidance has been up-dated on a number of occasions since then.

contained more detailed guidance for many areas of IPC[36] but not one that dealt specifically with the registers. HMIP was therefore to rely mainly on the provisions set out in the Environmental Protection (Applications, Appeals and Registers) Regulations 1991 (SI 1991/507), for its implementation of the IPC register.

For Local Authority Air Pollution Control, which ran in tandem with IPC, the Secretary of State issued a number of documents including five general guidance (GG) notes, which examined the provisions of Part I of the Act. GG1 contained an introduction to Part I of the Act, GG2 examined the provisions relating to authorisations, GG3 gave guidance on applications and registers, GG4 provided an interpretation of the terms used in individual process guidance notes and GG5 set out the appeals procedure. These notes were designed to help those operators, covered by LAAPC, interpret the Act's provisions and were used by companies to guide them through the application process. In addition to this, they were also to prove invaluable to many local authorities in helping them to understand the EPA 1990's new provisions and their statutory duties under it. (Morris: 1991) Although aimed primarily at LAAPC, these notes were particularly important as they formed the main guidance issued to local authorities and as the Act's information provisions were the same, for both systems of pollution control, they would have been used, as a reference for the setting up the IPC register, as well as that for LAAPC.

The guidance note GG3 was of particular interest, as this set out in detail, the requirements in Part I of the Act for the setting up of a public register. This guidance note as well as containing much of the detail which had been set out in the Environmental Protection (Applications, Appeals and Registers) Regulations 1991 (SI 1991/507), also gave local authorities specific information about their responsibilities in relation both to the LAAPC and IPC registers. It started by setting out the general details of the LAAPC register, which included a list of the information it should contain, when this information should be placed on the register, when the register should be made available to the public and what charges could be made for photocopying.[37] It then set out two requirements for local authorities in relation to the IPC register. Firstly, it stated that local authorities were required to hold a copy of the

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[36] For example, Department of the Environment and Her Majesty's Inspectorate of Pollution:1991, Her Majesty's Inspectorate of Pollution: 1990 and Her Majesty's Inspectorate of Pollution: 1996. In addition to these, detailed guidance notes were issued for every process, which gave information on the process and the particular features that needed to be taken into account when applying for an authorisation.

[37] Sections 46 – 49.

register for IPC processes, controlled by the national Inspectorate, that were located within their boundary and secondly, that the national Inspectorate would send papers containing the latest register details to the local authority, at regular intervals and that it was the responsibility of the local authority to place these papers on the register.[38] (Department of the Environment, Scottish Office and the Welsh Office: 1991c)

The timetable for the introduction of Part I of the EPA 1990 meant that, for both HMIP and local authorities, the introduction of the IPC register was just one of number of new measures that they had to get to grips with in a very short period of time. The dissemination of clear and detailed guidance was therefore, very important for the successful implementation of these new provisions. At the beginning, when the number of applications under IPC were still very small, the guidance issued, by the Department of the Environment, in relation to the registers had been fairly useful as it had explained the basic requirements for the registers such as when it had to be made available, what information would be received and how long this information needed to be kept. However, as time went on and more and more processes were brought within the terms of the Act,[39] this guidance became less and less useful, particularly for those bodies with large registers, as it failed to tackle many of the issues that they were facing. The following section will now examine the day-to-day running of the registers and highlight some of the problems that have emerged which have become significant barriers to the way in which the registers can be accessed.

3.4   The Operation of the Integrated Pollution Control Registers

Throughout the 1980's and early 1990's, public registers had been championed by the government, as the best way in which environmental information could be made available to the public. As well as those set up for Integrated Pollution Control under the EPA, 1990, public registers were also included in many other pieces of environmental legislation. This meant that by 1996, when the Department of the Environment published its booklet *Environment Facts: a guide to using the public registers of environmental information*, there were already some fifty five registers in existence covering all areas of environmental control. Many of these registers and particularly those that dealt with information on pollution control, were based on the original model, that had been created for water pollution under the Control

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[38] Sections 51 – 52.

[39] All industrial processes covered by IPC, should have applied for an authorisation by November 1995, so that the provisions contained in Part I of the Act would have been completely implemented by the 1st April 1996.

of Pollution Act, 1974. The employment of this type of register had resulted in a number of positive benefits, which included the development of a fairly standardised system through which the public could access information on pollution control. However, its adoption also meant that many of the problems or barriers to access that emerged, could be found not just in relation to one, but across the whole range of pollution control registers.

The growing commitment, in the late 1980's, of a number of international bodies to widening access to environmental information, led to this subject moving quickly up the political agenda in the UK. This meant that the public registers, which had been established by the government as the primary way of making environmental information available to the public, increasingly became the subject of examination. One such piece of research was carried out by the House of Lords Select Committee on the European Communities, in 1989. This had examined the current state of access to environmental information in the UK in preparation for the adoption, by the European Commission, of the Directive on Freedom of Access to Information on the Environment, and had investigated the registers as they formed one of the principal ways in which the public could access environmental information.

The Committee found that there was strong support, from government, industry and environmental groups, for the use of the register system. Public registers were seen as being beneficial because they provided access to a fixed range of environmental information, in a very structured format, that could not easily be abused. In addition to this, the financial burden on those bodies who were responsible for the registers was seen as being relatively low and administratively, they were seen as fairly easy to maintain.[40] However, the Committee also acknowledged that in addition to these benefits there were also some very real limitations to the registers and were a great pains to point out that the registers should only be supported if they truly assisted the public in accessing environmental information. (House of Lords Select Committee on the European Communities: 1989)

One group who, in their evidence to the Committee, highlighted a number of shortcomings with the registers, was Friends of the Earth (FOE). They argued that the register system would only really become an effective means of making environmental information available if it fulfilled a number of criteria. The first of these was that the registers should be conveniently based, so that they would be easily accessible to all members of the public. Secondly, that they should be user-friendly, so that the public, once they had made the effort

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[40] These points were made by the Department of the Environment, the CBI and the United Kingdom Environmental Law Association (UKELA) in their evidence to the Committee.

to visit them, would be able to easily acquire the information that they needed. Thirdly, that they should not be excessively expensive, so that the public could afford to make copies of information from the register. Fourthly, that the registers should be interactive and contain comprehensive and timely information that could be effectively manipulated by users to help them make informed decisions about the environment, and finally, that they should be adequately resourced, so that they could be maintained to a high standard. The Committee agreed with many of these points, stating that it was of paramount importance that the register system was both 'geographically accessible' and 'user-friendly' and that they hoped the employment of 'modern data processing techniques' would lead to improvements in the register system which would result in more effective access to environmental information for the public. (House of Lords Select Committee on the European Communities: 1989)

The following year, the government introduced the register for Integrated Pollution Control and having taken note of some of the points raised by the Select Committee, set a number of objectives which it hoped the register would achieve. One of these was to:

'maintain public confidence in the regulatory system through a clear and transparent system that is accessible and easy to understand and is clear and simple in operation.' (Department of the Environment and Welsh Office: 1994: 3)

A register system that was accessible, easy to understand and simple to run was therefore, seen by the government as central to creating an open system of access to information on industrial pollution and increasing levels of accountability in this area. However, there were a number of problems with this being achieved. One of which was that the registers for IPC were based on the COPA 1974 model whose limitations had already been highlighted, both in the Select Committee's 1989 report and other academic research that examined the registers.

The following section will now look at a number of problems which have increasingly affected access to the IPC registers, drawing on research that has been carried out both in relation to the IPC and other environmental registers. It will firstly examine a number of issues that have been seen as creating physical barriers to access, such as problems of awareness and accessibility. Secondly, it will investigate the problems of cost which have created a financial barrier to access, and finally, it will examine a number of informational issues which have increasingly been seen as inhibiting the public's use of the register. These informational barriers are largely the result of the format of the register and have had important implications for both its user-friendliness and manageability. Past research into the registers has highlighted the existence of all of these problems, but has tended to concentrate

on the physical and financial issues. This has meant that the informational barriers, whilst identified in other research, have never been examined in any great detail and particularly not in relation to the IPC registers held by both the Environment Agency and local authorities. This study and its concern with informational issues therefore, marks something of turning point in research into the public registers.

3.4.1 Physical barriers to using the Integrated Pollution Control register

One of the first pieces of research carried out in relation to environmental registers was by Tim Burton, who examined access to the water pollution registers that had been made available, firstly, under the Control of Pollution Act, 1974 and later under the Water Act, 1989. Burton was interested in the public's utilisation of these registers and argued that despite widespread anticipation from some quarters about their creation, the actual level of interest when they were finally introduced, both in terms of the number of enquiries and the variety of people making those enquiries, was very disappointing.[41] He went on to identify what he saw as a number of interlocking factors that were responsible for this lack of use including physical barriers, such as lack of awareness and problems of access, financial issues and informational difficulties, such as comprehensiveness and data sufficiency. (Burton: 1989b)[42] Although written some thirteen years ago, many of the physical barriers to access that were described by Burton can still be found in relation to the IPC registers today.

Lack of Awareness

Burton identified problems in awareness as a significant barrier to the public's use of environmental registers and went on to highlight a number of awareness problems. The first of these was that the public was generally unaware about which organisations were

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[41] This research examined requests made to see the register at three water authorities in the period August 1985 – December 1986. They were as follows: seventy-five requests to Severn Trent Water, eighty-five requests to Anglian Water and seventy requests to Yorkshire Water. This was seen as hugely disappointing as Yorkshire water alone had 4.5 million customers and maintained a register of some 6,000 discharge consents. In addition to this, once the figures were broken down the vast majority of users were salesmen trying to identify possible new clients.

[42] Burton's work was to become one of the key pieces of research in relation to the environmental registers and many of the other studies that have followed, although examining different registers, have used the same methods and criteria for examining their success. Other such examinations which follow this format include Hall: 1993, John: 1995, Ross & Rowan-Robinson: 1994 and Rowan-Robinson, Ross, Walton and Rothnie: 1996.

responsible for pollution control and so were unlikely to know of the existence of the registers or where they would need to go if they wanted to access this type of information. Secondly, he found in his research, that neither the Water Authorities or the Department of the Environment had made any real effort to promote the registers to the public and in doing so had failed to encourage public participation in this area. He saw this lack of promotion as being particularly counterproductive as the authorities would gain little return on their investments of time and money, if the public was unaware of the registers and they remained unused. (Burton: 1989b)

Problems arising from lack of awareness were also identified in relation to the IPC registers by research carried out for Friends of the Earth. This research which examined the IPC registers at Avonmouth,[43] stated that 'it seems likely that very few members of the public are aware of the existence of the public register' as 'very few ordinary members of the public have ever visited the public register'. (Taylor: 1997: 12) This also appeared to be backed up by research into the Environment Agency's[44] copies of the IPC register, by Environmental Data Services (ENDS), who found it very difficult to obtain precise figures relating to its actual usage.[45] The only figure that ENDS could find was given in HMIP's 1992/1993 Annual Report, which said they would have received approximately 1000 enquiries and visits to the register by the end of the year. ENDS estimated that it was unlikely that any of Inspectorate's offices were receiving more than a dozen visits a week in relation to the register[46] and that most of these were from consultants, companies with an authorisation and sales representatives rather than from members of the public. (Environmental Data Services: 1994) Lack of awareness had therefore been identified as one reason for the low levels of usage of the IPC register by the public and was something that neither the Act or the enforcement agencies had really tried to address.

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[43] Avonmouth, near Bristol, was home to a large number of industrial processes that were covered by IPC.

[44] Or what was then, Her Majesty's Inspectorate of Pollution, at the time of the research.

[45] They made no attempt to find out the number of users for the registers maintained by local authorities who, as ENDS pointed out, were more likely to have been visited by members of the public. (Environmental Data Services: 1994)

[46] This was at a time when the registers were kept in HMIP's three regional offices at Bedford, Leeds and Bristol. The IPC registers are now held in sixteen Environment Agency offices across the country.

Problems of Access

The next barrier to the effective use of the registers, highlighted by Burton, was whether people could physically access the register. In his case, the water registers had been located at the Headquarters of each Water Authority which meant that some people had to travel particularly long distances to inspect the register, which had a significant impact on use. (Burton: 1989b) Since Burton's research was published, some changes had been made to the ways in which other pollution control registers were made available to try and solve this problem. This can be seen in relation to the IPC register where copies were kept by the local authority, where the process was located, as well as by the Environment Agency so that information could be easily accessed by local people. However, accessing information that did not fall with a user's local authority was not so easy and could still mean a long trip either to the place where a process was located, or the appropriate Environment Agency office, something which the ENDS report had highlighted as being a particular problem for the serious researcher. (Environmental Data Services: 1994)

A further problem that Burton identified as hindering access to the registers, was the time when they could be viewed by the public. The COPA 1974, had provided that its registers be made available at 'reasonable hours'. (Burton: 1989b) However, as Ball and Bell were to point out, this definition could be open to a number of interpretations, which ranged from only opening when the enforcement agency had sufficient staff to deal with enquiries, to those times regarded as being reasonable by the prospective user. (Ball & Bell: 1995) The term 'reasonable hours' was taken by most enforcement authorities to mean normal office hours but as Burton argued this would result in most enquirers having to take time off work if they wanted to consult the register. (Burton: 1989b) To try and solve this problem it had been argued that enforcement agencies should at least try to stay open one evening a week or maybe one Saturday a month, but this did not appear to have been adopted in relation to IPC, where most local authority registers were only available during normal office hours and Environment Agency copies between 9.30am and 4.30pm Monday to Friday, meaning that access by employed members of the public to the registers was still problematic.

3.4.2   Financial barriers to using the Integrated Pollution Control register

A further barrier to access that was identified by Burton was that of cost. Legislation for many of the registers, including those for IPC, required that the public be able to view the register free of charge, but permitted enforcement authorities to make 'reasonable charges' for any copies made of documents from the register. Burton found that the use of the term

'reasonable charges', could significantly hinder access, as it allowed charges to be set by individual enforcement authorities which led to enormous disparity when these charges were compared. (Burton: 1989b) Problems with charging for information were also identified by John in relation to the radioactive substances registers and Taylor for the IPC registers. For the IPC registers, these problems arose not so much with the Environment Agency, which had a national charging policy, but with local authorities who could effectively charge what they wanted and where photocopying could be very expensive particularly for large amounts of information. (Taylor: 1997)

Burton believed that together, these physical and financial issues provided a significant barrier to the information contained in the water pollution registers and would continue to do so, unless there were changes either in the legislation or the attitude of the various Water Authorities towards information access. He argued that a number of improvements were needed if environmental information was going to be made effectively available through the register system. Improvements, that he thought, would result in positive benefits both for the public and the enforcement agencies. (Burton: 1989b) Despite some changes, many of the financial and physical barriers that Burton identified still hinder the public's use of the registers today, but these are no longer the only barriers to access. As will be seen below, informational difficulties, particularly in relation to the IPC registers, have increasingly become a problem and now form a significant barrier to access in their own right. This has meant that users, once they had overcome the physical and financial barriers to access, faced a further hurdle which often prevented them from accessing the information, found in the register, in any meaningful kind of way.

3.4.3   Informational barriers to accessing the Integrated Pollution Control register

Past research had highlighted a number of informational issues that could result in the poor utilisation of the registers by the public. Burton, for example, identified two informational objectives that he felt the registers needed to achieve if the public was to have effective access. The first of these was that the information should be 'comprehensible', as it was imperative that people could understand the information kept on the register if they were going to use it and secondly, that the data placed on the registers was sufficient. By this he meant that the register should contain all the necessary information and that it should be up-dated regularly to provide as complete a picture as possible of any authorisation. (Burton: 1989b) These two informational issues are of course, still important today, but no longer form the only ones to influence the way in which the registers are accessed. The IPC registers, as will be seen below, have been affected by a number of information and

information management issues, that have had a significant impact on the way in which information from the register is made available to the public.

Register Format

In the debates that led up to the adoption of the Environmental Protection Act 1990, the then Environment Minister, David Trippier, had promised that the Act would fulfil the government's commitment to increasing the amount of environmental information in the public domain, through the introduction of a register for Integrated Pollution Control. He stated that these registers would contain a range of information on industrial pollution and was confident that they would be 'well maintained, easy to use, comprehensive and clear' and not a 'confusing mass of paper through which readers would have to trawl'. (Hansard H.C.: 1990c) The Act provided that the registers could be kept in any form and it was hoped, at least by some MP's, that this would encourage the use of information technology to make them both easier to use and more widely accessible. (Hansard, H.C.: 1990d) Unfortunately this was not to happen and even today, some twelve years later, the registers are still paper based and have proved somewhat difficult to maintain, making a 'confusing mass of paper' all too often a fitting description. (Environmental Data Services:1994: 176)

The fact that the registers were paper based has led to a number of difficulties in the ways in which information was made available. Firstly, it has meant that there was no central IPC register. All that was available from the Environment Agency was a list of individual processes, which gave details of their addresses, their relevant Environment Agency office, their local authority, their process type, their authorisation number and the date of their authorisation.[47] For full details of a process's application, authorisation, consultee replies and monitoring data, a user would have to travel to the local authority, where the process was based, or the appropriate Environment Agency office. This lack of a central register, made the carrying out of national or industry wide research particularly problematic due to the severe difficulties, including those of cost and travel, that would have to be overcome by the researcher if they were to make any meaningful comparison of the information found in the individual files of individual registers. (Environmental Data Services: 1994)

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[47] These are the Environment Agency's IPCIS index lists.

Organisation of the registers

Further problems arose from the fragmented way in which the IPC register was implemented. This, along with the lack of government guidance as to how the registers should be set up, has raised a number of information management issues that have important implications for the way in which information is made available. The IPC register is currently held in 336 different locations.[48] This in itself, raises a number of issues of co-ordination and combined with the lack of detailed guidance from the government, has led to major problems of standardisation. Each enforcement agency was responsible for creating its own register and in the case of local authorities this was largely done in isolation from one another. This led to a great deal of divergence as different authorities chose to organise and maintain their registers in different ways. This meant that whilst some registers were well organised so that information could be easily retrieved, others were not organised at all, making any meaningful access to the documents practically impossible. Like local authorities, there were also substantial differences in the original copies of the register kept by the different offices of HMIP. In 1993, when ENDS carried out their research, these differences were highlighted as a particular cause for concern, as they had an important impact both on the information made available and the ease with which it could be accessed. Changes to the IPC registers were however, made by the Environment Agency in 1995 resulting in their copies being organised in a much more uniform way,[49] but the divergence in local authority registers continues, thereby introducing something of a lottery into the register system, as users in some areas of the country face far greater problems in being able to access information from the register than in others.

Retrieval of information from the Registers

The lack of resources made available for the implementation of the registers has also had an important impact on the way in which information can be retrieved, as this had meant that in most cases no information retrieval tools, such as indexes, have been created. This has meant that often the only way to find a specific document, such as a variation notice, is to look through the whole of that process's file or even, in some cases, if there was no organisation, the whole register. Likewise if you wanted to search the registers to look, for example at the release of a certain chemical, this would be practically impossible unless you already knew

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[48] There are currently 320 local authority IPC registers and 16 Environment Agency copies.

[49] This will be discussed further in Chapter 6.

that it was being released by a certain company and even then obtaining information about these releases, could result in a long hunt through the files.

As well as the problems of indexing, retrieval of information has also been hindered by the lack of written guidance given to the public which explains how they could use the register. This has meant that the public, especially when using the register for the first time, would be reliant on a member of staff being there to guide them round and highlight the information that was available. As Friends of the Earth were to point out from one of their visits to an Environment Agency register, 'there is nothing to guide the public around the office really – the best approach is to ask to be shown which files are which and in what order they are kept, then just plough through a file to see what is in it'. (Taylor: 1997: 13) Now whilst this may be one way in which to become acquainted with the register, it does not really appear to be the most effective way in which a visitor could access the information they were looking for, or find an answer to a specific question.

Maintenance of the registers

Problems have also arisen with the maintenance of the registers. The first of these has resulted from the way in which information for the registers was circulated. Information for the registers originates with the individual Environment Agency inspector responsible for a particular IPC process. This inspector is then responsible for forwarding that information, both to the Environment Agency office and the appropriate local authority where the register was held. The result of this is that both registers only became aware of information for the register when it arrives from the individual inspector and there was no easy way of checking if all the correct information is on the register, or if any of the documents have gone astray. This problem of missing information, was highlighted by ENDS, as a particular difficulty. In their research, they found that legally required information, such as monitoring data and consultee replies, were missing from what they described as a 'worrying number of files' and in some cases they were even unable to locate whole files. (Environmental Data Services: 1994: 178) This problem of missing information would be particularly frustrating for users who, after making the effort to visit the register, found that the information they were looking for was not there.

A further maintenance problem, came from the time taken for documents to be placed on the register. For the public to have effective access to the information on the register, the relevant documentation has to be made available in a timely way. If the time taken for information to be forwarded and then placed on the register is particularly long, then this could affect the

public's role in the IPC process. For example, the late filing of a company's application for an authorisation could result in the public missing out on their opportunity to respond and public participation in the process would as a result, have been significantly weakened.

Finally, problems have also arisen with the maintenance of the registers as a result of their size. Because the registers are paper based and information relating to each authorisation continues to be collected each year, the registers are constantly growing. This has proved to be a particular problem for those enforcement agencies with a large number of industrial processes, as their registers take up a substantial amount of room. In addition to the problems of space, this huge volume of paperwork also has some other serious implications, the first of which relates to cost. The Records Management Society has estimated that every inch of paper kept in a filing cabinet costs two hundred pounds to create and ten pounds a year to maintain. (Edmonds: 1992) This amounts to a very significant amount of money when applied to the paperwork maintained in the registers nation-wide. Secondly, it affects the time taken by the enforcement agency to up-date the register and finally, and more importantly, it affects the ease in which the registers can be accessed by the public and the time it takes to examine them. Friends of the Earth, for example, found that it took one of their researchers over sixty hours to look through all the relevant files in the Avonmouth register. (Taylor: 1997) This would be a daunting task for the trained researcher, but for a member of the public, with little knowledge of the registers, this would be particularly off-putting.

Comprehensibility

One final problem with the registers is the way in which information is presented. Often the documents found in the register are of a very technical nature and are written using the jargon of industrial processing and pollution control which makes them very difficult for a lay person to understand. This again has caused problems for users as it means that they are often reliant on a member of staff being present to help them understand the information found on the registers. This problem was highlighted by Friends of the Earth who found that Environment Agency inspectors were well aware that merely sending the public to look at the documents on the register would not result in them gaining a satisfactory answer to their questions and so were often present to try and help them understand the information that they found. (Taylor: 1997) This led to calls for easily understandable summary data to be made more actively available to the public, which could then be used to answer basic questions without them having to access the whole register.

As has been seen in this section, a large number of problems have arisen, since the introduction of the IPC registers, all of which have affected the way in which the registers are used. Originally, it was the physical and financial barriers to access that were seen as the primary reason for the public's poor utilisation of the registers, but as more has been done to address these problems, it has increasingly been a number of informational issues which have prevented their effective use. Whilst previous research had highlighted the existence of some of these informational problems, little had been done to examine why these have occurred or what can be done to improve them. The contention of this research is that these problems are the result of poor policy implementation and a lack of awareness of information management techniques, and that the implementation of this information access policy would have been far more successful if the government had highlighted the benefits of employing these information management techniques in its guidance.[50] The relationship between information access, information policy and information management therefore, lies at the heart of this study and will be considered in greater detail in the next chapter.

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[50] To highlight this point further, Appendix 5 contains a review of the United State's Emergency Planning and Community Right-to-Know Act which was introduced in 1986. This Act also contains provisions to make pollution information available and can be seen to have been far more successful in achieving this aim than the registers for Integrated Pollution Control .

Part 2 (a):

Evidence from the literature and the basis for a model.

Chapter 4. Information Policy: The Relationship Between Information Access, Policy Implementation and Information Resources Management

4.1 Introduction

The previous chapter in its examination of the registers for Integrated Pollution Control, set out the case study for this research. These registers had been designed to increase access to information on industrial pollution, but had in many cases been less than effective in achieving this, due to problems of implementation and information management. As a result of this investigation, a number of questions were raised about the relationships between information access, policy implementation and information resources management (IRM) and particularly about the effects that policy implementation and IRM had on the creation of a successful information access policy.

This chapter, through a review of the literature, will now examine these three key areas of information access, policy implementation and information resources management and investigate the relationships between them. The first section will set out the main research questions examined in this chapter. The second section will then identify the methods used to carry out the literature review. The third section will examine the area of access to information and the concepts that underpin it. It will look specifically at government information access policies and highlight a number of issues that can have an effect on this type of policy. The fourth section will examine the implementation of information policy, focusing primarily on the policy process and the different models put forward for the analysis of policy implementation. Whilst section five will then examine the concept of IRM and particularly its use in the United States, where it has been developed to manage the government information resource. One idea, that has emerged as part of IRM is the information life cycle, which has been developed, both as a conceptual and practical tool, for the management of government information resources. The following two sections will then examine the relationships between information access, policy implementation and IRM, an area where little research has been carried out in the past. This will be carried out by looking firstly, in section six, at the ties between information access policy and IRM and secondly, in section seven, at those between policy implementation and IRM. Finally, section eight identifies a conceptual model, through which the effects of policy implementation and IRM on information access can be examined. This model will later be employed to evaluate the case study used in this research.

4.1.1   Research questions

One of the primary objectives of this research, is to add to the growing body of work that had been carried out within the field of Information Science, into the study of information policy. This research makes a number of new contributions to this area, firstly, through the examination of the relationships between information access, policy implementation and IRM and secondly, through the development of a conceptual model that could be used to explore these connections, both in relation to the case study and other information access policies. What follows in this chapter, is therefore a highly focused and critical review of the literature, which was carried out with the specific aim of developing a conceptual model that can be used both to organise and examine the empirical data gathered as part of this research. The resulting literature review is therefore, highly selective, focusing on the three key areas of information access, policy implementation and information resources management and the relationships between them.   A general overview of the information policy literature is therefore beyond the scope of this study, although it does draw from this body of work where appropriate.[1]

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[1] Writing on information policy has, in the last fifteen years, become something of a growth area, particularly as information policy issues have increasingly found their way on to the political agenda. Research into information policy, which for many years was confined to the Library and Information Science community, is now carried out by members from a wide-range of academic disciplines and has resulted in an ever-growing body of literature on the subject. This literature has, for the most part, been concerned with an examination of the main areas of information policy, such as data protection, freedom of information and copyright, but in more recent years has also turned to investigate the origins and theoretical foundations of the subject area. This has meant that research into information policy has expanded both in terms of the numbers of people writing on the subject and in the areas investigated. In light of this growth, any attempt to provide a comprehensive review of the information policy literature, as part of this study, would be unrealistic and would go beyond the parameters that had been set for this research.

As a result of this, there are a number of important pieces of work, relating to the study of information policy, which have fallen outside the scope of this literature review. However, these remain of great significance because of the ways in which they have influenced or advanced the overall thinking of the subject area. Some of these key studies will now be listed in the aim of providing the reader with a wider picture of the information policy field and as a starting point for any future investigation into this subject area. These works include: for example, that by Hernon & Relyea: 1968 and Oppenheim and MacMorrow: 1997, both of which provide an important overview of the field of information policy; that by Rowlands: 1996, 1997 and 1998a, Browne: 1997(a) and (b) and Rowlands and Turner: 1997 all of which examine the theoretical foundations of the study of information policy; work by Braman:

The research questions examined in this chapter, relate to the three key issues of information access, policy implementation and information resources management, the relationships between these issues and the conceptual model developed to explore these relationships. The specific research questions are as follows:

Information access

- What is an information access policy?

- What is meant by access to government information?

- What is the rationale for access to government information?

- How have information access policies developed?

- What are the specific issues that effect information access policies?

Policy implementation

- What is meant by public policy?

- What is the relationship between information policy and public policy?

- How can work carried out in the policy sciences help us to analyse information policy?

- What is the policy process?

- How can this be used in the analysis of information policy?

- What is policy implementation?

- What approaches are available for the study of policy implementation?

- What are the main concepts underpinning the top-down approach to implementation?

1989 and 1990 into the characteristics of information policy; work by Karni: 1983, Burger: 1993, Kristiansson: 1996 and Moore: 1993 into the identification of different frameworks for the analysis of information policy and finally, work by McClure, Hernon and Relyea: 1989, Moore and Steele: 1991 and Sillince: 1994 into the information policies of individual countries, such as the US and UK, or political institutions, such as the European Union. These are just a few of the many pieces of research that have been carried out into information policy during the last fifteen years. They are highlighted here, as each has resulted in some small advancement in the way that information policy has been studied and so in turn, have had an indirect influence on the research carried out in this study, even if not specifically mentioned. Some, however, like that of Burger, Rowlands and Browne have had a more direct influence on this research, as will be seen in relation to the examination of policy implementation which occurs later on in this chapter.

- What are the main concepts underpinning the bottom-up approaches to implementation?

- What are the strengths and weaknesses of these different approaches to policy implementation?

Information Resources Management

- What is IRM?

- What are the origins of IRM?

- What are the basic concepts that underpin IRM?

- How has IRM been used?

- How has IRM developed?

- What is information life cycle analysis?

- How can the information life cycle be employed in the management of information resources?

Relationships

- Is there a relationship between information access and information resources management?

- If so, what is the relationship between information access and information resources management?

- Is there a relationship between information policy and information resources management?

- If so, what is the relationship between information policy and information resources management?

- Is there a specific relationship between policy implementation and information resources management?

Conceptual Model

- Can a model be devised to examine information access policies?

- Can this model limit the scope when studying information access policies?

4.2 Methods

The methods used to carry out this review, were designed to identify the key literature in the relation to information policy, focusing specifically on the three areas of access to information, policy implementation and information resources management.

4.2.1   Sources and search strategies

This literature review was carried out using a number of different sources, from both the United Kingdom and the United States. The first stage of this review set out to identify the extent of the literature in relation to information policy and the three main topics of information access, policy implementation and IRM and therefore employed a broad search strategy. These first searches were carried out primarily using two databases, the Social Science Citation Index (SSCI) and UnCover,[2] and were designed to retrieve as much of the literature, from the different subject areas, as possible. To begin with, searches were carried out on each database examining the general area of information policy. These were designed to establish the boundaries of the field and identify the main areas where information policy research was taking place. General searches were then carried out into each of the three topics which form the main focus of this literature review. For example, the original searches carried out in relation to information resources management, examined the overall field of information management, before turning to focus specifically on the literature that dealt with IRM. Likewise, with information access and policy implementation, searches were carried out that looked first at the general areas of access to information and public policy before focusing on the actual topics themselves. By starting with these general searches, the author was able to gain an overall picture of the literature in relation to each subject,[3] so that later searches could be used to retrieve those documents that were of particular relevance for the study.

The aim of the second stage of the literature review was to identify the key documents and authors for each subject area. This was achieved by carrying out a further series of searches, this time using narrower search terms or by applying a limiting factor to the original search term. For example, in relation to information resources management, the second stage of

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[2] The database of the Colorado Association of Research Libraries, which is now available at www.ingenta.com

[3] For example by doing this, the author was able to gain a feel of who was writing in the different subject areas and how much research was being carried out in these different fields each year.

searches was carried out using search terms that focused specifically on IRM, rather than on the overall topic of information management. Whilst searches carried out in relation to information access policies looked specifically at access to government information before being limited by date and country. Finally, those on policy implementation focused on the policy process and specifically on the phase of implementation. This second stage of searches were again carried out using the Social Science Citation Index and UnCover but also included searches on Library and Information Science Abstracts (LISA), Current Research in Britain (CRIB) and Dissertation Abstracts, so that a list of relevant documents were identified from the specific Library and Information Science subject area as well as the general literature. The employment of these different search strategies led to the retrieval of more focused results, which were then analysed in a number of different ways. Firstly, they were examined by journal title, which enabled the author to identify the key journals for each subject area[4] and secondly by author, to identify who was carrying out research in these areas. These results were then used as the basis for further searches. The complete record for each document, including the abstract, was then downloaded from the database, so that it could be assessed for relevance. In doing this, a list of the most relevant documents was then identified for each subject area.

Following the analysis of the results from the previous stages, the author was able to start gathering the material that had been identified. Two different types of documents were primarily collected as a result of these searches; the first of these were documents that gave a broad overview of the field, and the second were those that were particularly relevant for each subject area. Once this material had been acquired and read, the information obtained could then be used to further and refine the literature review. This was done firstly, through an examination of the citations found in each document and secondly, by investigating who had cited a particular document. This was carried out using a citation search on the Social Science Citation Index and often resulted in highlighting other documents that were relevant to the research.

The different stages of this search strategy were then repeated at various intervals throughout the research, so that the literature review remained up-to-date. This periodic re-examination, also enabled new areas of research to be brought within the literature review. This could be seen, for example, in relation to the information life cycle, which emerged as a particularly

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[4] For example, the author was able to identify Government Information Quarterly and the Journal of Government Information as key publications in relation to access to government information and information resources management.

important concept from the research carried out into IRM. This brought a further area of research within the scope of the literature review and led to the examination of documents from fields related to IRM, such as archival and records management.

In addition to identifying the key literature for each of the three individual subject areas, this search strategy was also employed to retrieve documents that examined the relationships between them. However, as will be discussed later in Sections 3.6 and 3.7, this would prove somewhat problematic, as very little relevant documentation could be identified from these searches. This meant that instead of highlighting the relevant documentation that was available for the study of these relationships, this search strategy played an important role in identifying it as an area where little academic research had been carried out.

Finally, as well as using the individual databases cited above, searches of a number of different university sources were also to play an important role in helping to identify the relevant literature for each subject area. Of these, the most important were the university library catalogues of, in the UK, City University, Southampton University, The Institute of Advanced Legal Studies and the London School of Economics and in the United States, the University of Maine and the University of California, at Berkeley. In addition to this, access to a database, maintained by the Department of Spatial Information Science and Engineering and the National Center for Geographic Information and Analysis at the University Maine, was invaluable for identifying a number of key American documents. Having established the methods used to carry out this literature review, the following sections will now turn to look specifically at the three issues that lie at the heart of this research, starting first with access to information.

4.3   Information Access Policies

In an examination of the information policy literature and particularly those studies that have attempted to define the scope of the field, access to information can be identified as a core area of information policy (IP). For example, Oppenheim and MacMorrow in their work to define the scope of information policy, identified a number of areas, such as freedom of information and the role of public libraries, where the primary objective was to provide the public with access to information. (Oppenheim & MacMorrow: 1997)[5] Access to information

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[5] Other classificatory schemes, such as that used by Chartrand in his examination of the laws of the 95th to 100th Congresses, also included a number of categories whose objective was to provide access to

can therefore be seen, as a key issue in the field of information policy and the examination of information access, an important area of information policy research.

So what is meant by 'access to information'? Of course the answer is somewhat obvious, in simple dictionary terms 'access to information' means being able to obtain information or data from a particular person or body. However, the use of the term 'access', in relation to information, is important as it is not a neutral concept and therefore implies that information is not being made freely available. Instead, it intimates that someone has power over information, which means that access to it could be broadened or restricted, or even in some cases permitted or denied. This creates an unequal relationship between those that require access and those who have the power to decide about that access and like any relationship where power is involved, there is a danger of abuse. This is particularly significant in relation to information, as having access is usually seen as being beneficial and empowering and so any restriction, would have harmful consequences.[6] (Harris: 1992)

In response to this, policies that dealt specifically with access to information have become increasingly commonplace and can now be found in a variety of organisations, both in the public and private sector. Many of these access policies, particularly in the public sector, have been concerned with encouraging greater openness and have therefore been used to establish quantifiable levels of access, so that the opportunity for abuse can be controlled. In addition to this, they have also been used to address a number of the other issues that are raised by access, including personal privacy, official secrecy and commercial confidentiality. However, not all information access policies are concerned with making more information available. For some organisations, their primary aim might be to restrict access to information, so that instead of encouraging greater openness, some policies can be used to promote a culture of secrecy instead.

The growth in the development of information access policies, has largely been due to a recognition within organisations, both of the importance of their information holdings and the

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information held by the government, such as information disclosure, library and archives policy and the actual dissemination of information by the government. (Chartrand: 1989)

[6] In this so called 'information age', discussion about the problems of information inequality have become increasingly commonplace and have led to the development of the 'information rich' and 'information poor' concept. Some writers especially have been concerned about the effects that this inequality could have on our society and have already seen it as being responsible for a number of crises. See for example, Schiller: 1996 for a discussion of information inequality and its effects on American society.

effects that a policy, either promoting or regulating access to information, could have. The importance of information access has also been recognised by various groups within academia[7] and has led to a growing body of literature examining the issues raised by this area. This literature stems from research carried out into information access policies, both in the public and private sector. However, as this study is primarily concerned with access to government information, it is on this area of research that the following sections will focus.

4.3.1   Access to government information

Governments, in most developed countries, are the largest compilers and producers of information[8] and as such, have a key role to play in determining what information is made available to the public. As a result of this somewhat unique position, government has increasingly been the focus of research examining information access and the policies designed to tackle it. However, before this section examines the reasons for having access to government information and the ways in which access policies have developed, it is useful to have some definitions of the terminology involved, such as 'government', 'government information' and 'access to government information'.

The term 'government' has a number of different interpretations. At its broadest sense, it can relate to all the activities carried out by the legislature, the executive and the judiciary at national, regional and local levels, or it can be more narrowly defined, as the actual government, made up of the Prime Minister, Ministers and Departments, whose function it is to steer the country. The literature examining access to government information, for the most part, defines 'government' in its widest sense, but often places limits on its scope by examining a specific level of government, such as the Federal government in the United States or local authorities in the United Kingdom. (Beers: 1992) 'Government information' has an equally broad definition, relating to the information held by all governmental bodies. This information may have been produced by government itself, collected from outside sources, or produced by other organisations as required by government. It may be published or unpublished. It can be kept in a range of different formats: paper, electronic documents, maps, microforms, video or pictures and may be intended to be made available to the public, or not. (McClure, Hernon & Relyea: 1989) 'Access to government information' can

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[7] Information access issues are dealt with by a variety of disciplines within academia including Information Science, Political Science and Law.

[8] This information is collected primarily by the government to fulfil its management role and to help the public sector with both its planning and decision-making.

therefore be defined as the way in which information, held by a public body, is made available to people both inside and outside of government.

4.3.2 The rationale for access to government information

A number of arguments have been put forward in support of the public having access to government information. These have mainly emerged from the theories of political thought, democracy and the role citizenship in representative government. The first argument put forward in support of greater access, was that the government, if allowed to work in secrecy, could abuse the power that it had been entrusted with by the electorate. This view was espoused by a number of Nineteenth Century political commentators including Jeremy Bentham, who saw secrecy as an evil within government.[9] Bentham argued that 'secrecy, being an instrument of conspiracy, ought never to be a system of regular government'. (Marsh: 1987b: 2)[10] To prevent this abuse from happening, it was felt that a number of different safeguards should be put in place and providing the public with greater access to government information was seen as one such safeguard, as was the use of greater publicity, the establishment of regular elections and the promotion of a free press. (Birkinshaw: 1996)

Continuing in a similar vein, the second reason put forward for giving the public access to information, was that secrecy was a cause of inequality between the citizen and the State. A policy which defined the levels of access to government information was therefore needed to redress the imbalance between the State, which had access to a wide variety of information, and the private individual, who was required to supply the State with information, but who could only obtain information with the State's agreement. Once again the argument for having an access policy, was that government occupied a privileged position and it was only by providing the public with a similar level of access, that it could be held truly accountable. (Marsh: 1987b)

A third reason put forward for the public having access to government information, was that openness was essential for democratic government. The benefits of democratic government

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[9] Other commentators would also highlighted the dangers of secrecy within government, such as Woodrow Wilson, in his writings before he became President of the United States and Max Weber who examined the role of secrecy in bureaucracy. (Marsh: 1987b and Robertson: 1982)

[10] Originally cited in Bentham, J. (1843) 'On Publicity', In: J. Bowring (Ed.), *Works of Jeremy Bentham*, W. Tait: Edinburgh, Vol. 2, p. 310 – 317.

were highlighted by a number of political commentators, including John Stuart Mill[11] and Adam Smith.   Both of whom argued that democracy was the political system that gave individuals the greatest chance for self-development and self-fulfilment and that democratic government could only be achieved with a well-informed and free citizenry.   As a result of these ideas, the link between democracy and access to information was quickly established and continued to be developed further, so that access to information is now seen as a fundamental component of democratic government. (Birkinshaw: 1996)

Access to information was seen as an essential part of democratic government for a number of reasons.   Firstly, it was argued that government's, as elected bodies, took decisions in the name of the electorate and that the public could only hold their representatives truly accountable, if they had access to information about their decisions and the outcomes of those decisions.   In addition to this, access to information was also seen as creating better government.   Firstly, because it meant that more people, with a wider variety of views, were drawn into the decision-making process and secondly, because decision-makers would know that they were being properly scrutinised and that they would have to justify any poor decisions to the wider public. (Marsh: 1987b)   Access to information was therefore seen as being essential to the operation of the democratic process and for encouraging public participation in representative government.[12]

4.3.3   The development of government information access policies

With the adoption of democratic government in many countries throughout the world, attention has increasingly focused on the role information in supporting the participatory process. It has been widely accepted that in a democracy, there must be a flow of information from government to the people, so that they can assess its effectiveness and hold it accountable. This flow of information is fundamental to the workings of democracy and so specific policies have been developed that govern the ways in which information is made available. These policies, broadly speaking, fall into two categories. The first of these places the responsibility for deciding what information is made available to the public on the

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[11] This can be seen in a number of his essays including *On Liberty* and *Considerations   on Representative Government.*

[12] For further research and discussion into the relationship between information and democracy see the special edition of the Journal of the American Society of Information Scientists, Vol. 45, No. 6, 1994 which contains a number of articles which examine this problem, including that by Lievrouw and Dervin.

government. This approach has become known as official secrecy, as all information is classed as secret or at least confidential, until it is approved for release into the public domain, by a government Minister. The second approach gives the public a general right of access to information held by the government, subject to certain exemptions. This approach is usually enshrined in some kind of Freedom of Information (FOI) legislation and means that all government information can be made available to the public, unless the government proves that its disclosure would breach one of the exemptions.[13] (Moore & Steele: 1991)

Official Secrecy[14]

The 'official secrets' approach has, until very recently, been synonymous with the workings of British government, particularly during the last 150 years when a number of legal measures were introduced to control the flow of information to the public. These attempts by government to control access to information, were however, by no means new and could be traced back as early as the Fourteenth Century, when a breach of the King's confidence in relation to governmental matters, could have led to a charge of treason. Efforts to restrict access to government information would continue throughout the following centuries, but it was only in the late Nineteenth Century that this policy became enshrined in law. (Birkinshaw: 1996)

In 1889, the first Official Secrets Act (OSA) was passed by parliament, which allowed for the prosecution of any unauthorised disclosure of official information, under criminal law. (Birkinshaw: 1996) These provisions were strengthened further in 1911, when an updated Official Secrets Act was passed. Section 2 of this Act contained the widest prohibition, stating that anyone disseminating an unauthorised piece of government information, could be punished by up to two years imprisonment. This provision would remain in place for much of the Twentieth Century and was only revised in 1989, when a new version of the OSA listed

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[13] Although Freedom of Information legislation has been the primary instrument through which many countries have introduced greater access to official information, this is not the only way in which government's have tried to achieve this. In Great Britain, for example, information access policies were included in many individual pieces of legislation, before an overall FOIA was adopted. Likewise, an information access policy need not necessarily be laid down in legislation, but can be developed as part of a code of practice or an overall strategy to make more information available.

[14] This section provides a brief overview of the history of access to government information in Great Britain. For a more detailed discussion of the history of secrecy in Great Britain see Birkinshaw: 1996 or for a general discussion of the secrecy itself see Michael: 1979, Michael: 1982, Wilson: 1984 and Robertson: 1982.

just five types of information that would, in future, be covered by Section 2 of the Act.[15] However, even with these changes the policy of official secrecy would remain in place, with the release of 'non-secret' information by a government official still being punishable by disciplinary action or dismissal. The new 1989 Act therefore, did very little to actually weaken the overall principle of official secrecy, in relation to British government information. (Moore & Steele: 1991)

Changes were however, slowly appearing in other areas. Moves towards greater openness could be seen in individual pieces of legislation, such as the Local Government (Access to Information) Act 1985, which gave the public a right of access to local authority meetings and documents, the Access to Health Records Act 1990, which allowed patients to see their manually-held medical files, and the Environment Information Regulations 1992, which gave people access to government-held environmental information. All of these pieces of legislation slowly chipped away at the government's overall commitment towards secrecy. (Moore & Steele: 1991) In 1994, a further step was taken towards openness with the publication by the government of its *Code of Practice on Access to Government Information*. This was designed to promote greater openness within the British government, but still fell a long way short of being a fully blown freedom of information act. (Johnson: 1996) It would be another six years before this type of legislation was adopted in Britain[16] and the tables were finally turned on the country's long established policy of official secrecy.

Freedom of Information[17]

Outside of Britain, the trend in most Western democracies during the last forty years has been towards giving the public greater access to government information. Freedom of Information has therefore become an increasingly important concept, both theoretically and as a practical way of making information available. (Moore & Steele: 1991) Since the 1960's, Freedom of Information legislation has been adopted in France, Portugal, Greece, Spain, Norway, Sweden, Finland, Austria, Holland, Canada, Australia and of course, the United States. (Oppenheim and MacMorrow: 1997) The overall trend in relation to access to information,

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[15] These included information on security and intelligence, defence, international relations, information supplied in confidence by other governments and law enforcement.

[16] The UK's Freedom of Information Act was passed on the 30th November 2000.

[17] This section briefly examines the area of Freedom of Information. However, for a more detailed insight into this vast subject area see Birkinshaw: 1996, Marsh: 1987a, Michael: 1982 and Robertson:

can therefore, be seen to be moving away from the traditional restrictions of secrecy, to a far more open and participatory way of government, where information is made freely available and the onus is placed on the government to prove why information should not be disclosed.

Freedom of Information legislation can therefore be seen in a number of countries around the world and although there are minor differences in these individual pieces of legislation, they do, on the whole, tend to follow similar lines.[18] A number of key components of Freedom of Information can therefore be identified. Firstly, FOI usually gives people a right of access, to all files or documents held by the government, no matter in what form they are kept. Secondly, any person, not just citizens of that country, can make a request information and in most cases will not be required to explain how they will use it. Thirdly, some sort of time limit is usually included in the legislation, by which the government is supposed to have responded to a request.[19] Fourthly, in most cases a charge is made for the supply of the information[20] and finally, there is usually a right of appeal, either to the courts or an ombudsman, if a request for information is refused. (Oppenheim and MacMorrow: 1997)

Freedom of information legislation is usually seen as the centrepiece of government policy for making information available to it citizens. However, it has also become apparent that on its own, FOI legislation does not always result in the levels of access to information that had been expected. This has been seen in a number of countries including the United States where, following the enactment of its Freedom of Information Act (FOIA) in 1966, a number of limitations to the Act have emerged. For example, the US Congress, which passed the FOIA, specifically excluded itself so that many congressional records cannot be requested by

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1982, all of which introduce the overall concept of Freedom of Information and examine its implementation in a number of countries.

[18] The legislation adopted by the United States, in 1966, is often viewed as the archetypal example of a Freedom of Information Act and has been used by a number of countries, with some modification, as the basis for their own FOI legislation.

[19] This time limit is usually within two months. For example, in Canada government bodies must respond to a request within thirty days and in Australia within sixty days.

[20] Most governments, at the same time as introducing Freedom of Information legislation, have introduced a list of charges that will be made for answering requests. These charges for FOI requests are on the whole designed to cover the costs of reproduction In some countries this charge is made using a flat fee or by charging the actual cost of reproduction but in others, like the United States, a differential system of charging has been introduced, so that distinctions are made between charges made for information requested by commercial bodies and those who request information for educational or research purposes. (Birkinshaw: 1996)

members of the public under the Act. The use of certain exemptions in the Act has also been seen as a way of restricting access to information, particularly that held by the executive agencies and departments for whom the Act was primarily designed to cover. This has meant that the US FOIA has not always achieved the results that were originally anticipated following its enactment (Relyea: 1989)

4.3.4 Issues which effect information access policies

For most governments, the adoption of legislation or the development of an access policy, have been the primary ways in which the flow of official information to the public has been increased. However, as has been seen in relation to the US FOIA, the adoption of this type of policy does not always result in the levels of access to government information that had first been anticipated. In almost all cases where access policies have been introduced, it quickly becomes apparent that there is more to achieving access to information than simply giving people the right of access because of the large number of other issues that can affect this type of policy. These issues can be found in relation to both public and private sector information access policies, but as this thesis is concerned primarily with access to government information, it is on this area that the following section will focus. Issues which can be seen to affect access to government information, can be arranged into six general categories including:

- political issues;
- policy issues;
- economic issues;
- organisational issues;
- technological issues;
- information issues.

All of these can affect the way in which information is made available and so need to be examined, if the wider context of access to information is to be understood.

Political Issues

The first set of issues that need to be addressed in relation to information access are political issues. As has been seen from the previous discussions of secrecy and freedom of information, access to government information can be dramatically affected by political

issues. The basic arguments for encouraging access to information come from the field of Political Science[21] and are founded on a number of basic principles such as the creation of rights and duties, both for the state and the civil community.

The concepts of 'rights' and 'duties' are fundamental to political thought and particularly to the ideas of state and democracy. 'Rights' are usually seen as being the entitlement to carry out certain independent actions, or inaction, within the constraints of a community. (Held: 1991b) These rights, such as the civil right to freedom of speech and the political right of a secret ballot, [22] are what underpin democratic society, but having them also leads to the creation of duties. 'Duties' place communities under a moral or legal obligation to do something. Thus if the political right of representative government exists within a society, then people have a duty to take part in that democratic process.

Access to information is often affected by political issues because of its strong links to these basic rights and particularly those that are concerned with participatory government. As has already been seen in Section 4.3.2, access to information is usually seen as a key element of democracy, but is often dependent on the political institutions of the state, to ensure that it is put in place. Access to information can therefore be affected by how government perceives these basic rights and duties. There are a number of things that will affect how government views these rights and duties, such as political persuasion or its method of government and these can lead to significant variations in the decisions taken in relation to information. For example, in a totalitarian regime, access to information is usually be characterised by secrecy and censorship, whilst in a democratic government by openness and availability. However, even within the same kind of political regimes there can still be a great deal of disparity, as has been seen in the differences in access to information that have existed between Britain and the US. Political issues are therefore, fundamental to information access, as they can affect the most basic questions about it, such as the degree to which information will be made available to the public.

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[21] As has already been discussed in Section 4.3.2.

[22] Other rights include social rights to free and universal education, economic rights to a minimum income and reproductive rights. (Held:1991b)

Policy Issues[23]

After making its way onto the political agenda, the second group of issues that can effect information access, are policy issues. Once a decision had been taken by government to make more information available, then the policy created to achieve this will become part of a policy process, where each stage can effect its overall outcome and success. The first stage of this process is to identify the 'problem' issue, which in this case would be making more information available, and formulate a policy to address it. This would involve the development of specific proposals for an appropriate course of action that would deal with the policy problem. (Anderson: 1990) Several proposals to achieve this may be put forward, before a decision is finally made as to the one which offers the highest net benefit. All the decisions taken at this stage of the process will have a substantial effect on the eventual outcome of the information access policy, for example, the decision to choose a specific proposal, will effect the overall strategy to achieve the information access and its eventual success.

Once a decision had been taken to select one proposal from the different alternatives, then that proposal would then be developed further. At this point some of the proposal's original provisions will be accepted, some rejected and others modified.[24] This 'development' stage of the policy process will be strongly influenced by the different people and groups involved[25] and their particular values.[26] Again these decisions will have an important impact on the type of information access policy that is developed. Once this stage has been completed, the basic provisions of the policy are established but these will still be subject to further change as they are implemented. Policy implementation sees the policy moving from the political to the administrative sphere and the ways in which these administrative bodies deal with the policy, can lead to substantial changes in its overall effects. These changes result from a number of things including, the amount of influence that outside groups, like the courts, pressure groups and community organisations, have on the implementing body, the specific way in which the

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[23] This section provides a brief overview of the policy issues that can affect information access. These will be discussed further in Section 4.4.

[24] Many of these changes would be the result of bargaining and compromise by the different parties involved in the policy process. (Anderson: 1990)

[25] These could be politicians, public officials, private individuals pressure groups, charities or commercial organisations. (Anderson: 1990)

[26] These could be organisational, professional, personal or ideological. (Anderson: 1990)

policy is implemented[27] and the methods used to ensure compliance. All of these can have a substantial effect on the implementation of policy and therefore on its eventual outcome.

From this brief overview, policy issues can be seen to have a important effect on access to information, as every decision effects how that policy develops and performs. Most policy decisions are taken within the political sphere, so that issues such as party politics and the level of governmental policy-making can substantially affect what policy is developed.[28] However, these decisions can also be influenced by outside bodies, who are able to put pressure on the government and by administrative bodies, who take control of policy implementation. All the decisions taken by these groups will therefore effect the development of an information access policy and will influence the achievement of its overall objective of making more government information available.

Economic Issues

Having examined the influence that policy issues can have on information access, the third set of issues that need to be addressed are economic issues. Economic considerations have a significant impact on the adoption and development of most government policies and access to information is no exception. The creation and distribution of information is after all an economic activity that requires the use of other resources if it is to be successfully carried out. (Braunstein: 1989) These resources can be human or financial and governments, as the largest producers and collectors of information, expend these in vast quantities to fulfil their information functions. For example, in the UK, the Central Computer and Telecommunications Agency (CCTA) estimated in 1990, that government departments spent over half their administrative budgets on information activities. (Central Computer and Telecommunications Agency: 1990) The information functions carried out by government, therefore have a number of costs associated with them which, as with any other area of government policy, have to be properly evaluated, to make sure that resources are being used to their full potential.

One way of addressing some of the economic concerns arising from information access, would be to look at the costs and benefits of that policy, through the process of cost-benefit analysis (CBA). The implementation of any government policy will result in a number of

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[27] For example, is it strictly controlled from the top of the organisation or left to those at the bottom of the organisation to implement?

[28] i.e. decisions made at the international, national, regional or local level.

costs and benefits, many of which are tangible and easily calculated.[29] These costs and benefits can be seen to have varying effects on different sectors of society, so that when they are distributed broadly, the costs and benefits are felt by large numbers of people and when distributed narrowly, by small numbers of people.[30] (Anderson: 1990) By carrying out a process of cost-benefit analysis, the costs of a policy can be calculated and set against the benefits, so that the overall net cost or benefit of the policy can be seen. This analysis can also be used to help identify where the specific costs and benefits of a policy are falling within society.[31] (Parsons: 1995)

Cost-benefit analysis can be applied to a number of different information functions carried out by government. For example, it can be used to examine whether the benefits gained from the using a piece of information, outweigh the financial or human costs of collecting it. It can also be used to evaluate access to information by examining the costs and benefits that result from making information available to the public. In carrying out this type of analysis, one can examine a number of questions including:

- Who gets the benefit from this information?
- Who is paying for the collection of this information?
- Do the costs of making this information available outweigh the benefits?
- Are information resources being used effectively?
- Does the collection and dissemination of information resources provide value for money?
- What are the best methods of access?

The answers to all these questions are particularly important in the creation of a successful information access policy and can be used to develop that policy, so that information is made available to the public in the most efficient and cost-effective way.

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[29] Though this isn't always the case, some policies will have more 'symbolic' costs and benefits which are often intangible and so difficult to calculate. (Anderson: 1990)

[30] You can therefore have policies with broad benefits and broad costs, where most people pay and most people benefit, broad benefits and narrow costs, where small groups of people pay but most people benefit, narrow benefits and broad costs, where most people pay and a small number of people benefit and narrow benefits and narrow costs, where small groups of people pay and other small groups benefit. (Anderson: 1990)

[31] This of course is only the briefest of introductions into the study of cost-benefit analysis, an area of policy analysis which has both its proponents and critics. More information on CBA can be found in Parsons: 1995 and Layard & Glaister: 1994.

Organisational Issues

The fourth set of issues that can effect information access policies are organisational issues. Policies, whether in the public or private sector, all exist within an organisational structure but as no two organisations are completely the same, this can lead to substantial variations. Organisations can differ in terms of structure, operating styles, learning mechanisms, stakeholders, policy orientation and political persuasion, all of which can have an important effect on the way in which they implement policy and on that policy's overall success. [32] (Anderson: 1990)

Like any other policy, access to information can be affected by these organisational issues. For example, the structure of government will have an important effect on access to information, as this will dictate how decisions are taken and how policy is implemented. Organisational structure is usually examined using three different components: complexity, formalisation and centralisation. Complexity refers to the amount of differentiation that can be found within an organisation.[33] This is important as greater levels of differentiation require more effective levels of communication, co-ordination and control to implement a successful policy. The second, formalisation, refers to the levels of standardisation that are found within an organisation. Like complexity, this too can have a bearing on policy, as standardisation helps develop consistency across the organisation, both in terms of its objectives and in the way that policy is implemented. The third component is centralisation, which is concerned with the concentration of authority within an organisation.[34] Centralisation will affect who is in control of a policy and the way in which the policy is implemented within the organisation. (Robbins: 1987) In this brief examination, variations in organisational structure can be seen to lead to significant differences in the way in which an information access policy is adopted and implemented and as a result can have an important influence on its overall success.

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[32] There are, of course, many organisational issues that can influence the overall success of a policy. It is however beyond the scope of this thesis to examine them all and so this section will focus primarily on the issues of organisational structure and organisational learning to highlight this point.

[33] This differentiation can occur in various guises. It can be horizontal, referring to the number of different tasks performed by the organisation, vertical, referring to the number of hierarchical levels within the organisation, or spatial, referring to the location and distance between various parts of the organisation. (Robbins: 1987)

[34] The fewer the amount of people responsible for decision-making the more centralised an organisation is, likewise the more people there are responsible for decision-making the more decentralised an organisation is. (Robbins: 1987)

A second organisational issue that can effect the outcome of an information access policy, is organisational learning. The goal of organisational learning is to improve effectiveness by setting up a process through which an organisation can adapt to the changing environment and it is therefore an important way of updating policies within an organisation. It has been shown that people within an organisation build up their own cognitive structures[35] which determine how they react to certain situations and policies. Organisational learning therefore plays a key role in ensuring the success of different policies by influencing people's responses to that policy. (Jones: 1995) This is particularly important when the policy marks a substantial change from the past, such as a change from secrecy to openness in information access, as this would require a complete shift in the way that access to information was viewed across the organisation.

The process of organisational learning is linked to a number of other organisational issues that affect the successful implementation of policy, such as the role of stakeholders within an organisation. Stakeholders are those people who have an interest or 'stake' in an organisation,[36] such as the management and workforce, both of whom can have an important influence on the implementation of policy. For a policy to be successful, it is imperative that an organisation's stakeholders feel involved and that its aims and objectives are worthwhile. In relation to access to information, it is therefore particularly important that these people feel that the policy will successfully increase levels of access, that people will use it and that it will provide a practical solution to any problems that have previously been identified. Only then, will the stakeholders feel that they want to be part of the success of that policy and so be compliant with it.

These then are just a few of the organisational issues that need to be examined when implementing an information access policy, as all can have an important effect on its overall success. To reduce the effects of these issues on the policy, a number of questions need to be asked, including:

- How will the structure of the organisation affect the implementation of an information access policy?

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[35] Made up of their values, beliefs, preferences and expectations.

[36] These are usually described as being inside or outside stakeholders. In a commercial setting, inside stakeholders would include the shareholders, the managers and the workforce, whilst the outside stakeholders could include customers, suppliers, government, the unions, the community and the general public. (Jones: 1995)

- How will the operating style of the organisation affect the implementation of an information access policy?

- What learning mechanisms can be employed by the organisation to ensure the success of an information access policy?

- How can stakeholders be made to feel involved in this type of policy?

Only by answering these questions, can the risk of problems occurring in the implementation of this policy be addressed.

Technological Issues

The fifth set of issues that need to be examined in relation to information access, are technological issues. Changes in technology have, of course, always had an impact on the ways in which information can be accessed,[37] however, in the late twentieth century these developments have been more rapid than at any other period in history. The last forty years in particular, has seen dramatic changes in the development of computer and communications technology, including the introduction of the first mainframe computers for data processing, the development of the home PC, the invention of fibre optic cable, the launch of communication satellites and the introduction of Integrated Services Digital Network (ISDN) narrowband technology, all of which have had an significant effect on the way in which information is transferred and accessed. (White: 1998) Probably the most important development in recent years, however, has been the convergence of these technologies to form information communication technologies (ICT's).[38] (Martin: 1995)

ICT's emerged from the creation and connection of many different types of technology[39] which in turn, has shaped the way in which people access a number of things, including other people, services and information. In relation to people, for example, ICT's have provided new methods of communication that have gone on to influence who we meet, who we talk to

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[37] White, for example, traces this back as early as 1791, with the invention of the electric telegraph and continues to highlight a number of technological developments throughout the next century that radically changed the way in which information could be accessed, such as the invention of Morse code in 1848 and the creation of the telephone in 1876. (White: 1998)

[38] A full discussion of the development of ICT's is beyond the scope of this study, but for more detailed discussion of the subject area see Martin: 1995 and Dutton: 1999.

[39] ICT's include for example computers, television, mobile phones, networks, video, the internet and email.

and who we get to know. ICT's have also shaped the way in which we consume products and services, changing both how we use them and who we buy them from and finally, they have shaped the way in which we access information, changing not only the methods by which information can be obtained, but also the type of information that is made available. This means that a range of information, from voice and data to images and video, can now be accessed at any given time and place. (Dutton: 1999)

These changes have also been seen in government, where the growth in the use of computer and communication technology has radically altered the ways in which information is collected, maintained and disseminated. Government's have increasingly adopted electronic systems to manage their information holdings, which has led to fundamental changes in the ways in which information is accessed by the public.[40] In addition to the traditional paper-based government publications, information can now be accessed in the form of e-mails, word processed documents, spreadsheets, relational databases, videos and pictures and is available in a variety of different media including floppy disks, CD ROMs and videos. ICT's have therefore played an important role in increasing both the amount and type of information that is available and in changing the way in which it is accessed. This has meant that government information can be used far more effectively and by far more people, than has ever previously been possible. (Congress House of Representatives Committee on Government Operations: 1989)

From this brief outline, technology issues can be seen to have had an important effect on information access policies and will continue to do so in the future. The use of technology, has resulted in a number of positive benefits for information access, as has been seen by the employment of ICT's by governments and organisations around the world. However, many of these benefits can only be achieved if ICT's are part of an overall policy to support information access and to do this, a number of fundamental questions need to be examined. These include:

- How can technology be best employed to support access to information?
- How can technology be employed to make an information access policy easier to run?
- How can technology be employed to make information access more cost effective?
- How can technology be used to make sure that information is delivered in a timely way?

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[40] See for example the United States Congress, Office of Technology Assessment: 1988 or Hernon & McClure: 1993.

- How can technology be made more user friendly?

- How can technology be employed to link different information holdings together? (Congress House of Representatives Committee on Government Operations: 1989, Relyea: 1989 and DeSanti: 1993)

Only by addressing these questions can the issues surrounding technology and information access be fully explored and steps taken towards creating a more successful information access policy.

Information Issues

Having examined many of the wider issues that effect information access policies, the final group of issues that need to be examined are those that relate specifically to information itself. As has already been seen in this section, the main objective of most government information access policies, and particularly those concerned with freedom of information, has been to give people a right of access to information. However, it has also been realised that there is more to achieving access to information than giving people this right and so many of these informational issues have arisen in response to the more practical questions that need to be addressed when making information available.

There are a number of key informational issues that can affect access to government information. The most important of which are concerned with the management of the information resource and the way in which information is made available to the public. Most information access policies give people a right of access to information, but the key to their success is that people can get hold of the information that they need, at the right time and at the right cost. The benefits to be gained from information use therefore come from it being made available in an effective and timely manner and these can only be achieved if it is properly managed and disseminated. The effective management and dissemination of information is therefore crucial to achieving a successful information access policy.

Information management can be seen as a key issue that effects information access.[41] In the last forty years, it has increasingly been recognised that information is a resource, that like

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[41] The development of effective information management techniques that can be used to support an information access policy will be discussed further in Section 4.5 and the relationship between information access and information resources management will be examined in more detail in Section 4.6.

any other government resource, needs to be properly managed if it is to be used effectively. This belief has led to the creation of a new approach to information management, called information resources management (IRM). (Bergeron: 1996) An IRM programme manages all the different aspects of the information resource, from information and technology to finances and people, through one integrated system. This type of programme will therefore play a key role in determining information access as it will influence what information is collected, how it is managed, what media it is stored in, what technology will be used and when it will be destroyed.

A second information issue that can affect access, is the type of access policy developed and the ways in which information is made available to the public. There are a number of ways in which government information can be made available to the public; the first is through an information access policy; the second through a information dissemination policy, and the third through a tradeable information policy. There a number of differences between these policies, the former usually provides information following a request from a member of the public, the second usually refers to the legally mandated distribution of information to the public and the latter, relies on the private sector to make certain government information available. Increasingly, governments are focusing on information access and tradeable information policies to make information available to the public rather than dissemination policies. This means that people have to request information from government or purchase it from the private sector, rather than rely on the government to automatically place it in the public domain. The type of 'access' policy, can therefore effect the type of information made available, [42] the way in which it is made available, the way it is distributed, the time it takes for it to be accessed and the charges levied on access[43]. (Caudle & Levitan: 1989)

Despite the moves made by most democratic governments to give their citizens a right of access to information there are still a large number of issues that need to be addressed to create a successful information access policy. These issues can be assembled into six groups including political issues, policy issues, economic issues, organisational issues, technological issues and information issues. Although all of these issues can effect information access, it is beyond the scope of this thesis to examine them all in detail and so instead the following sections will now focus on two, that were identified from the case study as being of particular

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[42] For example, whether the information is basic data or had value added.

[43] For example, are the charges the standard cost of reproduction charges as is found in relation to most FOIA or commercial charges made for private sector value added services?

importance to the development of information access policies. These were firstly, policy
implementation and secondly, information resources management

4.4   Information Policy Implementation

In the previous section, a number of issues were identified that could affect access to
government information, some of which related to the policy itself. Once a decision had been
taken by government to make more information available, then steps would be taken towards
developing a policy that would achieve this objective. These steps can be seen as a process
and every decision taken in that process could affect what policy is adopted and the way it is
developed and so could have a significant impact on the outcome of that policy. The
following section will now examine this policy process, focusing particularly on the
implementation stage, which had been identified, from the case study, as a key stage affecting
the success of information access policies. However, before turning to examine these two
things, it will firstly outline the general concepts underpinning the study of public policy and
the use of these concepts in the study of information policy.

4.4.1   Definitions of public policy

In the last fifty years, the study of public policy has become an increasingly important
mechanism for understanding how government works and interacts with society. However,
before this study examines some of the methods that have been developed within the field to
investigate government policy, it must first consider what is meant by the term 'public
policy'. It is quickly apparent, from a review of the literature, that there are numerous
definitions of the term 'public policy' available.[44] These definitions vary considerably, but
tend to focus on a number of ideas which can be seen as being fundamental to public policy.
Before examining these ideas, however, it must also be noted that a number of writers view
'public policy' as two concepts, that of 'public' and 'policy', which need to be examined
separately before they are addressed together. Parsons argues that this is because the
meanings of both concepts have undergone considerable change and so it is useful to examine
them individually so that their precise meanings can be ascertained.[45] He then goes on to
define 'public' as being 'that sphere or domain of life which is not private or purely

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[44] As Anderson comments 'Sooner or later, it seems that almost everyone who writes about public
policy yields to the urge to offer a definition, and does so with greater or lesser success ...' (Anderson:
1990: 4)

[45] This examination should take account of both their historical and modern meanings.

individual, but ... that dimension of human activity which is regarded as requiring governmental or societal regulation or intervention or at least common action'. (Parsons: 1995: 3) Whilst the term 'policy' is described as being an 'attempt to define and structure a rational basis for action or inaction.' (Parsons: 1995: 14)

This section will now examine three definitions of public policy that are widely used within the field. The first comes from Dye, who describes public policy as:

'whatever governments choose to do or not to do' (Dye: 1978: 3)

This definition, is in many ways too broad as it incorporates just about every aspect of government and does not distinguish between trivial or significant decisions, but despite this, it does offer a number of useful insights into public policy. Firstly for example, it shows that public policy is clearly about government and the actions taken by government[46] and secondly, it shows that public policies involve governments making a choice either to do something or to do nothing. (Howlett & Ramesh: 1995)

The second definition comes from Jenkins who defines public policy as:

'a set of interrelated decisions taken by a political actor or group of actors concerning the selection of goals and the means of achieving them within a specified situation where those decisions should, in principle, be within the power of those actors to achieve.' (Jenkins: 1978: 15)

In this definition, Jenkins assumes that policy making is a process, that consists of a series of interrelated decisions taken over a period of time. He suggests that the capacity of the government to achieve those decisions, also has a significant impact on the type of decisions that it takes. Finally, he sees policy as being goal orientated, so that public policy is a decision taken by government with a specific goal and a means of achieving that goal. The means that the policy can then be evaluated against that goal to measure its overall success. (Howlett & Ramesh: 1995)

The third and final definition comes from Anderson, who describes public policy as:

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[46] Decisions taken by non-governmental groups, whilst influencing government, do not constitute public policy. (Howlett & Ramesh: 1995)

'A purposive course of action followed by an actor or set of actors in dealing with a problem or matter of concern.' (Anderson: 1990: 5)

This definition highlights two other important aspects of public policy. The first is that public policy is the result of many decisions, taken by different people throughout an organisation and the second, that government action usually results from an idea, real or not, that there is a problem or concern that needs addressing. (Howlett & Ramesh: 1995)

From these definitions a number of key ideas can be seen to underpin public policy. These are, firstly, that public policies are those developed by government agencies or government officials. Secondly, that policy is a purposive course of action to accomplish a specified goal, rather than a random occurrence. Thirdly, that public policies are made up of a series of decisions or patterns of action, rather than any one decision. Fourthly, that public policies usually result from a call for action on an issue from actors outside of government. Fifthly, that public policy is about what governments actually do, rather than what they say they will do and finally, public policy can be positive or negative, so that it can take the form of positive action to deal with a particular issue or problem or negative inaction, where it is decided that nothing should be done. (Anderson: 1990)

4.4.2 The study of public policy

Public policy, has in recent years, become an area of research carried out across the whole of social science. What was once the domain of political scientists, has, over time, become increasingly multidisciplinary, as other academic fields have also sought to study and understand the activities of government.[47] This has resulted in a variety of people studying public policy, all of whom have different reasons for studying it[48] and different objectives which they hope to achieve.[49] There are however, still areas of commonality that are shared

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[47] These academic disciplines include political science, philosophy, economics, sociology, psychology, geography, environmental science and information science, to name but a few. (Parsons: 1995)

[48] Public policy can, for example, be studied for scientific reasons to encourage greater understanding of the way in which public policies are developed or implemented, for professional reasons, so that practitioners can gain a greater understanding of the different policy alternatives available for the solution of different problems and for political reasons, so that governments can adopt favourable policies that will achieve the 'right' goals. (Anderson: 1990)

[49] Dye, for example, identified a number objectives which he hoped to achieve as a political scientist through the study of public policy. These included the description of the content of public policy, the assessment of the impact of environmental forces on public policy, the analysis of the effects that

by these groups. Parsons, for example, identifies a number of concerns that are shared by almost all policy analysts. These include concerns about problems and the relationship of public policies to these problems, concerns with the content of public policies, concerns with what decision-makers and policy-makers do or do not do and concerns with the consequences of policy in terms of outputs and outcomes. (Parsons: 1995)

The number of academic disciplines studying public policy has meant that the field has increasingly been characterised by a focus on different policy sectors. Some of these key sectors include:

- Health policy;
- Education policy;
- Transport policy;

- Economic policy;
- Defence policy; and
- Housing policy.

Research into public policy has tended to address these individual policy areas, with most academic disciplines concentrating on their own particular area of expertise. This has resulted in each one developing as a specialised research community, with its own specific problems and policies. However, these still have the benefits of links to the wider public policy field, where they are able to draw on the ideas and work carried out in other policy sectors. (Parsons: 1995)

4.4.3   Information policy and public policy

One area of policy that has gained increasing recognition in recent years, has been the area of information policy (IP). The origins of modern day information policy are usually traced to the beginning of the 'cold war' and particularly to US concerns about the space race following the surprise launch of Sputnik, by the USSR, in 1957.[50] These concerns led to a review examining the use of scientific and technical information in the United States and the

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different institutions and political processes had on public policy, the analysis of the consequences of public policy on the political system and the evaluation of the impact and consequences of public policy on society as a whole. (Dye: 1978)

[50] There are of course some writers who would trace the origins of information policy back much earlier than this. Some writers, for example, identify the development of the first printing press and the enactment of laws to regulate the sale of printed material in the Fifteenth Century as the beginnings of information policy. (Eisenschitz: 1993) However, for the most part modern information policy is traced to the report of the US Weinberg Committee.

resulting report, by the Weinberg Committee, has been cited by many writers as the beginning of modern day information policy. (Burger: 1993, Browne: 1997a, Rowlands: 1998a) The 1960's saw information issues being pushed up the political agendas in most western countries and meant that for the first time information policy began to emerge in direct response to information issues, rather than to other problems like national security. (Browne: 1997a) Information policy would continue to develop throughout the 1970's and 80's as various technological advancements changed the ways in which information was used and made available. So that by the 1990's information policy was an integral part of most western political programmes and these governments were looking at the positive benefits that could be gained from information through the development of the 'information society'. (Browne: 1997a)

The heightened exposure received by information issues has meant that information policy has become the concern of a wide-range of academic researchers. Questions that were once the sole concern of the library and information science community, are now addressed by a variety of academic disciplines.[51] However, whilst research into information policy has become increasingly multidisciplinary, it has for the most part remained discipline-bound. This, it has been argued, was due to information policy research being technology-driven with different disciplines entering the field by examining policies relating to their own specific area of expertise so that librarians, for example, were concerned with print media and computer scientists with technology matters. As a result of this, each field has carried out their own research into their own particular area of concern, using their own theoretical tools and methodologies.[52] (Rowlands: 1996) More recently this has led, to a number of writers calling for the development of new approaches to information policy research.[53] Many of these writers recognised that if the field of information policy was to develop, then it needed to become far more interdisciplinary and identify new research tools and methodologies that could be used. This call to expand the theoretical and methodological foundations of the field, has led a number of writers to turn to the wider field of public policy in an attempt to identify new approaches that could be used in information policy research.

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[51] Braman, for example, identified more than forty academic fields that dealt with information studies, (Braman: 1989) whilst Burger stated that information policy evaluation needed the skills of several academic disciplines including 'economics, law, political science, public administration, sociology, public policy, management science and information science' (Burger: 1993: 90)

[52] Rowlands for example, highlights the predominance of classification-based approaches to information policy research among the library and information science community. (Rowlands: 1996)

The relationship between information policy and public policy is becoming increasingly well established, with information policy often being seen as a separate area within the wider policy field. Information policy analysts can also be seen to share many of the same concerns as other policy analysts, such as what are the contents of policies? what are the relationships between policies and problems? and what are policy-makers doing or not doing in relation to policy? However, despite these basic links, it is only in recent years that any real attempt has been made to firstly examine, the relationship between information policy and public policy, secondly, to establish where information policy fits in within the wider public policy field and thirdly, to identify from the wider public policy field new tools and methodologies that could be used in the examination of information policy.

Both Rowlands and Browne have carried out examinations of the information policy literature to build up a picture of information policy research. Rowlands, for example, highlighted what he saw as five main approaches to information policy research.[54] He identified a number of limitations in the methodologies that they employed and argued that there was a need for more value- and paradigm-critical methodologies to advance information policy research. (Rowlands: 1996) These conclusions were also backed up by Browne, who building on this work, examined the maturity of the information policy field by comparing eight different approaches used in mainstream policy research, with those used in the examination of information policy. These eight approaches included studies of policy content, studies of policy process, studies of policy outputs, evaluation studies, information for policy making, process advocacy, policy advocacy and analysis of analysis and are outlined further in Table 4.1. By comparing these two areas, she found that whilst information policy employed many of the same approaches as the wider public policy field there were still a significant number of gaps and argued that until these gaps were addressed, information policy would be prevented from being part of mainstream policy research. For example, in the eight approaches that she identified, she found that whilst studies of policy content,[55] information for policy making,[56] policy advocacy and analysis of analysis could be found in the information policy field,[57] studies of evaluation studies, process advocacy, policy outputs and the policy process were

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[53] See for example Rowlands: 1996 and Browne: 1997a.

[54] An examination of Rowlands five approaches to information policy research can be found in Appendix 6.

[55] The studies of policy content included what Rowlands identified as classification-based approaches and issues and options approaches.

[56] The studies of information for policy making included what Rowlands saw as forecasting and scenario-building.

[57] Though in some cases, the use of these approaches was still very much in its infancy.

still largely under-utilised. She therefore, like Rowlands, concluded that if the field of information policy was to gain a broader intellectual base and become part of mainstream policy research, then it would have to adopt more varied research methodologies in the future. (Browne: 1997b)

Table 4.1   Browne's eight categories of policy research

Type of Approach	Definition of Approach
Studies of policy content	These studies focus on the origins, intentions and operations of specific policies and are usually descriptive in approach. These form the dominant category of research in information policy.
Studies of policy process	Studies of the policy process in the real world tend to focus on the actions of the participants. The aim to describe the nature of policy making and are usually carried out using case studies. This is a very under-utilised approach to information policy research
Studies of policy outputs	Studies that usually focus on what government actually delivers, rather than what it promised or legislated for. These types of studies are usually based on quantitative analyses. Not used in information policy research.
Evaluation studies	These studies are usually concerned with whether the implementation of a policy has led to the required outcomes. No real body of work within the information policy field that systematically evaluates the outcomes of information policy.
Information for policy making	This category includes research based information and advice designed to assist policy makers in decision-making and policy formation. This category of research can be found within the information policy literature, but mainly comes from North America.
Process advocacy	This category is about changing the processes of policy making understanding how the policy process works. Some research has been carried out in the information policy field examining concerns about the way in which information policy is made.
Policy advocacy	In these studies, research is directed at promoting the adoption of a particular policy. Studies of this kind can be found in the information policy literature.
Analysis of analysis	Studies that deal with thinking about the field itself. Research of this nature is still in its infancy in relation to information policy.

(Adapted from Browne: 1997b: 341 – 342)

In both the studies carried out by Rowlands and Browne, a variety of approaches were identified from the general public policy literature, as being of benefit to the information policy field. A number of these approaches were linked to the policy process and these were identified by both Rowlands and Browne, as being of particular use to information research. This thesis intends to draw on a number of policy process approaches that were highlighted in Browne's eight categories of policy research and will use these approaches to examine the case study, in an attempt to gain a greater understanding of how information access policies are implemented in the real world. In employing this process model an evaluation will then be carried out of the case study, to see if the implementation of the IPC registers has resulted in the required outcomes and if not, to analyse why these have not occurred. This thesis therefore aims to advance the study of information policy, by using the policy process approach to investigate and evaluate the implementation of information access policies.

4.4.4 The policy process

Although the process-orientated approach has rarely been employed in the analysis of information policy, it is well established as a research tool in the wider field of public policy, where it has been used by researchers to increase their understanding of the dynamics of policy-making.[58] This approach was first proposed by Lasswell, who designed what has now become known as the 'staged model' of the policy process. This model, which has since been widely adopted and modified within the policy field, has become one of the dominant frameworks for the analysis of policy, as it enables analysts to build up a detailed picture of policies over a certain period of time and examine the effects of internal and external factors both on the policy and the process itself. (Parsons: 1995) There are a number of models of the policy process available in the literature, most of which are based on the assumption that policy results from an issue following a processual path through the political system. This path is made up of a series of stages which usually incorporate problem identification, policy

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[58] Trauth was one of the first people to use this type approach in the information policy field, when she employed a systems approach to information policy research. This employed an INPUT – PROCESS – OUPUT (I-P-O) model, which enabled information policy to be viewed as a process (such as the storage and transmission of information) rather than as a thing (such as technology). She argued that by using this approach, examinations could be carried out into the functions and objectives of the policy rather than the issues that related to specific pieces of technology. This framework thereby enabled her to employ a more integrative approach to information policy analysis. (Trauth: 1986)

formulation, policy adoption, implementation, evaluation and eventual termination.[59] A
representation of this model can be found in Figure 4.1.

Figure 4.1   The policy life cycle: a 'stagist' or process approach to policy-making

Problem

Evaluation

Problem definition

Identifying alternative
responses/solutions

Implementation

Evaluation of Options

Selection of policy option
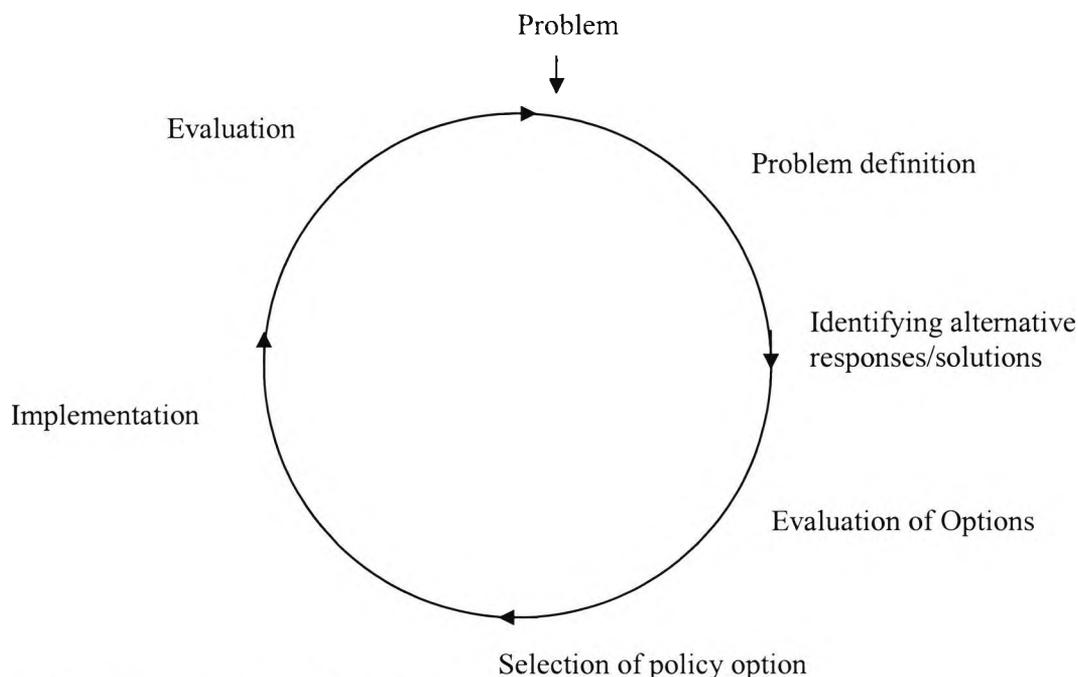
(Taken from Parsons: 1995: 77)

From this model, one can see that a problem enters the policy process once it has been
identified. This problem is then defined and policy-makers identify a number of alternative
responses or 'solutions'. These 'solutions' are then evaluated, where they can be rejected,
modified or accepted, before one option is finally chosen. In theory this chosen option would
offer the maximum net benefit, however in reality it may be chosen for other reasons such as
cost or convenience. Once a policy option has been selected, the implementation process then
begins, followed at the end by a period of evaluation. This evaluation process will be used to
examine a number of things including if the policy has achieved its original objectives, if it

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[59] However, not all staged models adhere to the same stages. When examining different process
models there are often a number of subtle differences between them. For example, Anderson puts
forward a simplified model of the policy process which incorporates five stages including problem
identification/agenda formation, formulation, adoption, implementation and evaluation. (Anderson:
1990) Whilst Hogwood and Gunn, use a more complicated process model which includes nine stages
of deciding to decide (issue searching or agenda setting), deciding how to decide (issue filtration), issue
definition, forecasting, setting objectives and priorities, options analysis, policy implementation,
monitoring and control, evaluation and review and policy maintenance, succession and termination.
(Hogwood and Gunn: 1984). Other examples can also be seen in Jenkins: 1978 and Jenkins: 1993.

led to any unforeseen outcomes and if it offered value for money. These results would then be used to identify any problems with the policy, so that adjustments can be made at the other stages or if necessary the policy can be rejected and a new option designed. The results of this evaluation process thereby feed into another cycle, as problems are once again identified and enter the policy process.

The benefit of employing the stagist approach to the analysis of public policy, is that it allows a rational structure to be applied to the policy-making process and in doing so, helps to reduce the complexity of policy-making. This means that the researcher is able to draw attention to the various activities carried out, both within the process as a whole and at each individual stage and this in turn, allows them to examine the effects that various decisions, actors and environmental factors have on the policy. The use of the stagist approach does however, have its critics who have identified number of limitations with the framework. For example, it has been argued that the 'stagist' model creates a somewhat artificial view of policy-making as in the real world policy-making is not simple and neat, but messy and complex, due to the large number of actors involved and the ever-changing political environment. Similarly, the process itself is not as clear cut as is suggested in the diagram. This is because the dividing lines between the stages are artificially imposed and policy makers are unlikely to follow such a sequence of events. For example, the implementation of a programme will often result in further policy making being carried out, as bureaucrats attempt to manipulate the policy to their own ends.[60] Nonetheless, as long as these limitations are understood, the stagist model can still prove to be a valuable heuristic device, that allows the investigation of various aspects of policy-making. (Hogwood and Gunn:1984, Jenkins: 1978, Sabatier & Jenkins-Smith: 1993 and Parsons: 1995)

In examining the literature, the process model can be seen in much of the research carried out in the field of policy studies. However, when looking at its use in relation to information

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[60] Sabatier & Jenkins-Smith identify a number of other limitations with the stagist model including: that its not a causal model as it lacks any identifiable forces that drive the policy process or activity within each stage; it does not provide a basis for empirical hypothesis testing; it has a built in top-down focus that focuses attention on legislators and neglects other 'street level' players; it doesn't taken account of the fact that policy usually involves multiple cycles at various levels of government and finally, it fails to integrate policy analysis and policy learning into the whole of the policy process, instead concentrating it mainly in the evaluation stage. (Sabatier & Jenkins-Smith: 1993)

policy analysis, it quickly becomes clear that this is still very much in its infancy.[61] This thesis intends to build upon the small body of work that has already used the process model for information policy research, by using it to examine information access policies. The use of this framework allows research to be carried out into each stage of the policy process, so that an information access policy can be examined from its identification as a problem issue, through to its implementation and eventual evaluation. The examination of the whole of the policy process is, however, beyond the scope of this study and so instead this thesis will use the 'stagist' model to focus specifically on the implementation phase, which was identified in the case study as being a key stage in the development of information access policies. It is intended that the use of this framework will lead to a more detailed understanding of information access policies and with its focus on policy implementation, on the practical ways in which information is made available.[62]

4.4.5   Policy implementation

In the first studies of policy-making, attention focused on the early phases of the policy process and particularly on the identification of solutions to problems and the evaluation of these solutions. Once a solution or response had been adopted, policy was seen as having been 'made' and what happened after that, was of little concern to political scientists. This would change, however, in the 1960's, when it became apparent, both in the United States and Europe, that the introduction of a number of important policy measures had brought about little change and that governments were actually far better at legislating for change, than there were at achieving it.[63] This recognition, led to the identification of a 'missing link' or 'implementation gap' between policy-making and policy outcomes and marked something of a turning point in policy analysis, as it led to the realisation that policy-making did not come to an end when a policy was approved, but continued throughout the rest of the process. This idea was given further weight, by the publication of the seminal study into implementation by Pressman and Wildavsky in 1973. This led to a wave of further implementation studies so that by the end of the 1980's, the study of implementation was firmly established within the field of public policy and two dominant frameworks had emerged for analysis. These

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[61] There are very few writers that have applied a policy process methodology to information policy as was outlined in the previous section. Those that have include Trauth: 1986, Rowlands & Turner: 1997 and Turner: 1999)

[62] This will be examined further in Section 3.8, which outlines a model to promote the better understanding of information access policies.

frameworks, the top-down and bottom-up approaches to implementation, will be examined in more detail in the following section, but before this examination is carried out it is first necessary to establish what is meant by policy implementation. (Hill: 1981, Hogwood & Gunn: 1984, Parsons: 1995, Hill: 1997)

There are many definitions of implementation available in the literature. The most widely used is that by Pressman and Wildavsky who defined implementation as the:

> 'process of interaction between the setting of goals and actions geared to achieving them.' (Pressman & Wildavsky: 1973, xv)

A further definition is offered by Jenkins who described the study of implementation as:

> 'A study of change: how it occurs, possibly how it may be induced. It is also the study of the micro-structure of political life: how organisations outside and inside the political system conduct their affairs and interact with each other; what motivates them to act in the way that they do, and what motivates them to act differently.' (Jenkins: 1978: 203)

Implementation can therefore be seen to be, the process by which a policy is put into effect or the actions taken to achieve a policy's goals. In many cases policies, even once adopted by government, will only exist in rudimentary form and so will require further development, or policy-making, before they can be successfully put into effect. In examining implementation, attention is therefore focused on the different actors and organisations that are responsible for this development, the ways in which these actors take decisions, the ways in which they interact with one another and the techniques and procedures that they use, to put a policy into effect. (Anderson: 1990)

In most Western states, public policy is implemented by the administrative agencies that are responsible for the day-to-day running of government. Research has shown that although these administrative agencies are not the only actors to effect policy implementation, they are

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[63] These so-called policy 'failures' could be seen in the areas of urban regeneration, employment, pollution control and land development. (Hogwood and Gunn: 1984)

often the most influential.[64] This is because they are given large amounts of discretion by the government, as to how they develop and carry out these policies, often because the legislative process has been unable to precisely define them due to conflicting interests, lack or time or the need to maintain flexibility. This lack of definition means that when an administrative agency takes responsibility for a policy, there is often little practical detail set out and as a result of this, they are often given a broad mandate to develop the policy further. This of course also means that administrative agencies have the power to change policies and do not always implement them, in the way in which policy-makers had originally intended. (Anderson: 1990)

Once an administrative agency has developed the practical details for implementing a policy, these then need to be put into effect and as with other areas of the policy process, this phase of implementation can result in significant changes occurring to the policy. These changes can result from the type of administrative agency implementing the policy,[65] the way in which that agency makes decisions[66] and the techniques it employs to carry out the implementation. The aim of nearly all policies is to get people to act in accordance with a prescribed set of rules or goals and so one of the main aims of the agency is to ensure compliance with these rules. Administrative agencies can employ a number of techniques to achieve this compliance, including voluntary standards, inspection, loans, subsidies and benefits, licensing, contracts, taxation and sanctions. Some of these techniques are 'sticks', others are 'carrots' and agencies may employ them singly or in different combinations to increase levels of compliance with a specific policy and achieve the policy's goals. (Anderson: 1990)

From this brief summary of policy implementation, a number of variables have been identified that can effect the way in which a policy is implemented and the eventual outcomes of that policy. As a result of this, greater understanding of the implementation stage and particularly the ways in which these different variables can effect policy is important, if more successful methods of policy implementation are to be developed. As of yet, little work has been carried out into the effect of these variables on the implementation of information policy, but in the wider field of public policy, there are a number of models that have been

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[64] Other actors that can effect the way in which policy is implemented include the legislature, the courts, pressure groups and community organisations. These bodies can affect implementation directly or by putting pressure on the administrative agency involved. (Anderson: 1990)

[65] Differences in structure, operating style, political support, expertness and policy orientation will all affect the way in which an administrative agency will implement a specific policy. (Anderson: 1990)

designed to examine the implementation process and explain the variations in policy outcomes.

4.4.6   Frameworks for the investigation of policy implementation

Following the recognition, within the field of public policy, of the importance of implementation process to the overall outcome of policy, a number of models have been developed for use in the study of policy implementation. These frameworks fall into two main categories. The first of these has become known as the top-down model of policy implementation and is based on many of the same ideas as the rational approach to policy-making. Whilst the second framework is known as the bottom-up model and can be linked to the bureaucratic approach to policy-making.

The top-down model of policy implementation

Research into policy implementation, emerged as a result of the failure of a number of government policies to achieve their aims and objectives, in the 1960's. This led a number of academics to realise, that implementation could have a significant impact on policy outcomes. Many of the early studies into policy implementation were therefore concerned, with looking at the implementation of specific programmes and examining why these were failing to achieve their policy goals. Pressman and Wildavsky, in one of the first of these studies, examined the success of an economic development programme in Oakland, California. They highlighted the failures of previous studies to evaluate the problems that arose during implementation and so began to focus specifically, on this stage of the programme.[67]

In carrying out their study, Pressman and Wildavsky assumed that policy was a 'hypothesis containing initial conditions and predicted consequences.' (Pressman and Wildavsky: 1973: xiv) They argued that 'If X is done at time t^1, then Y will result at time t^2.' (Pressman and Wildavsky: 1973: xiv) Implementation was therefore the interaction between the policy's goals and the actions taken to achieve them.[68] In light of this, Pressman and Wildavsky argued that implementation was about the chain devised to put policy into effect and

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[66] Differences in decision-making such as the strength of the hierarchy and the roles of secrecy and bargaining within the organisation can also affect the way in which policies are implemented.

[67] Other early studies that focused on policy implementation, included that by Derthick, who examined the implementation of an urban development programme.

[68] This can be seen in their definition of implementation set out in Section 4.4.5.

particularly about the linkages in that chain between different organisations and departments. If these organisations and departments failed to co-operate, then deficits would occur in the chain, that would culminate in significant problems in the implementation of that policy. To achieve successful implementation, Pressman and Wildavsky therefore argued that a top-down system of control was required, where goals were clearly established and understood by the various agencies involved, where sufficient resources were made available and where a good chain of command was established, with the capacity to co-ordinate both resources and agencies to make sure that they performed the required tasks, at the right time. (Pressman & Wildavsky: 1973, Parsons: 1995 and Hill: 1997)

The Pressman and Wildavsky study established the 'top-down' view of implementation which would later be adopted by a number of writers within the public policy field. Many of these writers would attempt to identify what they saw as the key variables affecting policy implementation and use these to create an ideal situation for implementation.[69] Hogwood and Gunn, for example, set out what they saw as ten preconditions necessary for 'perfect' implementation.[70] These were:

- That circumstances external to the implementing agency do not impose crippling constraints;

- That adequate time and sufficient resources are made available to the programme;

- That the required combinations of resources are made available;

- That the policy to be implemented is based on a valid theory of cause and effect;

- That the relationship between cause and effect is direct and that there are few, if any, intervening links;

- That there is preferably a single implementing agency or if not then the dependency relationships between agencies must be at a minimal;

- That there is a complete understanding and agreement of the policy objectives;

- That tasks are fully specified and carried out in the right sequence by the agencies involved;

- That there is perfect communication and co-ordination between the various agencies involved;

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[69] Writers who continued to develop the top-down approach to policy implementation included Christopher Hood: 1976, Lewis Gunn: 1978, Sabatier and Mazmanian: 1979, Hogwood and Gunn: 1984 and Andrew Dunsire: 1990.

[70] This was an elaboration of the ideas first set out by Gunn in 1978.

- That those in authority can demand and obtain perfect compliance. (Hogwood and Gunn: 1984: 199 – 206)[71]

This list epitomises the rational approach employed in top-down theories of implementation. This interpretation sees policy implementation as a rational process, whereby the fulfilment of certain conditions can lead to policy success. In this approach the policy goals or 'ends' dictate the 'means', or the choice of tools and methods that will be employed to achieve these goals. The top-down approach draws heavily on the view that policy is essentially a planning activity, whereby successful implementation can be achieved by employing the right strategies and tools. By treating implementation as a planning activity, policy-makers can make sure that tasks are set out in precise detail and that adequate time and resources are made available for their completion. Policy-makers can then concentrate on setting up methods of control that enable them to co-ordinate these tasks and get different agencies to carry out them out in the right way and at the right time. Implementation success is therefore based on choosing the right strategies and instruments and controlling the way in which these are put into operation, so that the room for conflict or deviation is minimised and policy goals are successfully achieved. (Parsons: 1995, Hill: 1997 and Rowlands and Turner: 1997)

The top-down approach has been seen as a useful tool for generating greater understanding of the ways in which policy is implemented and how policy objectives can be successfully achieved. However, it has also been subject to a number of criticisms.[72] It has been argued that the fundamental flaw in top-down models is that they always start from the perspective of the decision-maker and tend to neglect the roles of other actors. As a result of this, they are unlikely to examine the ways in which street-level bureaucrats or local implementing officials can divert a policy for their own ends. Secondly, top-down models have been criticised for being difficult to use in situations where there is no dominant policy, but a multitude of government directives and actors and thirdly, they have been criticised for creating a distinction between the different phases of policy formulation and policy implementation,

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[71] Sabatier and Mazmanian also sought to identify the conditions for perfect implementation. They identified six conditions that needed to be met. These included clear and consistent objectives, adequate causal theory, implementation process legally structured to enhance compliance by implementing officials and target groups, committed and skilful implementing officials, support of interest groups and sovereigns and socio-economic conditions that do not substantially undermine political support or causal theory. (Sabatier: 1986)

[72] Those writers who are strongly critical of the top-down model include Barrett and Fudge and Hjern.

which are seen by some analysts as being continuous.[73] (Sabatier: 1986) Likewise, top-down theories of 'perfect' implementation have also been criticised for proposing ideas that would be impossible to achieve in the real world.[74] (Hogwood & Gunn: 1993) However, as long as these limitations are understood the top-down model still provides a powerful framework for use in analysis, as it allows the examination of key actors and key variables in the process of policy implementation and their effects on the achievement of policy goals.

The bottom-up model of policy implementation

Criticisms about the weaknesses of the top-down perspective, have led some policy analysts to call for a bottom-up approach to policy implementation instead where it was argued that instead of focusing on chains of command and the successful completion of a policy 'hypothesis', policy would be better implemented by focusing on the human and organisational responses to individual policies and problems. Bottom-up research is therefore concerned with tracing the different conflicts and patterns of behaviour that occur in the development of policy. It focuses primarily on the relationship between policy-makers and policy implementers and sees implementation as a process of negotiation and consensus building, so that conflicts between the political and administrative environments are reduced. Bottom-up models emphasise the importance of the 'street-level' bureaucrat or practitioner in determining the outcomes of policy, as these often have a great deal of discretion in the way in which policy is implemented. This discretion can lead to substantial differences in the results of a policy to those predicted by the original policy-makers and considerable variation when the policy is implemented by more than one administrative body. (Parsons: 1995)

The bottom-up approach to policy implementation draws on many of the same ideas as the bureaucratic interpretation of policy-making. This is because it moves away from the rational ideal of planning and control and instead focuses on the impact that people and institutions have on policy implementation. Similarly, the bureaucratic approach also identifies a number of individual and organisational phenomena that can effect the policy-making process. (Burger: 1993) For example, the examination of human behaviour within a bureaucracy has shown that rationality is often limited by individual knowledge, individual values, habits, routines and different psychological environments. Likewise the values, beliefs and

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[73] Arguments about the benefits and weaknesses of the top-down model still continue. For further discussion of these arguments see Sabatier: 1986, Hogwood and Gunn: 1993, Hill: 1997 and Parsons: 1995.

[74] See Barrett and Fudge: 1981 for further discussion of this point.

knowledge of an organisation will also have an affect on individual behaviour. This means that despite attempts by individuals to behave in a rational manner, their own values and those of the organisation or bureaucracy, will always have an affect on the way in which they view policy and so will also affect on the way in which they implement policy. (Parsons: 1995)

Further similarities can be seen in the way that the two approaches view the policy process. For example, in the bureaucratic interpretation, policy-making is usually viewed as a problem-solving exercise rather than a rational planning activity and this idea can also be seen in the bottom-up approach to implementation. In both frameworks individual responses to policy are seen as being more pragmatic than in the rational approach. This means that policy-making is more fluid, with policy-makers having to deal with unforeseen problems and negotiate solutions to these problems in an uncertain environment. As a result of this policy implementation is less structured, tending to 'muddle through' [75] rather than follow a strict plan and this leads to variations both in the way that policy is implemented and the eventual outcomes of that policy. In 'muddling through', implementation is characterised by negotiation, consensus building and incremental change and a good decision is seen as arising from agreement and process, rather than achieving the policy goal. In light of this, the 'means' by which policy is implemented becomes far more important than the 'ends' it actually achieves. (Parsons: 1995 and Rowlands & Turner: 1997)

The bottom-up approach to implementation was devised to overcome the problems identified in the top-down model and so many of its strengths arise from addressing these weaknesses. For example it can be used to analyse implementation where there is no dominant policy and a variety of actors, as it allows analysts to focus on any aspect of the policy or any of the issues raised by implementation. However, despite these strengths this approach also has its critics, who argue that there is a danger of bottom-uppers overemphasising the periphery over the centre and ignoring the influence that the centre can have on policy implementation. In addition to this they also see the lack of explicit theory about the factors affecting implementation as a failure of the model. They argue that because the bottom-up framework relies so heavily on the perceptions and activities of participants, it fails to address issues that affect participants indirectly or which the participants do not themselves recognise. (Sabatier: 1986) However, despite these criticisms the bottom-up approach is also an important tool that can be used to increase understanding of policy implementation as it offers a useful

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[75] This idea of policy as 'muddling through' was advanced by Charles Lindblom and led to the development of 'incrementalism' as a way of viewing the policy process.

alternative to the top-down approach by focusing on the influence that different actors have on policy implementation.

From examining the public policy literature, two main approaches have been identified for use in the analysis of policy implementation, these are the top-down and bottom-up approaches.[76] This section has examined the main concepts underpinning these two approaches, a brief summary of which can be found in Table 4.2 and has highlighted the similarities of these approaches to the rational and bureaucratic interpretations of the policy process. These two models of policy implementation have different strengths and weaknesses, as they have emerged in response to different motivations. The top-down approach emerged from concerns about the effectiveness of government programmes and the ability of elected officials to guide and constrain the behaviour of administrators and target groups and so is more useful for analysing the specific outcomes of a policy or programme. Whilst the bottom-up approach is more preoccupied with the strategies and interactions of the different actors in relation to the policy problem and so is useful for highlighting the role played by administrators and practitioners in the implementation of policy. As a result of these different strengths both approaches have an important role to play in the analysis of policy implementation.

There has been a growing recognition, in recent years, of the need to develop the theoretical foundations of information policy and as a result of this, a number of writers have turned to the wider public policy field, to identify new tools and methodologies that can be used in IP research. One approach identified as being of particular use, is the policy process model or 'stagist' approach to policy-making. This enables the analyst to address some of the complexity of information policy, by breaking down the policy process into different stages which allows more detailed analysis to be carried out. This thesis intends to build on the research already carried out in this area, by employing the process model in the analysis of information access policies. In particular this process model is used to highlight the implementation stage of the policy process, which was identified from the case study as a key phase in the development of a successful information access policy. To understand this stage,

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[76] In recent years steps have been taken by a number of writers to develop a hybrid of these two approaches that can be used to evaluate policy implementation. This has resulted in the development of a number of new frameworks that try and synthesise the best elements of the top-down and bottom-up approaches. These approaches include those put forward by Elmore and Sabatier and Mazmanian. A discussion of these synthesised approaches is beyond the scope of this research but for further discussion see Elmore; 1985, Sabatier: 1986, Sabatier and Jenkins-Smith: 1993 and Hill: 1997.

two approaches to policy implementation have been identified, the top-down approach and the bottom-up approach, which will later be in employed in the 'information access model' to examine information access policies. However, before that model is set out in Section 4.8, the following section will look at information resources management which forms the other key issue identified from the case study, as having a substantial effect on information access.

Table 4.2   Comparisons of top-down and bottom-up approaches to implementation

	Top-down	**Bottom-up**
Initial Focus	Government decision e.g. new law.	The local implementation structure involved in a specific policy area.
Identification of major actors in the process	From top down and from government out.	From bottom up.
Evaluative criteria	Focus on extent of attainment of formal objectives. May look at other politically significant criteria and unintended consequences.	Much less clear. Anything which is relevant to the policy issue or problem.
Overall Focus	How does one steer a system to achieve a policy-makers intended results.	Interaction among multiple actors in a policy network.

(Adapted from Sabatier: 1986: 33)

4.5   Information Resources Management

Having examined information access and policy implementation in the two previous sections, this study will now turn to look at information resources management, which forms the third part of this literature review. During the last thirty years, it has increasingly been recognised that information, like any other resource, needs to be effectively managed if organisations are to improve their overall performance. Of course, the need for effective information management within organisations was by no means new, but it did become increasingly important in the 1960's and 70's, as the foundations were laid for the global information economy and organisations began to employ new technologies to manage their information holdings. Many organisations soon found that their established information management practices were no longer adequate and began to look towards the development of a new, comprehensive information management strategy to help them achieve their organisational

objectives. This strategy became known as information resources management. (Bergeron: 1996)

4.5.1 The study of Information Resources Management

The idea of creating a holistic and integrated approach to information management was first advanced in the 1960's, but it was only really in the 1970's and '80's that 'information resources management' became established, both as a concept and as a visible area of research. This development from little known organisational idea to distinct area of study, was largely due to its adoption as a management tool, by the United State's Federal government, which significantly raised the profile of IRM and spawned a growing body of research into the subject carried out both by academics and IRM practitioners.[77] (Bergeron: 1996)

As with other areas of research concerned with the study of information, IRM draws on work from a variety of academic disciplines including Information Science,[78] Management Science, Management Information Systems (MIS) and Public Administration.[79] This diversity has the advantage of bringing a range of different knowledge, experience and methodologies to the subject area, but has also led to some difficulties including a disparity in terminology used by authors from different academic fields, when writing about the subject matter. Bergeron, in her overview of IRM, identified a number of these differences and found that they existed even in relation to the field's most fundamental of terms, such as 'information resources management' itself. She stated that the term 'information management' (IM) was often used as a synonym for 'information resources management' and cites a number of examples where authors who offer two different definitions of these terms, go on to use them

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[77] The adoption of IRM by the US Federal government will be examined in more detail in Section 4.5.4.

[78] Which is taken here, to also include the fields of library studies and archives and records management.

[79] These close links to other academic disciplines can also be seen in studies of information policy where a number of writers, including Braman, Burger and Hernon, have highlighted the interdisciplinary nature of the field. Braman, for example, identified more than forty academic fields that dealt with information studies, (Braman: 1989) whilst Burger stated that information policy evaluation needed the skills of several academic disciplines including 'economics, law, political science, public administration, sociology, public policy, management science and information science' (Burger: 1993: 90) and Hernon identified Information Science, Public Policy and Information Policy as forming the three core academic disciplines for the study of government information. (Hernon: 1989)

interchangeably.[80] Likewise, she found that many of the existing controlled vocabularies and thesauri, also saw the two as being synonymous. In light of this, she suggested that there was actually very little difference between the two terms and that researchers must be aware that 'information resources management' is referred to as 'information management' by some writers. (Bergeron: 1996)

4.5.2   The concept of Information Resources Management

The development of the IRM concept, was largely due to a recognition by organisations, that their information holdings were a valuable asset which, when employed correctly, could result in a number of positive benefits. These benefits however, would only be achieved if information resources were employed to their full potential and so a new management approach was required that would enable them to be used more effectively. This new strategy became known as IRM and set out to provide an integrated approach to information management. This meant that an organisation's information holdings, information technology and information needs were all addressed through one comprehensive management system, which had the objective of improving organisational performance through the achievement of specific goals. (Caudle & Levitan: 1989)

There are a number of basic ideas which underpin the concept of 'information resources management'. The first is that information is recognised as an organisationally owned resource, which needs to be properly managed. There are various definitions, available in the literature, of the term 'information resource',[81] however, for the purpose of IRM this is usually defined as broadly as possible. The information resource should therefore include: information itself, which can be kept in any format; information technologies, including computer hardware, software and telecommunications; personnel and financial resources. In addition to this, it should also include a variety of information functions, such as data processing, records management, archiving and library services. The second basic IRM concept is that there should be an integrative approach to information management. This means that information resources should be managed using a organisation-wide, comprehensive and integrated system. This integration should occur on a number of levels, including the methodological, policy, organisational and technological, and result in the

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[80] These problems of terminology and definition are also highlighted by Wilson in his review of the study of information management. (Wilson: 1997)

[81] See for example Eaton and Bawden: 1991, Office of Management and Budget: 1996 and Burk and Horton: 1988.

development of co-ordinated strategies for all those areas. The third concept on which IRM is based, is the management of the information life cycle. Like other products, information can be seen as having a life cycle within an organisation. This life cycle can be seen to have three key phases: active, semi-active and inactive. When 'active', information is necessary for the day-to-day running of the organisation and is seen as a valuable asset, which is why it was created or acquired. When 'semi-active' information still has some value but is no longer in daily use and so is usually kept for administrative, legal or financial purposes and finally, when 'inactive', information has little or no value to the organisation. If it still has some value, then it will be kept for historical or scientific reasons, but if not, will be removed from the organisation altogether. The use of the concept of information life cycle within IRM provides organisations with an important tool for managing and evaluating their information resources, something that will be discussed in more detail in Section 4.5.6. The final concept underpinning IRM is that it should be linked to the strategic planning of the organisation, so that information resources are employed in support of organisational goals. To achieve this, connections need to be made between organisational and IRM planning, so that they both work together to help accomplish organisational objectives. (Bergeron: 1996)

4.5.3   Definitions of Information Resources Management

These basic concepts can be seen in many of the definitions of IRM that are available in the literature. Of these definitions, the most widely used come from the United States, from Federal legislation such as the Paperwork Reduction Act (PRA) or other government documentation that addresses IRM issues, such as the Office of Management and Budget's (OMB) Circular No. A-130 on the *Management of Federal Information Resources*. Three definitions used by the US Federal government will be examined to highlight both the scope of IRM and its conceptual development over the last twenty years. The first definition comes from the US Paperwork Reduction Act, which when originally enacted in 1980, did not contain a definition of IRM, but this was later included when the Act was reauthorised in 1986. 'Information resources management' was then defined as:

> 'the planning, budgeting, organizing, directing, training, promoting, controlling, and management activities associated with the burden, collection, creation, use and dissemination of information by agencies, and included the management of information and related resources such as automatic data processing equipment.' [82]

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[82] 144 U.S.C §3502 (13) quoted in Plocher: 1996: 39 – 40.

In this definition, IRM can be seen as having two main components: the first dealing with the management of information, which is set out in relation to the stages of the information life cycle and the second, with the management of its related resources. Similarly, the next definition taken from the 1996 version of the Office of Management and Budget's Circular A-130, also saw IRM as being primarily concerned with these two things when it stated that:

> 'The term 'information resources management' means the planning, budgeting, organizing, directing, training, and administrative control associated with government information resources. The term encompasses both information itself and the related resources, such as personnel, equipment, funds and information technology.' (Office of Management and Budget: 1996: 4)

Both these definitions highlight the integrative approach of IRM. So that in addition to addressing the management of information, IRM is also associated with the management of its associated resources, such as information technology, finances and personnel. (Lewin & Sprehe: 1996) In addition to this, they also highlight the role of the information life cycle in IRM, by setting out many of the areas of information management in relation to the different stages of the life cycle.

These two early definitions set out the main components of IRM, but fail to highlight a number of other important areas, such as the overall aims and objectives of the policy. These have increasingly been seen an essential part of IRM and were included in the Paperwork Reduction Act's definition, when it was reauthorised in 1995, so that in addition to the management of information and its associated resources, IRM was also described as:

> 'the process of managing information resources to accomplish agency missions and to improve agency performance, including through the reduction of information burdens on the public.' [83]

In this definition, the concept of IRM could now be seen as having a specific purpose, so that as well as setting out the main information management tasks, it also had an overall objective against which it success could be measured. This was particularly important in helping to turn IRM from an theoretical ideal, into a meaningful management tool with specific tasks to achieve.

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[83] 44 U.S.C § 3502 quoted in Lewin and Sprehe: 1996: 52.

4.5.4 The use of Information Resources Management

IRM techniques have been used in a variety of organisations, in a number of different countries around the world. However, the history of IRM is primarily that of its adoption by the public sector in North America and particularly by the US Federal government, which was predominantly responsible for its creation and development, both as a concept and as a management tool.[84] As a result of this, the following section will concentrate on the adoption of IRM practices by the US Federal government. However, it must also be noted that these techniques can be found in other public[85] and private sector organisations.[86]

The Use of IRM by the United States Federal Government

The adoption of IRM policies by the US Federal government, resulted from a study carried out into information management by the Congressional Commission on Federal Paperwork in

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[84] IRM policies were also adopted by the Canadian Federal government, although little research was then carried out to evaluate the impact of these policies (Bergeron: 1996)

[85] Wilson, for example, examined the development of information management practices within the public sector in the UK and compared them to that in the United States. He found that the UK government had attempted to introduce some information management concepts into government departments with the publication, in 1990, of the Central Computer and Telecommunications Agency's (CCTA) document on *Managing Information as a Resource*. This document had examined the concept of information as a resource and promoted the use of information management techniques in helping departments to achieve their objectives. (Central Computer and Telecommunications Agency: 1990) However, he found that the implementation of these practices had received nowhere near as much impetus as they had in the US which he argued was largely because the UK government was more concerned with promoting the 'market' concept within government and giving industry the opportunity to exploit their information resources. This policy was set out in a number of government documents including the Cabinet Office Information Technology Advisory Panel's *Making a Business of Information* and the DTI's guidelines on *Government-held Tradeable Information.* (Wilson: 1997)

[86] The adoption of IRM practices by the private sector, has been somewhat slower than in the public sector. This has been seen to be due to a number of reasons including a lack of awareness amongst private sector organisations of the existence of IRM practices and where that awareness did exist, a scepticism about the improvements that IRM could bring. (Horton: 1991) Bergeron found that these problems of awareness were further exacerbated by a lack of research into the use of IRM by the private sector. She could only highlight a handful of studies, which had been carried out into private sector IRM in the UK and the US. (Bergeron: 1996)

the late 1970's.[87] This Commission had been established to investigate the different ways in which the burden of Federal paperwork and red tape could be reduced and had found, that one of the primary causes of excessive paperwork, was the haphazard collection of information by government agencies. This information was collected with little or no thought being given to the economic or human costs of gathering it, so that information was collected out of habit rather than to fulfil any specific purpose.[88] The Commission's report, published in 1977, argued for a substantial change in the way in which information was viewed by government agencies recommending that it be regarded as a valuable and costly resource, that should be effectively managed like any other resource within government. Originally this idea received some criticism, as it was said that information was unique and could not be managed in the same way as other resources.[89] However, the government did not see why this should prevent it from being managed at all and so the first steps were taken towards the management of information and it's associated resources, with the inclusion of a number of IRM concepts in the Paperwork Reduction of Act. (Horton: 1991)

The US Paperwork Reduction Act 1980

The 1980 Paperwork Reduction Act created a structure to control the management of practically all the information activities carried out by Federal agencies.[90] This meant that all

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[87] This study was carried out under the direction of Forest W. Horton who would later go on to write the first book on IRM, entitled *Information Resources Management,* in 1979 and who remains an eminent writer in the field. (Caudle: 1990)

[88] The Commission worked out that the cost of Federal paperwork to the nation was over $100 billion a year and that unless some fundamental changes were made to the way in which the government managed its information resources, there was little chance of this burden being reduced. (Plocher: 1996)

[89] Of course this was true, information was a unique resource with a number of distinct characteristics compared to other more tangible resources. These unique characteristics included that it was hard to measure the value of information as this was dependent on its context and use, it was unlike other resources as it could not be consumed, it was dynamic rather than static, it could have more than one life cycle and it came in a variety of different forms which could be used in different ways. (Eaton & Bawden: 1991) However, none of these characteristics prevented information from being managed but simply had to be taken into account when devising the mechanisms through which it would be managed.

[90] The Act has since be reauthorised two more times, firstly in 1986 and later in 1995. Both of these reauthorisations have been used to introduce a number of changes to the original Act and have addressed different areas where problems have been highlighted.

informational issues from the collection, storage and retrieval of information, to privacy and security would be addressed through a single, integrated management system. (Plocher: 1996)

The Act set out six major components of IRM. The first of these was that every government agency, should have a senior official who was responsible for the co-ordination of all departmental information programmes. The second was that 'information resources' should be defined as broadly as possible. The primary aim of IRM was to integrate the management of all information resources, to improve the performance of the organisation. So regardless of whether this information was found in books in a library, in correspondence in a file or data in a computer, it was vital that it was all included, so that this could be achieved. The third component was that government agencies should make an inventory of all their important information resource investments and periodically evaluate them to make sure that they were performing as expected and meeting performance targets. By carrying out this evaluation, any information resources that were failing to meet their targets could be quickly highlighted and steps taken to stop their future collection, if they were no longer fulfilling a useful role within the organisation. The fourth component of IRM was that information management plans should be linked to agency business plans, so that the ways in which information resources helped in the achievement of agency goals could be examined and evaluated. The fifth component was that education and training programmes should be introduced, to address a variety of issues at different organisational levels and help ensure the successful implementation of IRM. This, for example, meant introducing profile-raising programmes on issues like information and computer literacy for senior and middle management, technical training programmes for the organisation's information professionals and end-user training for all employee's, so that they could define their information needs more accurately. Finally, the sixth component was that research programmes should be developed, to investigate the different ways in which IRM goals could be achieved. These research programmes should be designed to tackle a wide range of subjects, such as the promotion of information sharing, so that IRM policies would have a more positive impact within government and help staff in the achievement of their organisational goals. (Horton: 1991)

The Paperwork Reduction Act gave responsibility for the introduction of these new requirements to the Office of Management and Budget (OMB), which set up a new Office of Information and Regulatory Affairs (OIRA) to oversee the implementation of IRM. Under the Act, OMB was responsible for implementing IRM through the development of consistent policies and by promoting the use of information management standards throughout Federal government. However, little detail was given as to what these policies or standards should be and so it was largely left to OMB, to establish the practical means by which the Act's IRM

objectives would be accomplished. This was to prove particularly controversial, as OMB chose to be somewhat selective its implementation of the Act's measures, concentrating on the more politically expedient areas of reform, rather than on the larger objectives of IRM. This meant that many of the levels of co-ordination that had originally been envisaged, were never actually achieved.[91] (Plocher: 1996)

Reauthorisations of the Paperwork Reduction Act

The Paperwork Reduction Act was reauthorised in 1986 and this time required OMB to develop comprehensive IRM policies, to issue guidance about these policies and develop an information technology plan. However, even then some of the original inadequacies of the 1980 Act remained and it was only in 1995, that many of these were finally addressed. The 1995 reauthorisation was aimed primarily at developing IRM practices that would support the efficiency and effectiveness of agency programmes. To achieve this, the 1995 Act included a number of important new elements. The first of these, was that it refocused the fundamental concepts of IRM to tackle programme performance. This meant that IRM changed from being a simple listing of information activities, to a policy where information management was specifically linked to programme results. Secondly, with the aim of improving accountability, it established much clearer responsibilities for individual agencies, so that they were now responsible for carrying out their own IRM activities and for integrating these with other areas of decision-making.[92] (Plocher: 1996)

OMB Circular A-130

Whilst the PRA introduced the concepts of IRM into Federal government, the practical implementation of these concepts was left to the Office of Management and Budget who published a number of documents to aid this implementation process. The most important of these documents was Circular A-130, which became the primary policy instrument through which Federal agencies were encouraged to adopt IRM practices. (Hernon: 1994) The purpose of Circular A-130 was to establish a policy for the management of Federal

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[91] This selectivity was largely due to political factors as OMB began to focus on areas of reform that were politically expedient for the Reagan administration, namely processes for clearing regulations and paperwork. (Plocher: 1996)

[92] These responsibilities included strategic planning, the development of performance measures to link IRM to programme performance, IRM training and the creation of processes to select, control and evaluate major initiatives for information systems. (Plocher: 1996)

information resources and provide procedural and analytical guidelines for the implementation of this policy. (Office of Management and Budget: 1996)

Like the Paperwork Reduction Act, OMB's Circular A-130 has received a number of revisions over the years, both to strengthen its IRM functions and address a number of problems that were identified in its earlier editions.[93] One of the main areas where these revisions were made, was to the section dealing with information policy. From its introduction in 1985, this section was divided into two parts: the first dealing with information management; the second with the management of information systems and technology. In the original version of the Circular, these sections were both concerned with the planning of information resources but had very different purposes. The information management section was primarily concerned with the operational planning for paperwork reduction,[94] whilst the information systems and technology section concentrated on strategic planning. IM was therefore viewed primarily as a practical agency issue, whilst IT was seen as a more strategic resource, which could be used to help agencies achieve their objectives. (Bertot & McClure: 1997)

This would change in later versions of the Circular, however, once it was realised that strategic planning for all information resources was needed if the government's IRM objectives were to be achieved. This led to creation of a new section in the Circular, entitled *Strategic Information Resources Management Planning*,[95] which required that all Federal agencies introduce an IRM planning process that addressed the following components:

- Strategic IRM planning that promoted the fulfilment of the agency's mission;
- Planning to promote the use of information throughout its life cycle;[96]
- Operational information technology planning that linked IT to mission and programme needs;
- The co-ordination of all other agency planning processes, including strategic, human and financial resources. (Office of Management and Budget: 1996)

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[93] Since the Circular was first published in 1985 it has been revised a number of time including in 1993 and 1996 and is undergoing further revision at the time of writing this thesis.

[94] This operational planning was based primarily around the information life cycle.

[95] Section 8(b)2.

[96] By doing this the usefulness of information would be maximised and in turn the burden on the public would be minimised.

By doing this, OMB hoped to make sure that agencies would address areas of strategic as well as operational planning and in doing so would ensure that all information resources were incorporated into a comprehensive IRM plan that worked to support the objectives of the agency. (Bertot & McClure: 1997)

4.5.5 The development of Information Resources Management

One of the main characteristics of IRM identified in this brief overview, has been its ability both to change and adapt over the last thirty years. When it first emerged as part of the Commission on Federal Paperwork's original report in 1977, IRM was based on a number key ideas about how the information resource could be more effectively managed. However the practical ways in which this would be achieved were left largely undecided and it was only once OMB had taken responsibility for the implementation of the PRA, that a number of practical IRM measures were introduced. As a new management tool, many of the early policies devised to implement IRM came in for criticism, particularly as problems emerged which meant that their overall affect was far less than originally anticipated. However, over time the measures used to implement IRM have become increasingly refined and so the history of IRM is one of practical development in an ever-changing environment.

This development has be seen in relation to a number of issues that have been identified as barriers to the successful implementation of IRM. One of which has been the conflict between information management and information technology management (ITM). In most definitions of IRM, equal weight is placed on information management and information technology management. However, one of the main problems that arose in the practical implementation of IRM, was the tendency for organisations to focus on the management of information technology rather than on the information itself.[97] (Lewin & Sprehe: 1996) This conflict between IM and ITM was identified by OMB as a significant barrier and led to later copies of Circular A-130 highlighting the strategic importance of information management, as well as information technology management, in an attempt to address this problem. One other issue that had a significant effect on the development of IRM policies was the need to address the large scale changes that occurred in relation to technology. These developments in technology offered organisations a number of new methods for the management of their information resources, but also brought with them a number of new problems. IRM policies

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[97] This was largely due to the fact that most IRM officials tended to have a computer science degree and backgrounds in data processing and telecommunications.

therefore had to develop to include the management of electronic information resources and address the problems that resulted from this.[98] (Caudle & Levitan: 1989)

One of the most important aspects of IRM has been its ability to develop and react to changes over the last thirty years. However despite this, IRM is still underpinned by the same fundamental concepts as when it was first introduced thirty years ago. These fundamental tenets include that information is viewed as a resource which has both a cost and value, that IRM is viewed as an integrative framework for the management of all information resources, that IRM should support organisational goals; and that the information life cycle should underpin information management. (Bergeron: 1996) The latter of these, the information life cycle, is a key area of IRM as it forms one of the primary ways through which, the management of information resources and particularly information itself, can be addressed.

4.5.6   The concept of Information Life Cycle in Information Resources Management

The information life cycle forms one of the key concepts of IRM and plays a fundamental role in Federal IRM programmes, as can be seen from a number of policy instruments, including the Paperwork Reduction Act and OMB's Circular A-130, both of which highlight the different phases of the information life cycle in their definitions of IRM.[99] The information life cycle has a number of different uses, as it can be employed both as a conceptual metaphor and as a practical management tool. Firstly, as a conceptual metaphor, it enables the user to examine the different stages of the life cycle in a systematic way and investigate the relationships between these different stages, whilst on a more practical level, it can be used by practitioners as a 'road map' to address many of the operational issues that arise as part of an IRM programme. (Hernon: 1994: 144)

The use of the life cycle metaphor can be found throughout history, in a variety of different contexts. Traditionally, life cycle has been viewed in relation to biological organisms, as can be seen from the dictionary definition of life cycle, which describes it as being the 'cyclic

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[98] Hernon and McClure, for example, identified a number of problems that were particular to the management of electronic information resources in the US. These included: a lack of government-wide standards for information systems design and interoperability, too much emphasis on IT procurement and management, limited interest in the life cycle management of electronic information, lack of a service perspective in managing electronic information, the need for long-range planning and development of the information infrastructure and the lack of co-ordination in government IRM policies and procedures. (Hernon & McClure: 1993)

[99] This can be seen in Section 4.5.3.

series of changes undergone by an organism.'[100] However, the life cycle metaphor has also
been adopted by a number of disciplines outside the biological sciences, where it has been
used to address a variety of issues from organisations to waste. This variety in the areas that
employ the life cycle concept is illustrated in Figure 4.2. One discipline, where the life cycle
concept has become the subject both of increasing interest and use, has been within the LIS
community, where numerous life cycles have been identified, both in relation to information
and the information resource as a whole. (Hernon: 1994)

Figure 4.2   Life cycles

Life Cycles
Construction Life Cycle
Family Life Cycle
Information Resources Life Cycle
Information System Life Cycle
Information Technology Life Cycle
Organisational Life Cycle
Plant Life Cycle
Product Life Cycle
Records Life Cycle
Software Development Life Cycle
Waste Management Life Cycle

(Taken from Hernon: 1994)

One of the main areas where this metaphor has been adopted, within the LIS community, has
been in relation to information technology. Here the life cycle concept has been applied to a
variety of areas, including the procurement of hardware, the development of software and
information systems as a whole.[101] Indeed, Hernon argues, from a study of US government
literature, that it was within the IT field that the life cycle concept first found favour and it has
since been borrowed and adapted by other sectors of the information community, so that
research using the life cycle metaphor can now also be found in archival management, records
management and information resource management, as well as in relation to information
itself. The use of the information life cycle can therefore be seen across the LIS field,

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[100] Taken from the 1989 Oxford Dictionary of Current English.

[101] For example, in relation to information systems, a life cycle has been designed that addresses all its
different phases from conception to replacement, including areas such as specification, acquisition,
design, development, testing, integration, operation and maintenance. (Hernon: 1994)

however, the speed of its adoption and development has been more varied. In the analysis of archives and records management, for example, the use of the life cycle has become increasingly popular, which has encouraged research both into its application and use. However, in relation to IRM and information, it remains a largely under-researched concept, where work still needs to be carried out both into its basic principles and the different ways in which it can be employed.[102] (Hernon: 1994)

The use of the life cycle has provided the information community with a systematic way in which to address a number of issues from start to finish, or birth to death. One such area where this had been successfully employed has been in the area of records management, where it has had a significant impact on the way in which records are controlled. The development of the life cycle, has provided the records management field with a concept that can be easily understood on a theoretical level but also employed on a practical level, so that a series of distinct phases can be identified which can then be linked to different functional activities that need to be performed. (Penn *et al*:1989)

There are a number of different versions of the records management life cycle available in the literature, two of which are examined here to illustrate the main areas which they address. Hernon's version, shown in Figure 4.3, was adapted from the life cycles found in US government record management documents and so is designed with the life cycle of an official government record in mind. Whilst Goodman's life cycle, set out in Figure 4.4, examines records management in a commercial setting and so addresses organisational records. From examining these two life cycles, it can be seen that, although slightly different, they do focus on similar stages of a records life, including creation, circulation, storage, use and disposition. In both life cycles there is a start point, when the record is created and an end point where it is finally destroyed. It is important to note here that although all the stages of the life cycle are displayed in a progressive order, this is not necessarily the route that a record would take. A record may skip certain steps or be disposed of at an earlier point, so it does not necessarily travel through every stage but in the end it will always be moving towards final disposition. (Hernon: 1994)

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[102] This problem remains despite the publication of two important articles into the information life-cycle by DeSanti and Hernon in the early 1990's. However, since then little other research into the information life cycle, particularly in relation to IRM or information itself, appears to have been carried out.

Figure 4.3 **Hernon's records management life cycle**

Hernon's Records Management Life Cycle
Creation
Distribution
Utilisation
Storage (active)
Transfer
Storage (inactive)
Disposition or permanent storage
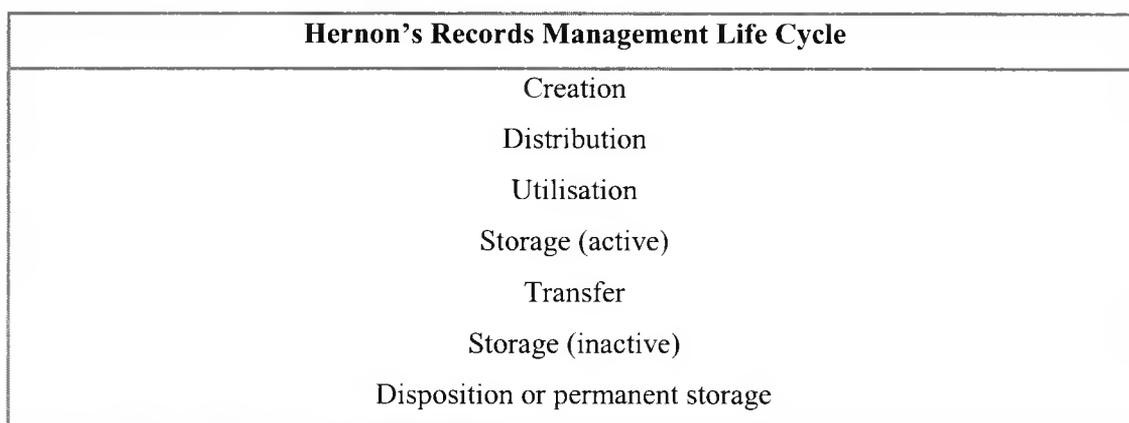
(Taken from Hernon: 1994:146)

Figure 4.4 **Goodman's records management life cycle**

Goodman's Records Management Life Cycle
Design and creation of records
Identification
Authorisation
Verification, validation and auditing
Circulation, access, loan, use
Back-up procedures and disaster recover plans
Retention schedules and destruction
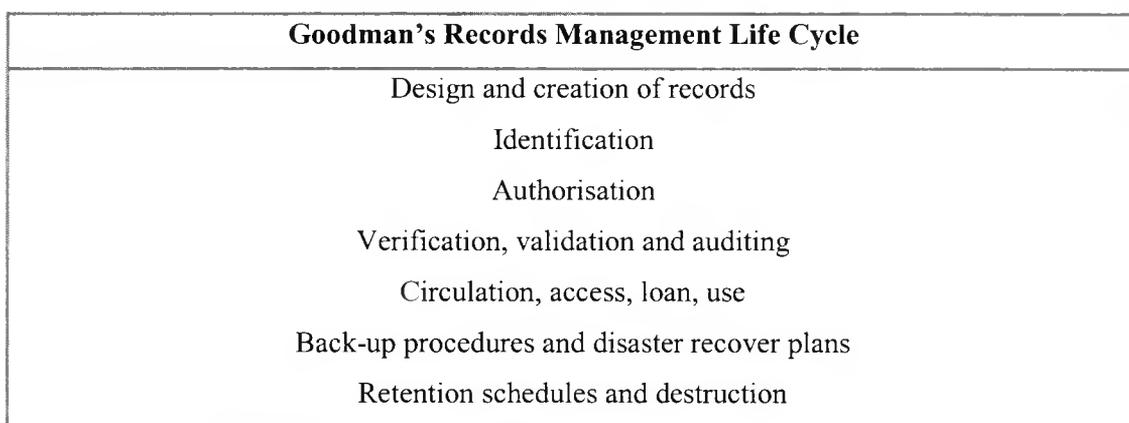
(Taken from Goodman: 1994: 134 – 135)

The adoption of the life cycle concept in relation to records management, has become increasingly common place. However, in other areas of the information field, it remains a relatively new area of study which has yet to be fully explored. Hernon, for example in his study of the information life cycle, identified a number of important issues which have yet to be addressed in the literature including the exact stages of the information life cycle, the relationship between these stages, the role of the information life cycle in IRM, the relationships between different life cycles in the same and different areas of the information resource, the role of the life cycle as a conceptual framework and the relationship between the life cycle as a conceptual framework and management tool. He himself went on to address the first of these issues, by identifying the key stages of the information life cycle from a review of the LIS literature. In this review he examined previous examples of the information

life cycle including those from the IRM literature,[103] the records management literature and work by DeSanti on the dissemination of electronic government information. (Hernon: 1994)

Hernon had identified DeSanti as one of the few people to have previously examined the stages of the information life cycle, which he had looked at in relation to IRM and the dissemination of electronic government information.[104] DeSanti argued that the dissemination component of IRM could only be successfully implemented, if all aspects of the information life cycle were managed and not just those relating to the use and dissemination of information. He then went on to identify five major functions of the information life cycle, that he argued would need to be addressed if a successful information dissemination policy was to be created. These five functions can be seen in Figure 4.5. DeSanti saw each of these five stages as being a specific area of expertise with their own skills and languages, where specialised knowledge needed to be developed if they were to be successfully carried out. In addition to cultivating this specialised knowledge, he also argued that close links needed to be developed between these different functions to improve overall agency performance. This was because the decisions taken in one area of the information life cycle had important implications for the others and so needed to be taken, if not collectively then certainly with the other functions in mind, if a successful information management programme was to be created.[105] (DeSanti: 1993)

DeSanti, in setting out his version of the information life cycle, was primarily concerned with developing a management tool that could be used to help decision-making in relation to IRM. To aid this decision-making process, he went on to outline what he saw as the main considerations that needed to be addressed in relation to each of the five stages.[106] In doing

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[103] Including the Paperwork Reduction Act, OMB's Circular A-130 and their Bulletin 92-05 on *Information Resources Management (IRM) Plans*.

[104] At the time of writing, DeSanti was Assistant Director for Information and Management and the US government's General Accounting Office and examined the concept of the information life cycle as a way of addressing some of the problems of dissemination that had arisen as part of the Federal programme for information resources management. (DeSanti: 1993)

[105] DeSanti argued that decisions about information dissemination could only be taken once decisions about been taken about retrieval and likewise with storage and organisation going right back to the way it was collected or created. Likewise other decisions, such as those taken in relation to technology would affect all the stages of the life cycle and so would also need to be taken collectively. (DeSanti: 1993)

[106] For example, in relation to the fourth function of 'transmission and dissemination', DeSanti puts forward nine points that should be considered. These included looking at the user friendliness of the

this, he hoped to provide an important analytical framework that could be used to address both the key stages of the management of information resources and promote some understanding of the relationships between these different stages. (DeSanti: 1993)

Figure 4.5   DeSanti's five major functions of the information life cycle

Five Major Functions of the Information Life Cycle
Information creation and gathering
Data management and information processing
Security management
Transmission and dissemination
Final disposition

(Taken from DeSanti: 1993: 256)

Hernon by examining the US policy documents, the records management literature and the work by DeSanti, was able to highlight thirteen key steps as part of the information life cycle. These included:

1.	Collection;	8.	Use;
2.	Creation;	9.	Retention;
3.	Production;	10.	Retirement;
4.	Processing	11.	Storage;
5.	Protection	12.	Disposition; and
6.	Dissemination	13.	Management.
7.	Distribution		

He then went on to regroup these steps to provide a framework of five interrelated life cycle stages that could be used for the management of information, these can be seen in Figure 4.6.

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access service; examining the reliability of the information; looking at how useful the information was in relation to decision-making; looking at the extent to which the service allowed the user access to other information, looking at the flexibility of the service, looking at the accountability of the service; looking at the extent to which it could deal with special queries, the levels of evaluation that would be carried out and the information locator services that would be provided.

Figure 4.6   **Hernon's framework for the information life cycle**

Framework for the Information Life Cycle
Information creation and gathering
Production, processing and publication
Transmittal (access, dissemination and distribution)
Retrieval and Use
Retention (storage and archiving) and disposition
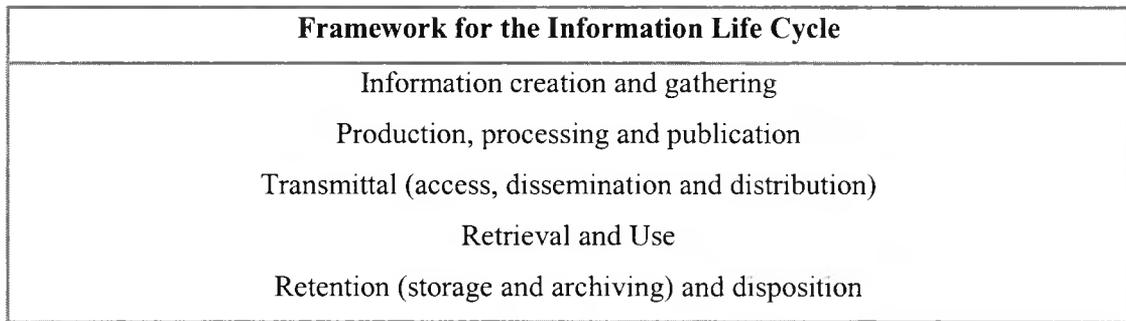
(Taken From Hernon: 1994:158 – 163)

Hernon went on to identify a number of fundamental issues, that would need to be addressed in relation to each life cycle stage, to promote good management practice. These included planning, security, privacy, quality control and technology, all of which would affect the whole of life cycle and so could not simply be addressed in relation to one stage. He then went on, following the same structure as DeSanti, to identify a number of key questions that needed to be asked in relation to each stage of the life cycle. This was to ensure that the main issues for each life cycle stage were addressed and policies developed that prevented them from causing problems in other areas. In doing this, Hernon hoped that the information life cycle could be successfully used in the planning and evaluation of IRM and would lead to the development of better IRM programmes in the future. (Hernon: 1994)

Both Hernon and DeSanti identified the information life cycle as an important concept for use in the management of information resources, as it would assist organisations in the planning, evaluation and oversight of their information policies. They both argued that the information life cycle would lead to better decision-making, as the relationships between the different stages could be examined, so that decisions were taken in relation to the whole life cycle rather than one single part of it. This was particularly important for the management of information resources, where it was hoped that the development of more rational and effective decision-making would lead to the development of more successful information policies.

From the introductory research examining the IPC registers, two issues were identified that could be seen as having a significant impact on the success of information access policies, these were policy implementation and information resources management.[107] The preceding sections have therefore examined information access, policy implementation and information resources management. However to investigate the effects that policy implementation and

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[107] These two areas were also identified in Section 4.3.4, as issues that could effect the success of government information access policies.

IRM have on information access, which is the main aim of this thesis, a further examination of these issues is required. The following two sections will therefore examine the relationships between these issues, looking firstly at that between information access and IRM and secondly, at that between policy implementation and IRM. These examinations will then be used as the basis for the 'information access model', which is set out in Section 4.8.

4.6   Information Access and Information Resources Management

In the original research examining the case study used in this thesis, a number of issues were identified as possible causes for the poor performance of the IPC registers.[108] Information resources management was highlighted as one of these issues and this led to further research being carried out to examine its effects on information access. In carrying out this research, it quickly became apparent that the employment of information management techniques, substantially altered the ways in which information from the register was made available and that as a result of this, IRM could be seen to have a significant effect on the overall success of the policy. IRM had therefore been identified from the case study, as a key issue that affected access to information and steps were then taken to examine the relationship of these two issues, within the wider field of Information Science.

The identification of IRM as a key issue affecting the success of the registers, led the author to hypothesise that it also had a significant impact on other information access policies. The development of this hypothesis, led to an examination of the relationship between information access and IRM within the wider Information Science literature. The first step of this examination, was to carry out a series of searches that would establish the boundaries of the information access and information management literature. These searches were carried out using the Social Science Citation Index (SSCI) and Library and Information Science Abstracts (LISA) and employed a number of different search terms, in an attempt to identify as much of the relevant literature as possible. These search terms included, in relation to information access: 'information access', 'access to information' and 'freedom of information' and in relation to information management: 'information management', 'information resources management' and 'records management'. The results of these searches were then used to identify any studies that had previously established a link between information access and IRM.

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[108] These issues were identified in Sections 3.4.1, 3.4.2 and 3.4.3.

To identify research that had already detected a link between information access and IRM, a series of searches were carried out, to examine the co-occurrence of the listed search terms in the LIS and wider social science literature. The results of these searches were somewhat surprising. Searches were first carried out using the Social Science Citation Index. These combined the information access and information management keywords, using the Boolean connective 'OR' and as can be seen from the results set out in Table 4.3, in most cases this identified a substantial number of documents containing one or other of the search terms. However, when the same searches were carried out using the connective 'AND', to test the co-occurrence of these terms, very few documents were retrieved. The relationship between these two types of searches was examined using Dice's coefficient[109] and as can be seen from results in Table 4.3, this further highlights the low levels of search term co-occurrence in the document set. Having established this fact using the SSCI database, the same searches were then repeated using Library and Information Science Abstracts. It was thought that by concentrating specifically on the LIS literature, different results might be produced, but once again very few documents containing both search terms were retrieved.[110]

The results of the searches examining information access and information management, raised a number of questions about the relationship between these two issues. The most important of which was if there actually was a relationship between them. It could easily be argued, based on the above results, that the lack of a substantial body of work connecting these two issues, suggested that the relationship between these two issues was not particularly strong. However, from other examinations of the LIS literature carried out by the author, this does not appear to be the case. Despite the relatively few numbers of documents highlighted by the database searches, the LIS literature is littered with references to the relationship between information access and information management. In light of this fact, the search results examined here are not intended to provide a definitive explanation of the relationship between information access and information management, but instead are used to highlight what could be seen as a gap in LIS research.

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[109] Dice's coefficient is used, within the field of information retrieval, as a test of association to examine the relationship between those documents that make up the set (C + C') which in this case is those documents that contain either keyword and those that contain both keywords (C ∩ C'). The formula for Dice's coefficient is 2 (C ∩ C' ÷ C + C') (Van Rijsbergen: 1979)

[110] The results of these searches can be found in Appendix 7.

Table 4.3   SSCI search results examining the relationship between information access and information resources management

Search Term 1	Search Term 2	Documents retrieved using the 'OR' connective	Documents retrieved using the 'AND' connective	Dice's Coefficient
Access to Information	Information Management	1482	10	0.013
Access to Information	Information Resources Management	656	3	0.009
Access to Information	Records Management	673	3	0.008
Information Access	Information Management	1159	5	0.008
Information Access	Information Resources Management	315	0	0.000
Information Access	Records Management	358	0	0.000
Freedom of Information	Information Management	1162	0	0.000
Freedom of Information	Information Resources Management	283	1	0.007
Freedom of Information	Records Management	327	0	0.000

Although very few relevant studies were highlighted in the searches, acknowledgement of relationship between information access and information management can be seen throughout the LIS literature and in particular, in relation to government information. For example, examinations of freedom of information on both sides of the Atlantic, have increasingly recognised the importance of information management techniques, in ensuring the success of this type of policy. This could be seen in the United States, for example, where Relyea, in his examination of the US FOIA, highlighted the significance of 'good records management practices and filing procedures' for ensuring the effectiveness of paper-based FOIA

operations. (Relyea: 1994: 287) Studies examining freedom of information in Britain, also highlighted the importance of information management policies and the need for greater co-ordination of information resources, to ensure the success of access legislation. This can be seen in the work of Roberts & Rowlands and in that by Moore & Steele, who argued that, 'Freedom of information should not be considered in isolation …[as] experience suggests that access to information alone is insufficient. Attention needs to be paid to the effective management of information resources in government …'. (Moore & Steele: 1991: 197) The link between IRM and information access can therefore be seen in a number of studies examining freedom of information.

Writers on freedom of information are not the only group, however, to have recognised the relationship between information access and information management. As studies on freedom of information have identified the importance of information management, so studies on information management have recognised how this could be used to aid access to information. In the US in particular, the development of IRM practices has led to an increasing awareness within Federal government of the importance of information management procedures in achieving different information objectives, a point that has been highlighted in a number of governmental publications. For example, the Congress Office of Technology Assessment, in their report *Informing the Nation*, recognised the importance of the effective management of information and records and the role played by IT in supporting the Freedom of Information Act. (United States Congress Office of Technology Assessment:1988)[111] Similarly in Britain, a report by the CCTA into the management of government information resources, also recognised the benefits that information management techniques could bring to users, through greater and more timely access to information. (Central Computer and Telecommunications Agency: 1990)

An acknowledgement of the role played by information management in improving access to information can also be seen in studies carried out by academics and IRM practitioners. The British academic Wilson for example, in his overview of the information management field, saw the main aim of information management as improving organisational effectiveness through the provision of relevant, timely and cost-effective information. (Wilson: 1997) Whilst in the US, Fletcher highlighted the problems in local government caused by what she

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[111] The Congress Committee on Government Operations also showed how information technology could be used to support greater access to government information as this could allow the public to use government information in a more timely and meaningful way. (Congress House of Representatives Committee on Government Operations: 1989)

saw as a 'non-management' approach to information technology and examined some of the affects of this on access to information. She then looked at the development of a number of IRM/ITM programmes in local government that emerged in response to the public need for information and examined how these had provided better access to information and in turn better access to local government and services. (Fletcher: 1997) A similar link was also highlighted by the IRM practitioner DeSanti in his examination of Federal government information dissemination programmes, where information resources management was identified as a key component in the success of these programmes. (DeSanti: 1993)

The relationship between information access and IRM can therefore be seen in a wide range of publications, written by academics, practitioners and government agencies alike. The examination of these studies, has therefore given further weight to the hypothesis that there is a relationship between information access and information management. However, as most of these studies have only stated the existence of this relationship, they have failed to shed any light on the actual nature of this relationship. As a result of this, important questions raised by the case study, such as: what is the exact relationship between information access and IRM?; what effects do different management tools have on access to information?; and what role can IRM procedures play in creating a co-ordinated system of access? remained unanswered.

The acknowledgement by the LIS community of the connections between information access and information management, but its failure to examine these in any detail highlights a somewhat surprising relationship between these two areas of research. If for example, one examines the subject areas of freedom of information and information management, it can be seen that whilst both are considered core areas of Information Science research,[112] their study is carried out by distinct groups both inside and outside the IS field. Research into freedom of information for example, is carried out by a number of academic disciplines including Law, Political Science and Public Administration[113] and as a result of this has tended to focus on the theoretical and legal arguments surrounding freedom to information. Likewise research into FOI within the field of Information Science has also been dominated by these concerns

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[112] The International Encyclopaedia of Information and Library Science has entries for both information management (Wilson: 1997) and freedom of information. (Frankel: 1997b)

[113] These academic disciplines were identified as carrying out research into freedom of information by using 'freedom of information' as a keyword search on the SSCI and ranking the retrieved journals by subject area. This identified Information Science and Library Science, Law, Political Science,

and has tended to focus on the arguments for having freedom of information and the specifics of FOI legislation, rather than on the practicalities of achieving it.[114]

Information management research, like that into freedom of information, is also carried out by a number of academic disciplines including Computer Science, Business Studies and Management Science, as well as Information Science. (Wilson: 1997) One result of this has been that each discipline has tended to focus on its own specific area of expertise, so that Computer Science has focused on the information technology aspects of information management, whilst Business Studies has concentrated on the management of information within commercial organisations. This specialisation has also been mirrored within Information Science, where the tendency has also been for different groups to concentrate on different aspects of information management. As a result of this, specific areas like records management, information technology management, information resources management, information management in organisations and information management in government, although all part of the same overall IM field, are seen as distinct areas of research.[115]

In examining the fields of freedom of information and information management, a number of academic disciplines have been highlighted as carrying out research in these two areas. This diversity can be seen as an important characteristic of both fields and one that has shaped their research and development. The various academic disciplines that carry out freedom of information and information management research have to a large extent focused on their own particular areas of expertise and as a result of this, the research in both areas has tended to be fragmented. This fragmentation can also be seen within the Information Science discipline, where research into FOI and IM are carried out by distinct groups, who appear to be more closely aligned with more similar outside academic disciplines, than other areas of research within Information Science.

This separation between the areas of freedom of information and information management research was highlighted in the results of a number of database searches.[116] These searches

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Communication Studies and Public Administration as the top five subject areas publishing on FOI. A full list of the search results can be found in Appendix 8.

[114] See for example Moore & Steele: 1991, Eisenschitz: 1993 and Oppenheim: 1997

[115] This can be seen in the article by Goodman who examined the relationship between records management and information management. He identified a number of areas where records management and information management converged but also areas where there still disparity between the two. (Goodman: 1994)

[116] A full list of the search results can be found in Appendix 8.

were carried out using SSCI and attempted to examine the relationship between freedom of information and information management by looking at the journals where FOI documents were published. The results of this search showed that FOI research was published in sixty six different journals but only one of these was concerned with information management. This was the journal Information & Management, which contained one relevant document and was ranked at number thirty one. Using these results, a further search was then carried out to examine the different subject areas where these journals were located. This showed that documents on freedom of information were primarily found in the LIS, Law, Political Science, Communication and Public Administration literature. Finally, a further search was carried out to examine the journals cited by articles on freedom of information and again these were identified as being mainly government information, legal, political and administration journals. These results reveal that research into freedom of information is carried out by a variety of academic disciplines but that the information management field appears to have little connection with it. In light of this, research into freedom of information and information management can be seen as being carried out by distinct groups with little crossover between them. This separation can also be seen within Information Science, where despite the acknowledgement of the relationship between the two subjects, there has been a lack of detailed research carried out examining the relationship between them.[117]

This examination of the literature has highlighted an absence of detailed research into the relationship between information access and information management. This absence can be seen as a significant gap in the LIS literature and one that needs to be addressed if a more detailed understanding of the effects of information management on information access policies is to be gained. This thesis attempts to address this issue by investigating the relationship between information access and information management in relation to the case study examined in this research and by devising a model that can be used to examine the links

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[117] This is not the first time that a gap in the research examining the relationship between two closely linked fields, has been highlighted in the LIS literature. Ellis, Allen & Wilson for example, drew attention to a similar gap when examining the relationship between Information Systems and Information Science. They highlighted similarities in the research carried out by both disciplines into user studies and information retrieval. In light of this, they identified Information Science and Information Systems as conjunct subjects but revealed that they were still disjunct disciplines, due to differences caused by the nature of scientific disciplines, institutional pressures and the desire of some members to remain separate, so that they could continue to advance their own field's individuals and institutions. The authors however, argued that these differences did not create any real conflict for the two disciplines and that as a result of this, greater steps should be taken towards integration so that the benefits could be reaped by both fields. (Ellis, Allen & Wilson: 1999)

between information management and information access policies. However, before setting out this model there is one further relationship that needs to be examined and that is the association between policy implementation and IRM.

4.7 Policy Implementation and Information Resources Management

The relationship between policy implementation and IRM is, in many ways easier to identify that than between access and IRM, as IRM concepts are usually implemented as part of a government or organisational policy and are therefore subject to the same process and stages as other policies. In light of this, the relationship between policy implementation and IRM can be more easily recognised and understood. However, despite this fundamental connection there also appears to be an absence of any significant body of research examining the effects of implementation on IRM. Once again a series of database searches were used to examine the co-occurrence of these two terms in the social science literature. These searches were carried using the SSCI and again retrieved only a small number of documents that contained both search terms. The results of these searches can be seen in Table 4.4.

Table 4.4   **SSCI search results examining the relationship between policy implementation and information resources management**

Search Term 1	Search Term 2	Documents retrieved using the 'OR' connective	Documents retrieved using the 'AND' connective	Dice's Coefficient
Information Management	Policy Implementation	1320	0	0.000
Information Management	Implementation	17384	61	0.007
Information Management	Information Policy	1234	5	0.008
Information Resources Management	Policy Implementation	440	0	0.000
Information Resources Management	Implementation	16560	5	0.000
Information Resources Management	Information Policy	356	3	0.016

The retrieval of no documents using the search term 'policy implementation' led to further searches being carried out using the broader 'implementation' keyword. This resulted in the retrieval of a number of documents, particularly in relation to 'information management' and 'implementation'. However, on closer examination most of these documents were concerned with the implementation of information systems, rather than policies to manage information and it was only by using the keywords 'IRM' and 'implementation,' that a small number of relevant documents were located. The use of the search terms 'IRM' and 'information policy' also highlighted a number of other documents that examined the relationship between IRM and the policy process.

Those documents identified as examining information policy and information resources management were found predominantly in the IRM literature. Caudle, for example, used the policy process as a framework to investigate the management of information resources in State governments. This enabled her to focus on the different IRM activities taking place at each stage of the policy cycle and compare them with the IRM practices of other State governments. (Caudle: 1990) The policy process has also been used to examine Federal IRM policies. A number of studies have been carried out that have looked at the adoption and development of Federal IRM policies and many of these have used the policy process to evaluate individual pieces of legislation. Plocher, for example, focused on the adoption and implementation stages of the policy process to evaluate the 1980 Paperwork Reduction Act and examine how the 1995 reauthorization could address some of the problems that been highlighted. While Caudle focused on the adoption of Federal IRM laws and policies and looked at what conditions were necessary within different government departments to enable them to be successfully adopted. (Caudle: 1988)

The use of the policy process as a framework for examining IRM policies can therefore be seen in a number of studies. These studies have tended to focus on a particular stage of the process and examine the development of the IRM policy at that stage. Research has therefore been identified in relation to all the stages of the policy process, however, there does appear to be a general agreement within the literature, that the implementation stage is particularly important for ensuring the success of IRM. The identification of the implementation stage as a key area for ensuring the success of IRM, appears to have arisen in response to the first IRM policies introduced by the US government. In particular, the focus of the first Paperwork Reduction Act on the concepts, rather than the practicalities of IRM, led to a number of problems when the policy was implemented. The lack of actual procedures set out in the PRA meant that the Office of Management and Budget, the body responsible for the

implementation of IRM, was able to decide what policies to introduce. This meant that policies were developed to support the government's political beliefs rather that to create an integrated system of information management and meant that the impact of IRM was not as great as originally anticipated.[118] (Plocher: 1996) Implementation was also identified by Bertot and McClure as a key stage in the success of IRM. They examined a number of IRM policy instruments including the Paperwork Reduction Act, OMB's Circular A-130 and the Information Technology Management Reform Act and saw implementation and particularly problems of who was responsible for implementation, as a key area that needed to be addressed. (Bertot & McClure:1997)

Implementation has therefore been identified from the literature as a key stage in ensuring the success of IRM policies. Having identified this, a number of studies can be found that attempted to establish the factors that were critical to the success of IRM policies. Ryan, McClure and Wigand for example, identified a number of factors which they saw as being crucial to the success of IRM. These included the need to pay more attention to electronic service delivery, the need to position IRM more effectively within agencies and departments, the need to modernise the information infrastructure, the need to procure IT in a timely fashion, the need to encourage partnerships between agencies and the engage in systematic IRM education and training. (Ryan, McClure & Wigand: 1994) Caudle meanwhile identified planning and the development of implementation strategies as the key factor in IRM success. She argued that planning and policy strategies were particularly important, both for establishing an overall vision of IRM and for successfully implementing the individual parts of the policy. (Caudle: 1990) Strategic planning was also seen by Wilson as important for ensuring a successful IRM policy, as this enabled various information management strategies[119] to be examined together, so that any implementation problems could be identified. (Wilson: 1997) Policy planning was therefore seen as important for setting out what IRM hoped to achieve and what actually needed to be done, both of which were seen as the key to building a successful IRM policy.

Strategic planning can therefore be seen as an important aid to implementation, as it can be used to address the problems that occur specifically at this stage. Implementation sees a policy move from the political sphere, where it has been developed and adopted, to the administrative sphere, where it is actually implemented and this transition can result in

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[118] This was examined in Section 4.5.4.

[119] These strategies could include those for the information resource, for IT, for records management, for finances and for personnel.

significant changes occurring to the policy. Each of these agencies will bring their own values, beliefs and objectives to the policy and as the chain between those who devised the policy and those that implement it grows, then the more chance there is of the policy being significantly changed and different outcomes achieved.[120] Planning helps to prevent these changes, as it allows a detailed plan of the policy to be built up so that people know exactly what needs to be done, when it needs to be done and how it needs to be done. It also means that enough time and resources are allowed for IRM activities and offers the chance for various strands of the same policy to be examined together, so that different activities can be carried out at the right time and in the right order. Strategic planning has been seen as the key to successful policy implementation by a number of writers who have then detailed the specific points that needed to be addressed as part of this planning process. This idea has been used by a number of writers in relation to information issues, including DeSanti who used the information life cycle to organise the strategic planning for the implementation of a electronic dissemination policy. This idea was also put forward in relation to IRM by Hernon.[121]

From a review of the IRM literature the link between policy implementation and IRM can be clearly seen. Although the literature linking IRM to policy implementation remains quite small, there are a number of studies that examine different aspects of the policy process in relation to IRM. From these studies it can be seen that IRM policies are subject to the same stages as any other policy and as a result of this, the implementation stage of IRM policies is as likely to be affected by the issues of control, decision-making, implementation techniques and organisational values as any other government policy. This has resulted in IRM practitioners adopting many of the same approaches to address these issues as other policy areas and in particular, to the identification of strategic planning as one way in which to control the direction and implementation of IRM. Policy implementation can therefore be seen as a key stage in ensuring the success of IRM practices. Having already established, in the previous section, the link between information access and IRM, one can now see that the implementation of those IRM practices will also have a significant affect on the way information can be accessed, particularly if that IRM policy is subject to changes during the implementation stage or is implemented differently by separate agencies.

In examining the case study, the two issues of IRM and policy implementation were highlighted as having a significant effect on information access and the author went on to

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[120] This was examined in Section 4.4.6.

[121] These were both examined in Section 4.5.6.

hypothesise that these would also affect the success of other information access policies. A review of the LIS literature has confirmed the links between these three issues of information access, IRM and policy implementation and this review will now be used as the basis for a model that can be used to explore information access policies in general. This model will be examined in the following section before being employed in the investigation of the specific case study used in this research.

4.8   A Model for Examining Information Access Policies

Having identified a link between information access policies and the two issues of policy implementation and information resources management in the case study, the main concern of this chapter has been to examine these relationships through a review of the literature. The previous two sections have therefore been used to establish the existence of a relationship firstly, between information access and information resources management and secondly, between policy implementation and information resources management. However, this review also highlighted the failure of the LIS literature to examine these relationships in detail and so the actual effects that policy implementation and information resources management had on information access policies remained largely unexplored. This in turn, also meant that no established research framework could be identified to analyse the interactions between these issues and so this section sets out an 'information access model', which is then used as the framework on which the investigation of the relationships between information access, policy implementation and information resources management in the case study, is based.

The 'information access model' draws on ideas from the fields of public policy and information resources management to create a hybrid framework that can be used to examine information access policies. At its base it employs the policy process model, which has already been examined in Section 4.4.4. This model is widely used within the public policy field to examine the evolution of policy and has recently also begun to be employed as a framework in information policy research.[122]

The policy process model is based on the assumption that an issue follows a set path, made up of a number of stages, through the political system. These stages are generally labelled as problem identification, policy formulation, policy adoption, policy implementation and policy evaluation.[123] In employing this model the researcher is able to impose a rational structure on

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[122] See for example, Rowlands and Turner: 1997 and Turner: 1999.

[123] See for example Anderson: 1990.

the 'policy process', which in turn helps to reduce the complexity of policy making by separating it into distinct stages. The employment of this structure then enables the different issues, actors and decisions that occur at each stage of the policy-making process, to be examined in detail. The policy process framework is therefore a practical way of limiting the scope of policy research, as it allows the researcher to focus on individual stages and the activities that occur within them.

There are, however, a number of limitations with using the policy process framework for research.[124] One of the main criticisms levied against this model, is that it creates a somewhat artificial view of policy-making. Whilst the different stages identified in the process model certainly exist in real world policy-making, they are by no means as distinct or as clear cut. In the real world, these stages often overlap with decisions being taken in relation to a number of stages at once, rather than in the sequential order set out in the model. Policy-making is therefore far more complex and 'messy' in the real world and the use of the policy process model to examine this, means that only a simplified picture of the policy process can be revealed. However, as long as these limitations are understood, the policy process model can still be an effective framework for investigating the different activities that occur at each stage of the policy process and the effects that these have on the eventual policy outcome.

To examine the relationship between information access policies and information management issues, the policy process model is then combined with the information life cycle framework, employed in the field of information resources management. This concept of the information life cycle was discussed in Section 4.5.6. In combining these two ideas, the relationship between information access and information resources management can then be examined at each stage of the policy process, so that the affects of different information management issues on the overall outcome of the policy can be analysed.

In the 'information access model', the information life cycle framework is divided into six distinct stages. These stages were identified from the literature review, as being of particular importance for information access policies. These life cycle stages are:

- The collection of information;
- The organisation of information;
- The storage of information (active storage);
- The retrieval and use of information;

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[124] These limitations were examined in Section 4.4.4.

- The dissemination of information;

- The retention (inactive storage) and disposition of information.

These six life cycle stages, are then used to identify the individual management issues that need to be examined to create a successful information access policy. These management issues are addressed using a series of questions connected to each life cycle stage. DeSanti also used this technique to develop a framework that could be used to devise a successful information policy and so a number of the questions listed below are adapted from his research.[125] (DeSanti: 1993)

Before examining these individual management questions however, it is first necessary to address some of the more fundamental issues relating to information access, such as the policy's aims and objectives. As it is only by having a firm grasp of these issues, that the correct information management solutions can be identified and a successful information access policy be introduced. Thus the first questions that would need to be addressed in relation to any information access policy are:

- What are the goals of the information access policy?

- What are the basic legislative requirements that the information access policy must fulfil?

- Who are the stakeholders and beneficiaries of this information access policy?

Only once these fundamental questions have been addressed can the more practical information management issues be examined. These information management issues are now set out as a series of questions in relation to each life cycle stage.

Collection of Information

- Is the information collected reliable, accurate, complete and of high quality?

- How is the agency organised to manage the collection of information?

Organisation of information

- How will the agency organise the information?

- Will this organisation encourage ease of use?

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[125] DeSanti was concerned with developing a successful information dissemination policy.

- How will standards for organisation be set?

- What procedures will be put in place to make sure that these standards are being met?

- To what extent has the agency established procedures for ensuring the confidentiality of information?

Storage of information (Active)

- How will the agency store the information? Will this be in paper or electronic records?

- Has the agency addressed any space constraints?

- To what extent will storage encourage ease of access and ease of use?

Retrieval and use of information

- How user friendly is the information access policy? To what extent does the access policy provide browsability, good organisation and retrieval of information and physical access and availability?

- To what extent can the user be assured of the reliability of the information?

- Is the information made available in a timely manner?

- To what extent is the data understandable in terms of format, labelling and content?

- How flexible is the system in allowing the user to work with the information?

- To what extent will the agency provide tools such as indexes and user guides, to help people in their use of the information?

Dissemination of information

- To what extent has the agency decided to disseminate information?

- How will this information be disseminated? In what format will it be produced? What will its content be? Where will it be disseminated?

Retention (Inactive Storage) and Disposition

- Has a records management programme been established?

- Have records management considerations such as storage costs and space management been addressed?

- What procedures have been put in place for deciding when documents will be disposed?

In addition to these specific questions, there are also a number of other, more general, management issues, such as planning, technology and quality control, that would need to be addressed in relation to every life cycle stage. Planning, for example, would need to be examined to ensure that all information management practices were linked to the objectives of the information access policy and that the policy was given proper oversight. The use of technology would need to be examined to make sure that the different requirements of each life cycle stage were met and that these did not create problems for the other stages. While quality control would need to be addressed at each life stage to make sure that the same standard of service was being delivered to all users of the information access policy. By addressing all of these questions, a number of 'micro IRM policies' would be developed at each stage of the information life cycle and these would then work towards supporting the main information access policy.

The connection of the policy process model and the information life cycle in the 'information access model' has led to the creation of a novel framework that can be used to examine the relationship between information access and information resources management. The main elements of the 'information access model' have been described above, however, these can also be represented diagrammatically, as can be seen in Figure 4.7. In this diagram, the information life cycle is shown in relation to the implementation stage of the policy process and is used to demonstrate how this model could be employed to highlight the various information management issues that would need to be addressed. However, the same life cycle framework could also be employed at every other stage of the policy process to address these management issues and in doing so would help to ensure the development of a consistent and successful information access policy.

The use of the 'information access model' to identify the different stages of the policy process also enables different interpretations of the policy process to be employed in the analysis of information access policies. These different interpretations can be employed to gain further insight into the policy process either as a whole or in relation to each individual stage. In this research, the policy process model is used to investigate the implementation of information access policies and this allows two different interpretations of policy implementation to be examined. These two interpretations, the top-down and bottom-up approaches to policy implementation, were examined in Section 4.4.6. The top-down approach is linked closely to the rational approach to policy-making and sees implementation as essentially a planning and

Figure 4.7   The 'Information Access Model'

ACCESS TO
INFORMATION
↓
POLICY PROBLEM:

		Design IRM Micro-Policy	Implement IRM Micro-Policy	Evaluate IRM Micro-Policy
Define Problem				
Identify alternative solutions				
Evaluate Options				
Select policy option	**IRM Problem:**			
Implementation	**Collection**	→	→	→
	Organisation	→	→	→
	Storage (Active)	→	→	→
	Retrieval and Use	→	→	→
	Dissemination	→	→	→
	Retention and Disposition	→	→	→
Evaluation	**IRM 'Solution'**			
Refine / Terminate Policy				

POLICY GOAL

control process, whereby the employment of the right tools and strategies in a co-ordinated way can lead to the successful implementation of policy. While the bottom-up approach sees implementation more as a problem-solving exercise, where those on the ground can dramatically alter the outcomes of policy through their day-to-day decision-making. In using these interpretations to examine the implementation of information access policies, the effects of various issues, such as planning or consensus building, can be examined.

Finally, in addition to helping to examine the relationship between information access policies and IRM, the 'information access model' could also have an important use in evaluating information access policies. The utility of the 'information access model' as an evaluative tool, lies in its employment of a rational framework for achieving policy goals. The employment of this rational or top-down approach, sees policy implementation as a planning process whereby the employment of the right strategies in a controlled and co-ordinated way will lead to the successful implementation of an information access policy. This interpretation of policy implementation was examined in Section 4.4.6. In its identification of the various information management issues that need to be addressed, the 'information access model' can be seen as a prescriptive framework which sets out the various requirements for implementing a successful information access policy. This also means that it can be used as a yardstick to measure other information access policies and so could play an important role in evaluating their success.

Having identified, from the literature review, the absence of any suitable frameworks to examine the relationships between information access policies and information resources management, this research proposes the use of the 'information access model' to examine these relationships and evaluate the impact that information management issues can have on the success of an information access policy. This 'information access model' is now deployed to examine and evaluate the IPC registers.

Part 2 (b):

Primary data gathering.

Chapter 5.   Research Methods

5.1   Introduction

This chapter sets out the research methods used to examine the IPC registers and in particular, the two issues of policy implementation and information resources management, which were identified in the literature review as affecting information access policies. This investigation into the IPC registers was underpinned by the 'information access model', which was used to provide a clear structure for the examination of these issues, and as a method for evaluating the success of this information access policy. The first section of this chapter examines the IPC registers, which formed the case study for this research, and the 'information access model' which was used both to organise and evaluate the case study findings. The second section then examines the research methods employed in the data collection and describes the structure of the data analysis conducted in Chapters 6 and 7. The final section sets out the evaluation carried out into the research findings which can be found in Chapter 8.

5.1.1   The case study

The exploratory research conducted into the IPC registers, highlighted a number of issues that could be seen as having a detrimental effect on the way in which information was made available to the public. In particular, policy implementation and the employment of different information management techniques, were identified as being of particular importance to the success of the registers. Having established this in relation to the IPC registers, a review was then carried out examining the relationships between information access, policy implementation and information resources management in the wider literature. This review found references to the relationship between these three issues, but failed to uncover any detailed research, examining the effects of policy implementation and IRM on information access policies. This was therefore identified as a significant gap in the LIS literature and one which this research hoped to address.

Having identified the existence of a relationship between information access, policy implementation and IRM, both in the initial investigation into the IPC registers and in the LIS literature, this study then went on to examine this relationship in greater detail. This examination was carried out using a case study and as a relationship between these three issues had already been identified in relation to the IPC registers, these were now chosen as

the case study for this research.[1] The selection of the IPC registers, as the case study, offered a number of advantages for research into these issues. Firstly, because the IPC registers were part of an established government policy, this meant that they could be used to examine the way in which an information access policy had been created and implemented. Secondly, because the registers were located in individual local authority offices throughout England and Wales, this meant that their implementation could be examined in a large number of organisations and finally, because the register was held both by the Environment Agency and local authorities, this meant that comparisons could be made between their implementation by central and local government. The IPC registers therefore provided both a useful and practical case study, through which the relationship between information access, policy implementation and IRM, could be examined and this allowed a number of specific questions to be asked. These questions included:

- What is the relationship between information access and information resources management?

- What effect does policy implementation have on the creation of a successful information access policy?

- Do different implementation methods effect the outcome of information access policies?

- Is there a difference in the implementation of information access policies by central and local government?

- What effect does the employment of different information management techniques have on information access policies?

- Are some information management techniques more successful than others?

5.1.2   The 'information access model'

The failure of the literature review to highlight any established research frameworks that could be used to examine the relationships between information access, policy implementation and information resources management, led to the development of the 'information access model'. This 'information access model', which was set out in Section

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[1] The case study is a well established method of social science research and is of particular use for examining contextual conditions as well as the phenomenon of study. Case study research does not dictate what form of data collection is used, this can be quantitative or qualitative, but it does on the whole use more than one source of evidence. (Yin: 1993)

4.8, was then used to drive the research examining the implementation of the registers for Integrated Pollution Control.

A number of ideas from public policy and information resources management were drawn together in the 'information access model', to form a hybrid framework that could specifically be used to examine information access policies. At its base, the 'information access model' employed the policy process framework to examine the development of information access policies. This model was already well established as a research tool within the field of public policy and offered a number of benefits for this type of research. Most importantly, the process model enabled the analyst to apply a rational structure to policy-making, which allowed the different stages of the policy-making process to be identified and examined individually. The process model has been criticised as creating a somewhat artificial view of policy-making, but despite this, remains an important research tool for the analysis of public policy.[2] (Parsons: 1995)

The employment of the policy process framework at the base of the 'information access model', allowed the researcher to focus on the individual stages of the policy process, where the information life cycle could then be used to highlight the different actions and activities that need to be addressed or carried out at each stage. In this research, the 'information access model' was used to focus attention on the implementation stage, and the information life cycle was employed to identify the different information management activities that needed to be addressed. The use of the 'information access model' to focus on the implementation stage of the policy process, also allowed two different interpretations of policy implementation, the top-down and bottom-up approaches, to be employed. These could then be used to gain further insight into the effects that different methods of implementation had on the policy outcome. The 'information access model' had therefore been devised to examine information access policies and investigate the relationship of information access with policy implementation and information resources management.

The 'information access model' has two functions in this research. The first is to act as an investigative tool through which the relationship between information access, policy implementation, and information resources management can be explored. The second is to act as an evaluative device which can be used to measure the success of information access policies. The purported value of the 'information access model' as an evaluative tool comes from its ability to prescribe the steps that need to be taken for successful policy

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[2] The problems with using the policy process model have already been discussed in Section 4.4.4.

implementation. These prescribed steps can then be used as a yardstick against which real-life information access policies can be evaluated. To ensure that a successful evaluation of the IPC registers could be carried out, the 'information access model' has been placed at the heart of the methodology employed in this research. In doing this, the 'information access model' has then been used as the basis for the design of the research tools employed in this study thus making sure that the data collected from the questionnaires, case study visits and interviews, could all be used to evaluate the success of the IPC registers as an information access policy.

5.1.3   Examining the case study

The analysis of this case study is carried out using a range of evidence, including primary data gathered from questionnaire returns and from the case study visits and interviews. This evidence is then analysed using the 'information access model' which firstly allows an investigation to be carried out into the relationship between information access, policy implementation and information resources management, and secondly, allows the success of the IPC registers to be evaluated.

The analysis of the IPC registers was carried out using questionnaire responses and a series of case study visits and interviews. The questionnaires were sent out to the 321 local authorities and sixteen Environment Agency offices with a register and were designed to build up a broad picture of the IPC registers throughout England and Wales, while the twelve case study visits and seven interviews were designed to give a more detailed insight into the information on the register and the way in which the registers had been implemented. All of these research methods were based on the 'information access model' and were designed to build up a detailed picture of the IPC registers and the ways in which the issues of policy implementation and IRM were affecting their success. The analysis of the case study data is set out in Chapters 6 and 7; Chapter 6 analyses the questionnaire responses, case study visit data and interview transcripts for the local authority registers, while Chapter 7 analyses the questionnaire responses, case study visit data and interview transcripts for the Environment Agency registers.

5.2   Primary Data Collection

The data used to analyse the IPC registers was collected in three different ways: firstly, from the local authority and Environment Agency questionnaire returns, secondly, from the eight

local authority and four Environment Agency case study visits and thirdly, from the three local authority and four Environment Agency interviews.

5.2.1   Questionnaires

Questionnaires were chosen as the primary method of data collection for a number of reasons. Firstly, they provided an efficient and economical way of collecting data from every IPC register in England and Wales.   There are currently 321 local authority and sixteen Environment Agency registers and to conduct a personal or telephone interview with each of these, would have been costly and time-consuming, both to collect and analyse.   Secondly, questionnaires could be used to retrieve data that could be easily tabulated and as a result of this, would allow easy analysis and comparison of results. Thirdly, questionnaires could also be used to ask more open questions and gather respondents opinions about certain issues, and finally, because questionnaires could be returned anonymously, it was hoped that this would encourage people both to take part in the study and answer questions truthfully. (Patten: 1998)

Questionnaires were sent to those people responsible for the day-to-day running of the IPC registers.   This allowed a wide-range of information about the registers to be collected, including factual information and opinions about their success. Having already established the legal requirements of the IPC registers in Chapter 3, the questionnaire built on this by looking at their development over the last eleven years.   In particular, the questionnaires focused attention on the key areas of policy implementation and IRM, so that the interaction between these issues could be examined.   The analysis of the questionnaire responses is examined in Chapters 6 and 7.

5.2.2   The problems of using questionnaire research

Having outlined the advantages of using questionnaires for data collection in the previous sub-section, it is also necessary to focus on the problems that arise from this type of research. One of the major disadvantages of using questionnaires for research, is that the response rates are often low, especially, as in this case, when questionnaires are mailed to respondents unknown to the researcher. The fact that not everyone sent a questionnaire will respond to it, can create problems as this can lead to bias in the response data, something which needs to be addressed in the data analysis. (Patten: 1998)

The second disadvantage of using questionnaires for data compilation, comes from the type of questions that are most usefully employed in this type of research. Questionnaires work best

when employing closed questions, where respondents choose from a limited number of answers or are only required to give brief written answers. The employment of these types of questions, allows respondents to move quickly through the questionnaire giving responses that immediately come to mind. This means that the data gathered in questionnaires tends to provide a snapshot of the area being considered, rather than an in-depth and considered viewpoint. Other methods of research, such as the semi-structured interview, are able to prevent these problems by getting respondents to spend time thinking about a question and by exploring related issues, but this is not possible in questionnaire research. Instead in response to these issues, there can be a tendency in questionnaire research to employ large numbers of open questions instead, but these too can create their own particular problems. Large numbers of open questions can discourage respondents from completing the questionnaire, as these types of questions can make respondents think that it will be very time consuming to fill in. Open questions can also cause problems with the questionnaire analysis, as these types of answers are time consuming to analyse and difficult to interpret, particularly when there are large numbers of responses. (Robson: 1993 and Patten: 1998)

One way to try address both these problems is to provide a mix of different questions in the questionnaire. A mixture of open and closed questions has the advantage of slowing the respondent down, which will hopefully result in more considered opinions being given. It will also help to keep the respondent's attention focused on the questionnaire, as it will make it both more visually and mentally stimulating and thirdly, it can prevent some of the difficulties that arise from the data analysis of large numbers of lengthy open questions. However, although this type of question pattern will result in some improvements, it will not totally eliminate these problems and so an awareness of them is still needed. (Robson: 1993 and Patten: 1998)

One further problem with questionnaire research is that, to a certain extent, the data retrieved is superficial. This is, firstly, because there is no check on the honesty or seriousness of the responses. With other methods of research, such as personal interviews, contact with the respondent can give clues as to whether they are answering questions honestly or if they are simply giving answers that are socially acceptable, but as there is usually no contact with the questionnaire respondent, there is no check on the answers that they give. This lack of contact with the respondent can also cause other problems. The employment of 'check box' questions in questionnaires has certain advantages for tabulation and analysis, but these can also cause problems, especially when the predetermined boxes fail to give an answer that the respondent finds appropriate. In questionnaire research, there is no chance to explore the question or the respondent's answer in more detail and as a result of this the respondent will

either fail to answer that particular question or provide an answer that does not give a true representation of their situation or opinions. The lack of contact between researcher and respondent can therefore cause a number of problems for research and means that questionnaires need to be clearly constructed, with unambiguous instructions and careful wording of questions, if meaningful results are to be retrieved. (Robson: 1993)

These are just some of the problems or disadvantages that can arise from questionnaire research. They are highlighted here as each can significantly affect both the collection and analysis of data and as a result of this, need to be considered at every stage of research. The problems highlighted here emphasise the need for the researcher to spend as much time as possible on the questionnaire design, to ensure that these problem areas are addressed. The design stage is therefore crucial in ensuring that the questionnaire is clear and unambiguous and that the answers given can lead to some meaningful conclusions being drawn. The design phase for the questionnaire used in this case study research, will now be examined.

5.2.3   Questionnaire design, respondent identification and data collection

Despite the problems with questionnaire research highlighted above, it was still felt that this offered the most practical method for carrying out the examination of the case study, as it enabled every IPC register in England and Wales to be contacted. They could also be used to focus attention on the key areas of information access, policy implementation and information resources management, and would produce results that could be easily analysed and compared. Having decided to use questionnaires to examine the case study, there were then three main phases to this part of the research. The first was the questionnaire design phase, the second the respondent identification phase, and the third the data collection phase.

Questionnaire design

The first phase in carrying out this part of the research was to design the questionnaire. As questionnaires formed the primary mechanism by which all IPC registers would be contacted, it was particularly important that the final questionnaire contained the right questions and was easy for respondents to fill in. As a result of this, the questionnaire employed in this research went through a particularly long design phase, which took into account both the author's growing knowledge of the IPC registers and developing ideas on information access, policy implementation and IRM.

It was decided that two questionnaires would be developed, the first to be sent to each local authority with a register and the second, to each Environment Agency office with a register. Both of these questionnaires addressed the same issues and employed the same overall structure which was devised from the Chapter 3 literature review and the 'information access model' proposed in Chapter 4. There were however, slight differences between the two questionnaires. These differences arose mostly in the wording of the questions, but separate questions were included in some sections to address the different positions of the local authorities and the Environment Agency. The questions in both questionnaires were structured around the following six sections:

Section A: Respondent Information

This section asked for respondent's details and information about their place of employment.

Section B: Background Information to the Register

This section consisted of six questions which related firstly, to the legal requirements for the register, laid down in the Environmental Protection Act 1990 and secondly, to the location of the register either within the local authority or the Environment Agency office. These questions resulted from the literature review carried out in Chapter 3.

Section C: Promotion and Use of the Register

This section consisted of four questions which related firstly, to the promotion of the register, and secondly, to its use, both by the public and the staff, in the local authority or Environment Agency office where it was kept. These questions were again generated as a result of the literature review carried out in Chapter 3.

Section D: Implementation of the Register

This section incorporated seven questions relating to the implementation of the registers. This tackled issues such as consultation, planning, guidance and monitoring in both the local authorities and the Environment Agency. These questions were generated as a result of the literature review carried out in Chapter 4 and in particular were developed as a result of the ideas about policy implementation put forward in the 'information access model'.

Section E: Information Management

This section consisted of twenty questions in the local authority questionnaire and nineteen questions in the Environment Agency questionnaire relating to the management of information in the registers and the different techniques employed to do this. These questions addressed a number of issues including the size of the registers, the storage and organisation

of the registers, the accessibility and timeliness of the information found on the registers and the dissemination and disposal of this information. All of these questions were generated as a result of the literature review carried out in Chapter 4 and were organised using the information life cycle framework employed in the 'information access model'.

Section F: Experience and Impressions of the Register

The final section was made up of five questions which addressed the respondent's impressions of the register and their experience working with it. These questions addressed the financial and time costs of the register and asked respondents their opinion on its effectiveness in making environmental information available to the public. These questions were also generated as a result of the literature review carried out in Chapter 4.

The final versions of the questionnaires sent to local authorities and the Environment Agency, can be found in Appendices 11 and 12.

In questionnaire research, a pilot study is always recommended before the actual data collection is carried out. This can be carried out through a single pilot study, where the whole questionnaire is tested on a sample of respondents or, as was used in this case, through a series of pre-tests, whereby sections of the questionnaire were examined and discussions took place as to possible changes or improvements. (Bourque & Fielder: 1995) Because of the particularly long design period of the questionnaires, it was felt that a series of pre-tests would prove more useful than one single pilot study. These pre-tests were carried out in conjunction with the case study visits[3] and were used to discuss the individual sections of the questionnaire and identify any possible problems. As a result of this, each section went through a period of gradual development rather than rapid change, before the questionnaire was actually finalised.

Respondent identification

The second stage in carrying out the questionnaire research was to identify a list of respondents that the questionnaire would be sent to. Copies of the IPC register were maintained by the Environment Agency for all Part A processes, and by local authorities for the Part A processes located in their area.[4] The Environment Agency's copy of the IPC

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[3] These case study visits are examined in Section 5.5.2.

[4] This was discussed in Section 3.3.2

register was split between its eight Regions,[5] where it was located either at the Regional office or split further between smaller Area Offices. A list of the sixteen offices where the Environment Agency IPC registers were located, was obtained from the Environment Agency's Public Access Policy Manager.[6] A telephone call was then made to each of these offices to obtain the name of the person responsible for the IPC register.

The identification of local authorities with a copy of the IPC register was carried out using the Environment Agency's IPCIS index lists. These index lists were made available to the author by the Environment Agency's Public Access Policy Manager. The IPCIS index lists contained details of every IPC application made since the Environmental Protection Act came into force in 1991 and held the name of the relevant local authority for each IPC process. The data retrieved from these indexes was then analysed to provide a full list of the local authorities holding a copy of the IPC register. However, the creation of this list was not quite as straightforward as originally anticipated, due to the changes that had occurred in local authorities over the last ten years. As a result of this, further research had to be carried out, using both the internet and *The Municipal Yearbook and Public Services Directory*[7] to identify these changes, before a definitive list of the 321 local authorities with a copy of the IPC register was established.[8]

Having created this list of local authorities with an IPC register, the next step was to identify the person responsible for the IPC register at each local authority. From the early reviews of the literature examining the EPA, it had been established that the IPC register was, in most local authorities, located within the Environmental Health Department. Having found out this information, it was originally decided to contact each local authority by phone to obtain the name of the person responsible for the register, but this was to prove to be both costly and time consuming as in most cases, the author would have to speak to at least three or four people before the right information was obtained.[9] In the end these phone calls were abandoned and rather than send the questionnaire 'cold' to each local authority, the identity of the Head of every Environment Health Department was obtained from *The Municipal*

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[5] The eight Environment Agency regions are Anglian, Midlands, North East, North West, Southern, South West, Thames and Wales.

[6] A list of the locations of the Environment Agency registers can be found in Appendix 9.

[7] This is published yearly in London by Hemming Information Services.

[8] A copy of this list can be found in Appendix 10.

[9] In some cases, the author was unable to identify the person responsible for the IPC register in a particular local authority from these phone calls.

Yearbook and Public Services Directory and the questionnaire was sent, either by post or by email, to them, to be forwarded on to the appropriate person within their department.

Data collection

The third phase of the questionnaire research was the actual period of data collection. The questionnaires were sent out by post or email in two stages; the 321 local authority questionnaires were sent out in August 2001, and the sixteen Environment Agency questionnaires, in February 2002. Respondents were given between two and three weeks to return the questionnaires and those failing to do so by the end of the second week, were sent a follow-up letter or email. These follow-up letters substantially increased the response rates for both questionnaires. In the end, 158 local authority questionnaires were returned, a response rate of 49.2 per cent and fourteen Environment Agency questionnaires, a response rate of 87.5 per cent. These questionnaire responses were then analysed using the SPSS statistical package. A summary of the local authority questionnaire results can be found in Appendix 13 and the Environment Agency questionnaire results in Appendix 14.

5.2.4   Case study visits and interviews

In carrying out the examination of this case study, questionnaires had been used as the primary method for data collection as these offered the most efficient and economical way of contacting every IPC register in England and Wales. However, as was highlighted in Section 5.2.3, there were a number of disadvantages with using this type of research, and in light of this, a series of case study visits and interviews were also carried out to investigate the relationship between information access, policy implementation, and IRM. These case study visits were made to twelve IPC registers, of which eight were held by local authorities and four by the Environment Agency. Interviews were then conducted at three of the local authorities offices visited and all four of the Environment Agency offices.

The case study visits were primarily based upon the employment of observational techniques. The main advantage in using observational techniques as a research method, is its directness. Unlike questionnaire research, which can often include discrepancies between what a respondent says will happen and what actually happens, observation allows the researcher to see 'real life'. (Robson: 1993) Case study visits therefore enabled the author to observe the registers in their day-to-day setting, so that a clearer picture could be gained of where they were located, how much information they contained, and how they were actually managed. However, the use of these observational techniques, like any other research methodology, also

has a number of disadvantages. One disadvantage was that observational techniques could only be used to look at the actual register and failed to examine what was going on behind the scenes. As a result of this, interviews were also employed where possible, to add a further dimension to the case study research.

The case study visits resulted in seven interviews being carried out with a member of local authority or Environment Agency staff. These interviews allowed a more flexible approach to be taken towards the case study research as different issues could be addressed and people's responses investigated further. (Robson: 1993) These interviews therefore enabled the author to focus on the issues such as the use, promotion and arrival of information that would only be known by the staff in that particular local authority or Environment Agency office. The analysis of both the observational and interview data will be discussed in relation to local authorities in Chapter 6 and the Environment Agency in Chapter 7.

5.2.5 Visit identification, design and data collection

The case study visits were seen as adding a further layer of information to the questionnaire research. These visits enabled the author to investigate the chosen registers in more detail through observation and where possible, through interviews with the person responsible for the register. They were used to focus attention both on the practicalities of the register and people's opinions of its development and use over the last eleven years. Like the questionnaire research, there were also three main phases in carrying out the case study visits. These included the identification of the registers that would be visited, the design of the visits, and the actual data collection.

Case study visit identification

The first step in carrying out the case study visits was to identify which registers would be visited. As has already been discussed in Section 5.2.4, the IPC registers are held by every local authority with a Part A process and every Environment Agency region, so they could be found in 337 different locations in England and Wales. As a result of this and due to problems both of time and finance, the overriding factor that would decide what registers were visited was their geographical location. Eight visits were made to local authority registers and although the author did try to include different geographical locations, different types of local authorities and different sizes of registers in these visits, these were limited by time and budgetary constraints. The local authority registers visited as part of this research, can be seen in Figure 5.1.

Figure 5.1   Local Authority Registers Visited

Local Authority Registers	Interview conducted	Transcript No.
Southampton City Unitary Authority	√	1
Portsmouth City Unitary Authority	√	2
New Forest District Council	√	3
Coventry City Metropolitan Council		4
London Borough of Islington		5
Nuneaton and Bedworth District Council		6
Eastleigh Borough Council		7
Winchester City Council		8

Location was also a factor in choosing the Environment Agency registers that would be visited, but as there were fewer of these, the overriding consideration here was to visit registers located in different Environment Agency regions. A list of the Environment Agency registers visited, can be seen in Figure 5.2

Figure 5.2   Environment Agency Registers Visited

Environment Agency Registers	Interview conducted	Transcript No.
Thames Regional Office	√	1
Southern Regional Office	√	2
Midlands Lower Trent Area Office	√	3
North West Regional Office	√	4

Case study visit design

Having identified the IPC registers that would be visited, the second phase in carrying out this part of the research was to outline the framework that would be employed in the case study visits and interviews. The observational framework employed in the case study visits uses the same sections employed in the questionnaire research, but this time instead of asking specific questions, the case study visit framework highlighted a number of specific issue areas that needed to be addressed. As with the questionnaire research, the observational framework employed in the case study visits was based on the key issue areas highlighted in the 'information access model'. This visit framework was designed to give a broad structure to

the study of the case study registers and meant that rather than simply address very structured list of questions, the analysis carried out into the case study visits could be far more flexible whilst still keeping within some general guidelines. For the case study interviews a similar framework was also designed, again based on the 'information access model'. This also allowed more general discussions about the IPC registers to be carried out with the interviewee, whilst still allowing specific issue areas such as those raised by the information life cycle, to be addressed. A copy of the case study visits framework and the interview framework can be found in Appendix 15. The observational research framework focused on a number of issues centred around three main areas:

Section 1: Information on the Local Authority/Environment Agency Office

This section examined the background to the case study visit looking specifically at making an appointment to view the register, arriving at the register, and the attitude of the staff at the register.

Section 2: Background information to the Register

This section examined some of the background to the register by focusing on whether it fulfilled its legal requirements under the EPA, 1990. It therefore examined the specific issues of the location of the register within the local authority or Environment Agency Office, the reading area available and making photocopies.

Section 3: Information Management

This section examined the information management techniques employed to run the register by addressing a number of issues including the documents on the register, the size of the register, the storage of the register, the way it was organised, how information was made available, were any aides available, and was any other information made available to complement the register.

The interview research was also organised on the same lines as the questionnaire framework and focused on the following areas:

Section 1: The Promotion and Use of the Register

This section examined the promotion and use of the register. If first examined the promotion of the register and then looked at who was actually using it.

Section 2: Implementation of the Register

This section examined the implementation of the register by the council or Environment Agency office. This addressed issues such as planning, guidance and monitoring.

Section 3: Information Management

Again this section examined the management of the register and addressed a number of practical issues including how information was received, what documents were kept on the register, how the register was stored and organised, how people were helped to use the register, what other information was made available, and if any information had been removed.

Section 4: Experience and Impressions of the Register

Finally, the interviewees were asked for their experience of working with the register and their impressions of how effective it had been in making information on industrial pollution available to the public. They were asked about any specific problems that arisen in relation to their register and if they could think of any improvements that needed to be made.

Case study visit data collection

The case study visits were carried out at various points throughout the research, starting in November 1997 and ending in March 2002. Each one was arranged, by telephoning either the local authority or Environment Agency office to organise a date for the visit. On arrival at the office, the author was usually taken to view the register and on some occasions, was also able to conduct an interview with the person responsible for it. This however, was not always possible, as in some cases the person responsible for the register was unwilling to participate in the study, or unable to spare the time for an interview.

During the case study visits, detailed notes were taken about the register. These notes contained information of the situation of the register, its organisation and the information kept in each file. If interviews were undertaken during a visit then, detailed notes of this would also be taken based around the interview framework. These notes were then written up within forty eight hours of the visit to ensure their accuracy. The transcripts of the local authority case study visits and interviews can be found in Appendix 16 and of the Environment Agency case study visits and interviews in Appendix 17.

5.3   Data analysis

The analysis of the IPC register case study is split into two chapters. Chapter 6 examines the local authority research findings, while Chapter 7 examines the Environment Agency findings.

The analysis of the local authority case study findings aims to address a number of research questions. These are:

- Is the local authority questionnaire data valid and reliable?
- Is there any underlying structure in the local authority data set?
- If yes, what are the issues responsible for this underlying structure?
- Are these issues also highlighted by the case study visit data and interview transcripts?

Chapter 6 is therefore organised around these research questions.

Once the validity and reliability of the local authority questionnaire data had been examined, the main focus of the data analysis was to see if any underlying structure could be detected in the questionnaire data. To carry out this investigation, three multivariate techniques were employed; hierarchical cluster analysis, discriminant analysis, and factor analysis, and the results of these experiments were then used to develop some preliminary conclusions about the IPC registers. In these preliminary conclusions, a number of issues were highlighted as being responsible for the variance in the local authority questionnaire data and an attempt was then made to corroborate the effects of these issues by carrying out further analysis of the questionnaires, case study visits and interview data.

Having carried out the analysis of the local authority data, Chapter 7 then examined the Environment Agency case study findings. Unlike Chapter 6, where the main focus of the analysis was to examine the variance in the local authority data, the data collected from the Environment Agency instead highlighted the uniformity of their IPC registers, and in light of this, multivariate analysis was considered inappropriate. The analysis of the Environment Agency case study was therefore carried out by combining the questionnaires, case study visit and interview data and analysing these in relation to the issues that had been raised in Chapter 6, as being responsible for the variance in the local authority data. This analysis

could then be used to highlight the differences between the local authority and the Environment Agency case study findings.

5.4   Discussion of Research Findings

A discussion of the research findings can be found in Chapter 8. This chapter examines the local authority and Environment Agency cases study findings, which were set out in Chapters 6 and 7, in light of the 'information access model'. It examines the main theories underpinning the 'information access model' and sets out the reasons for its development. It then sets out its purported value both as an investigative and evaluative tool. Having set out the functions and value of the 'information access model', it is then used to investigate the IPC register case study, where it enables attention to be focused on the three key issues of information access, policy implementation, and information resources management. In focusing attention on these issues, the 'information access model' is then used to evaluate the success of the IPC registers. Finally, the validity of the 'information access model' itself is examined. In carrying out this validation, the strengths and weaknesses of the 'information access model' as an evaluative research device are considered and its utility as a framework for information policy research analysed.

Chapter 6.   Local Authority Case Study Findings

6.1   Introduction

This chapter examines the IPC registers set up by local authorities in England and Wales, through an analysis of the data collected from the questionnaire returns, case study visits and interview transcripts. This chapter is divided into five sections. The first section sets out the research questions addressed in this chapter. The second section, sets out the data collected from the local authority questionnaire survey and governmental statistical sources and explores both its validity and reliability as a data set. The third section examines the analysis of this data, through the use of a number of multivariate techniques, including hierarchical cluster analysis, discriminant analysis and factor analysis. The fourth section examines the preliminary conclusions drawn from the multivariate analysis and the final section attempts to validate these preliminary conclusions, by drawing on the data collected from the case study visits, interviews and questionnaire returns.

6.2   Research Questions

There are a number of research questions examined in this chapter including:

- Is the local authority questionnaire data set valid?
- Is the local authority questionnaire data set reliable?
- Is there any underlying structure in the local authority data set?
- If yes, what are the issues responsible for this underlying structure?
- Are these issues also highlighted in the case study visit data and interview transcripts?

6.3   Local Authority Questionnaire Analysis

Questionnaires formed the primary method of data collection for this part of the research and were sent to each of the 321 local authorities with a IPC register. The questionnaire was divided into six sections, which examined information about the respondent, background information to the register, the promotion and use of the register, the implementation of the register, information management and people's experience and impressions of running the register.   The questionnaire was designed primarily to investigate the three issues of information access, policy implementation and IRM. However, before the data is examined

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in relation to these issues, this section will first identify some of the underlying characteristics of the questionnaire data set, in an attempt to establish both its reliability and validity.

6.3.1 Reliability and Validity of the data

Having received responses from 158 local authorities in England and Wales,[1] the questionnaire data was then coded and entered into the SPSS statistical package for analysis. In addition to this, statistics from a number of other governmental sources were also entered to provide additional background information to the registers. A list of these additional variables can be found in Figure 6.1. Having completed the data entry, a number of steps were then taken to examine the reliability or consistency of the data set. The data was first cleaned, so that any omissions or errors could be identified and in addition to this, steps were taken to treat the more ambiguous responses in a uniform way. In some cases, this resulted in the creation of additional response categories so that answers which differed from those on the questionnaire were also were included in the analysis. Having completed this process of data cleaning, the questionnaire data set was then analysed. This first stage of this analysis was carried out using univariate techniques to examine each individual variable. The frequency distributions for each variable were calculated and were used to build up a general overview of the data.[2] A summary of this univariate analysis can be found in Appendix 13.

Having carried out the first stage of the questionnaire analysis, a number of variables were then examined to explore the validity of the data and to identify the extent of any bias within the data set. Questionnaires had been sent to every local authority with an IPC register, but as only half of these had been returned it was likely that some bias existed within the data set. In light of this, a number of variables were examined to assess this level of bias. In particular, the author was concerned that the dominance of one council type or one geographical location could distort the findings of this research and so a number of variables were examined to explore these two issues.

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[1] A response rate of 49.2 per cent.

[2] The frequency tables were also used to check the coding of the data, so that any mistakes were highlighted early on in the analysis.

Figure 6.1   Other data sets employed in the questionnaire analysis

Variables	Source
Council type	Municipal Yearbook and Public Services Directory 2001[3]
County Councils/Regions	Municipal Yearbook and Public Services Directory 2001
Environment Agency Regions	Environment Agency IPCIS Index Lists[4]
Environment Agency Areas	Environment Agency IPCIS Index Lists
Number of Authorisations	Environment Agency IPCIS Index Lists
Number of Minor Variations	Environment Agency IPCIS Index Lists
Number of Major Variations	Environment Agency IPCIS Index Lists
Total Number of Authorisations and Variations	Environment Agency IPCIS Index Lists
Local Authority Population (thousands)	Regional Trends 2002[5]
Local Authority Area (Square km)	Regional Trends 2002
Local Authority Persons Per Square km	Regional Trends 2002 (Taken by dividing population by area in square km)
Local Authority Non-Domestic Property Per Square km.	Local Government Comparative Statistics 1999[6] (Taken by dividing non-domestic property by area in square km)
Local Authority Environmental Health Expenditure Per Capita	Environmental Health Statistics 1999-2000 Actuals[7] (Taken by dividing environmental health expenditure by population)

The first of the variables to be examined was the type of councils who had responded to the questionnaire, as it was important that a broad range of councils were included in the analysis. Questionnaires had been sent to five different council types. These included:

- District/Borough Councils;
- Metropolitan District Councils;
- Unitary Authorities;
- Welsh Unitary Authorities;
- London Boroughs.

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[3] Published by Hemming Information Services, London.

[4] More information about the IPCIS Index lists can be gained from the Public Enquiries Unit, Environment Agency, Rio House, Waterside Drive, Aztec West, Almondsbury, Bristol BS12 4UD Tel: 01454 624411.

[5] Published by the Stationary Office, London.

[6] Published by the Chartered Institute of Public Finance, London.

[7] Published by the Chartered Institute of Public Finance, London.

Of these five council types, the vast majority of questionnaires, over 61 per cent, had been sent to District/Borough Councils and so it was probable that this council type would also produce the largest number of respondents. Figure 6.2 examines the percentage of questionnaires sent to each type of council and compares that to the percentage returned by them. The author was particularly concerned that large variations in response rates from each group could substantially distort the data set, but as can be seen from Figure 6.2, the percentage of questionnaires sent out and received from each type of local authority was fairly consistent. Of course, even the smallest differences would result in some bias entering the data set, however, it is believed that the similarity in the percentages of questionnaires sent out and returned by each local authority type, has meant that this type of bias has been kept to a minimum.

Figure 6.2   Percentage of questionnaires that were sent to and received from each local authority type
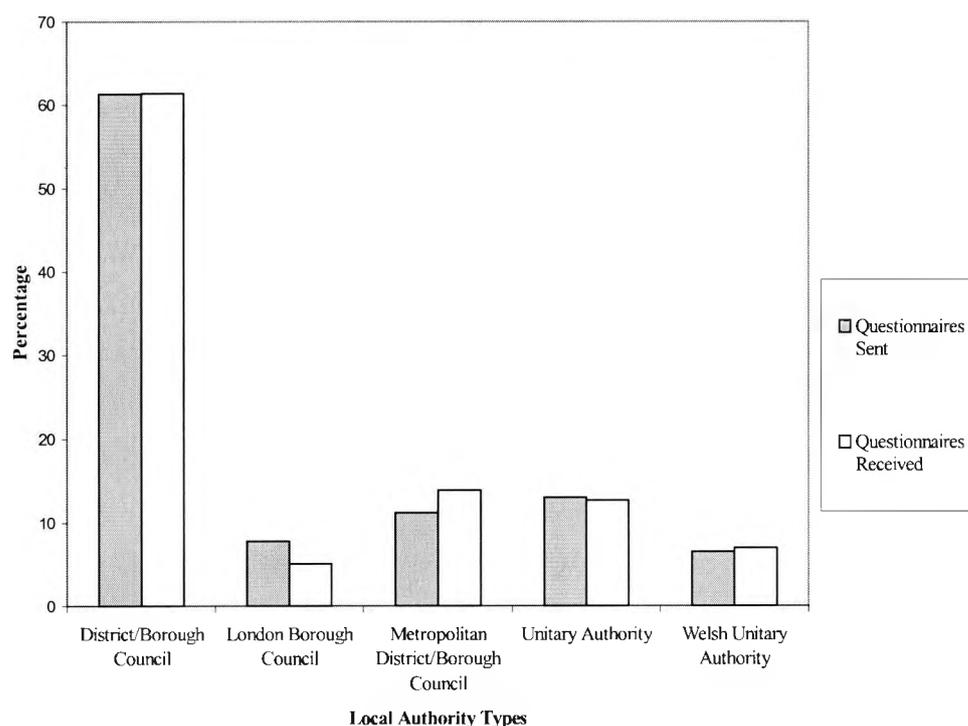
Having established a high degree of consistency in the type of local authorities that had responded to the questionnaire, the next step of the analysis was to examine where these local authority respondents were located in England and Wales. Questionnaires were sent to local authorities throughout England and Wales, so that a comprehensive picture of the IPC

registers could be built up across the country. However, the author was again concerned that varying response rates from different parts of the country could substantially affect this picture and so a number of variables were examined to identify the extent that geographical location had led to bias in the data set.

The geographical location of the local authority respondents was explored in a number of different ways. Firstly, an examination was carried out to look at the percentage of questionnaires that had been sent out to and returned from local authorities in England and Wales. This analysis showed, that once again these percentages were pretty consistent, with 93.5 per cent of the total number of questionnaires being sent out to local authorities in England, and 6.5 per cent to those in Wales and 93 per cent of those being returned coming from local authorities in England and 7 per cent from Wales.

Analysis was then carried out to look at the dispersal of local authorities across the counties and regions of England.[8] A table of these findings can be found in Appendix 18. Questionnaires were sent to local authorities in every county/region of England and responses were received from all of them, except one. East Sussex was the only county where no responses were received, but due to the small number of questionnaires sent to this county,[9] this did not have a significant impact on the overall research findings. The receipt of questionnaire responses from forty-five of the forty-six counties/regions in England meant that there was a wide spread of geographical locations in the data, with no one county or region being substantially over or under-represented. This wide distribution of respondents across the country and the reasonable levels of consistency in the percentages of questionnaires sent out and returned by each county, once again meant that levels of bias within the data had been minimised and that the data set could be used to build up a comprehensive picture of the IPC registers in England and Wales.

The final analysis that explored the geographical location of the questionnaire respondents looked at their distribution over the Environment Agency's eight regions.[10] These regions are:

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[8] For this survey analysis, Wales was classed as one administrative entity.

[9] The questionnaires sent to East Sussex only accounted for 0.6% of the total number of questionnaires sent out.

[10] A map showing the location of the regions can be found in Appendix 21.

- Anglian Region;
- Midlands Region;
- North East Region;
- North West Region;

- Southern Region;
- South West Region;
- Thames Region;
- Welsh Region.

Figure 6.3 compares the percentage of questionnaires sent out to and returned from local authorities in each Environment Agency Region, again to identify the extent of any bias in the data. The results show that the percentages of questionnaires received from most regions were similar to what had been sent out. However, the two regions where this had altered significantly were the Midlands region, where returns accounted for 21.8 per cent of the total responses, compared with 17.8 per cent of those that had been sent out, and from the Thames region where returns only made up 12.8 per cent of the responses, compared with the 18 per cent that had been sent out. These differences would obviously have an effect on the data and so would need to be considered when examining the relationship between local authorities and Environment Agency regions.

Figure 6.3   Percentage of questionnaires sent to and received from local authorities in each Environment Agency region
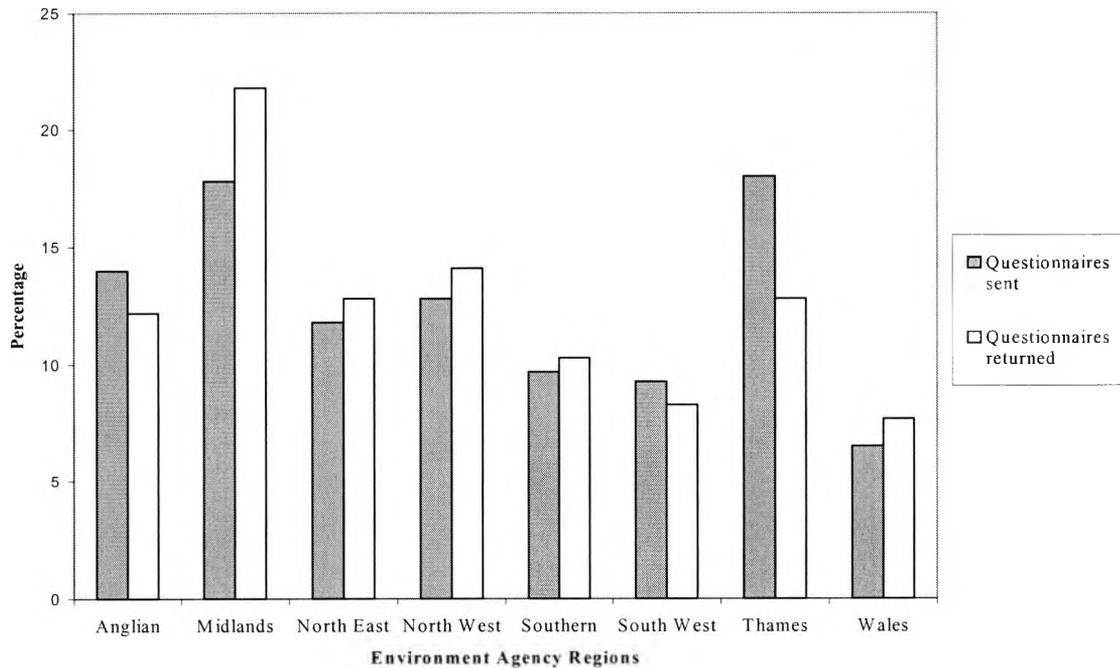
6.4   Multivariate Analysis of the Questionnaire Data Set[11]

The previous section has set out the first stage of the questionnaire analysis, which involved examining each variable using univariate techniques to provide a summary of the data set. These descriptive summaries were then used by the author firstly, to provide a general overview of the data and secondly, to investigate the reliability and validity of the data set. Once this initial analysis had been completed, the next stage of the study was to establish if any relationships could be identified within the data. This was carried out by looking at two or more variables of the data set, at the same time, using bivariate and multivariate statistical techniques. Three multivariate techniques were used to explore the questionnaire data set. These were agglomerative hierarchical cluster analysis, discriminant analysis and factor or principal components analysis. These three statistical techniques were all employed to examine the structure of the data in an attempt to build up a more detailed picture of the data set. Each technique was carried out using SPSS for Windows, Version 10.0.

6.4.1   Agglomerative Hierarchical Cluster Analysis

The first objective of the multivariate analysis, was to see if there was any underlying structure in the data, by looking at whether the local authority registers formed one homogenous group or a series of groups. In other words, this stage of the analysis was concerned with identifying if the registers were identical or if different groups had developed with different priorities. If the latter was the case, then this raised a number of important questions including:

- What are the levels of divergence between these groups?
- What are the reasons for this divergence?
- What distinguishes one group from another?
- What are the priorities of each group?

Having decided to examine the underlying structure of the data, the first multivariate technique chosen to investigate this was hierarchical cluster analysis. Cluster analysis is well established as a multivariate technique within the social science field, where it is used to reduce the complexity of data. This reduction in complexity is achieved by classifying objects into different categories, thereby reducing the number of objects for which measurements are obtained. Cluster analysis is used to uncover natural groupings within the

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[11] I am indebted to Ian Rowlands for his assistance in the design of this stage of the data analysis.

data, as it places similar objects together in 'clusters'. These clusters are mutually exclusive groups, where the objects within them are relatively 'similar' to one another and relatively 'different' to the objects in other groups. (Diamantopoulos & Schlegelmilch: 1997) The use of cluster analysis, to explore a data set, has a number of advantages, one of which is that is not necessary to know either the number of clusters or the criteria for these clusters before proceeding with the research, as the analysis identifies any structure within the data. This has obvious benefits for the researcher, but also means that the results of this type of analysis have to be treated very cautiously. Cluster analysis is extremely heuristic and in light of this, the resulting clusters need to be carefully examined and corroborated by other methods of research to ensure their validity.

6.4.2   Research design

The methodology for this part of the research can be seen in Figure 6.4.

Figure 6.4   Methodology for cluster analysis
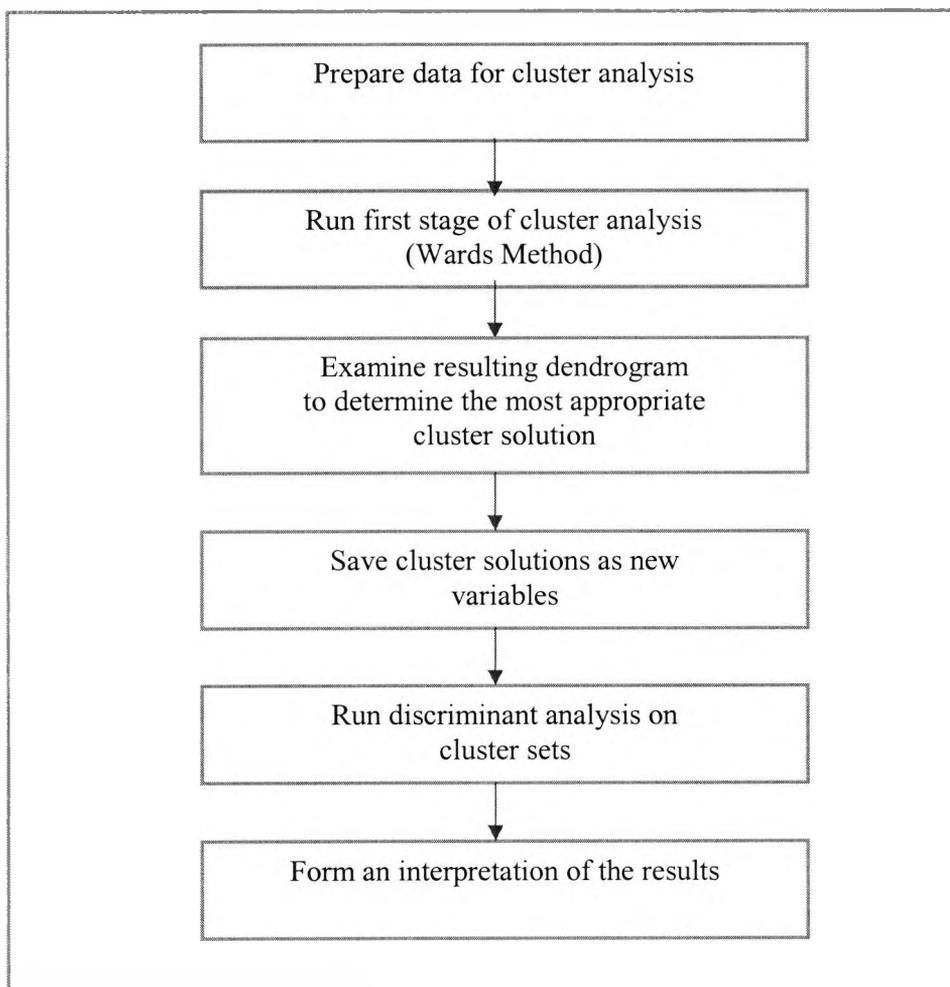
Having decided to use cluster analysis to explore the underlying structure of the data, the first stage in carrying out this analysis was to identify which variables would be included in the experiment. It was important that the right variables were chosen, as these would determine which characteristics were used to identify the clusters and so would have an important bearing on the results of this analysis.

Cluster analysis is based on comparing all the variables of each case to distinguish any similarity or difference between them and so is reliant on a having a complete data set for these comparisons to be made. This however, presents a problem for data collected from questionnaire research, as inevitably there are gaps where respondents have failed to answer specific questions. In light of this, three variables from the data set were quickly excluded from the analysis, because they were dependent on the answers given to other questions and so data was not available for the majority of cases. This left fifty-two variables to be included in the analysis, a list of which can be found in Figure 6.5. These variables came both from the questionnaire and governmental data sources.[12]

Although the variables with the largest amounts of missing data had been removed from the analysis, this was still identified as a problem with some of the remaining 52 variables and was addressed in two ways. Firstly, for nominal data a 'no response' category was added that could be used where a gap existed and secondly, for interval data, gaps were filled using the mean of the actual responses given to that variable. The variables which included mean responses were environmental health expenditure, the price of photocopying, the number of enquiries, the number of visitors, the total number of enquiries and visitors, the time spent placing information on the register, the number of items received each month and the time spent filing each month. All of these are marked (MEAN) in the list of variables included in the analysis, set out in Figure 6.5.

Figure 6.5   Variables included in the cluster analysis

TYPE	Council type
COUNTY	County/region
REGION	Environment Agency regions
EAAREA	Environment Agency areas
AUTH	Number of authorisations
MINVAR	Number of minor variations
MAJVAR	Number of major variations
TOTALA	Total number of authorisations and variations

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[12] A list of these outside variables can be found in Figure 6.1.

POP	Local authority population in thousands
AREA	Area in square km
PERSKM	Persons per square km
PROPERTY	Non-domestic properties per square km
ENVHEA (MEAN)	Environmental Health expenditure (MEAN)
VIEW	Viewing the register
LOCATED	Location of the register
READING	Reading area
COPY	Photocopying
PRICE (MEAN)	Price of photocopying (MEAN)
CHARGES	Other charges
PUBINTRO	Publicised when introduced
PUBNOW	Publicised now
ENQUIRY (MEAN)	Number of enquiries (MEAN)
VISITORS (MEAN)	Number of visitors (MEAN)
TOTAL (MEAN)	Total number of enquiries and visitors (MEAN)
EMPUSE	Employee's use of the register
COUNUSE	Councillor's use of the register
CONSULT	Consultation
PLAN	Planning
GUIDANCE	Received guidance
CONTACT	Environment Agency contact
MONITOR	Environment Agency monitoring
PLACED (MEAN)	Placing information on the register (MEAN)
ITEMS (MEAN)	Items received monthly (MEAN)
FILING (MEAN)	Hours spent filing monthly (MEAN)
ALLDOCS	Have all documents
CHECK	Checking documents
STORE	Storage of the register
ORG	Organisation of the register
INDEX	Index
USERGUID	User guides available
MANAGE	Made more manageable
DISSEM	Dissemination of information
OTHINFO	Other information made available
IPCIS	Access to IPCIS
CPOLLINV	Council access to the Pollution Inventory
VPOLLINV	Visitor access to the Pollution Inventory
ELECTRON	Make register available electronically
REMOVE	Removal of documents
COSTS	Monetary cost to the council
TIME	Time costs dealing with enquiries
MAINTAIN	Time costs maintaining the register
EFFECT	How effective has the register been in improving access

The cluster analysis was then carried out using Ward's Method, the variables were standardised using Z-scores and rescaled on a 0-1 basis, with simple Euclidean distances being used as the measure of dissimilarity. The clustering process was then summarised diagrammatically using a dendrogram.[13] A copy of the dendrogram for this analysis can be found in Appendix 19. The author then carried out a visual inspection of the dendrogram to examine the various cluster solutions. The dendrogram offers a choice of cluster solutions, in this case, from one to 156 and so the choice of the most appropriate cluster solution is essentially a trade off between complexity and ease of interpretation. Following the visual analysis of the dendrogram, a 4-cluster solution was seen as offering the most appropriate interpretation of the data. The data was then clustered again with a 4-cluster solution specified, so that a new SPSS variable CLU4 was created, which represented the group membership of individual cases.

6.4.3   Cluster Validity

Before exploring the characteristics of the four clusters identified from this experiment, the validity of this type of analysis must first be examined. The main objective of cluster analysis is to allow easier interpretation of the data, by organising the data set into concise and separate groups that are based on its inherent structure. However, clustering algorithms will group any data set, regardless of the existence of any natural structure and so further examination of the clusters is necessary, to ensure that these are valid.

Establishing cluster validity, is an essential part of cluster analysis. Pictorial displays, such as dendrograms, can be used by the researcher to gain an insight into the meaningfulness of the various clusters proposed, but this will only result in the validation of these clusters at the most basic of levels. More rigorous analysis, to establish the validity of the clusters, is therefore needed, but there appears to be little agreement as to the best procedure for achieving this. Numerous approaches for examining cluster validity can be found in the literature: for example, different clustering methods can be used on the data set to see if they assign cases to the same clusters or the cluster analysis can be repeated on various samples of the data, to see if the same clusters are replicated. However, all of these techniques are seen as having some inherent weakness and so it is left to the researcher to identify the procedure

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[13] The dendrogram shows pictorially the sequence of successive fusion's that occur among the existing groups as the clustering coefficient is varied between its extreme values. At the top of the dendrogram, all units fall into a single group while at the bottom all the units form separate groups. (Krzanowski: 2000)

which is most appropriate for their data. (Aldenderfer and Blashfield: 1984) One statistical technique that has been seen as providing a more 'productive approach' to the examination of cluster validity is discriminant analysis (Rowlands: 1998: 133) and this will now be used to examine the validity of the clusters formed as part of this experiment.

6.4.4 Discriminant Analysis

Like cluster analysis, discriminant analysis is also concerned with group membership, but unlike cluster analysis, which is used to identify groups, discriminant analysis can only be carried out once group membership has been established. Discriminant analysis is primarily concerned with characterising the differences between groups and in identifying these differences is then able to build up a set of rules that govern group membership. These rules can then be used to classify unknown cases into one of the mutually exclusive groups that has already been identified. (Jobson: 1992)

In carrying out this stage of the experiment, the four clusters created using Ward's method in the cluster analysis, were exposed to discriminant analysis, using the same 52 variables that had been used to create the original clusters.[14] The results of this analysis were then examined and it was found that the discriminant analysis could correctly predict which cluster each individual local authority would belong to in 94.2 per cent of cases.

Having established the predictive quality of the discriminant analysis model, the next stage of this experiment was to examine the structure matrix which is produced as part of the discriminant analysis output in SPSS. A copy of the structure matrix for this analysis can be found in Table 6.1. The structure matrix is used to highlight the relationships between the original variables and a smaller number of discriminant factors (DF1-3). These factors have been labelled for easier interpretation. Values greater than 0.25 are highlighted in bold type.

Table 6.1   Discriminant analysis: structure matrix

	Factors		
	1	**2**	**3**
DF1 Access Issues			
Location of the register	**.354***	.094	.224
User guides available	**.301***	-.061	.081

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[14] A list of these variables can be found in Figure 6.5.

Dissemination of information	**.255***	-.092	.163
Viewing the register[a]	.221*	.037	.030
Persons (per square km)[a]	.172*	.127	-.077
Employee's use of the register[a]	.155*	-.120	.010
Publicised when introduced	-.151*	-.096	-.050
Councillor's use of the register[a]	-.148*	.071	.012
Visitor access to the pollution inventory	.137*	-.056	-.041
How effective in improving access[a]	.126*	-.027	.060
Council access to the pollution inventory[a]	.122*	-.057	.085
Non-domestic properties (per square km)[a]	.120*	.118	-.067
Reading area[a]	.108*	-.040	-.051
Publicised now[a]	-.066*	-.050	-.018
Environmental health expenditure (Mean)[a]	.054*	-.036	-.010
Other information made available[a]	.032*	-.016	.010
DF2 Scale and Management Issues			
Number of authorisations	-.185	**.612***	**.479**
Total number of authorisations and variations[a]	-.172	**.568***	**.424**
Number of minor variations	-.159	**.518***	**.405**
Number of major variations[a]	-.107	**.420***	.158
Hours spent filing monthly (Mean)	-.050	**.341***	.033
Local authority population (thousands)[a]	-.070	**.316***	.106
Council type	.153	**.291***	-.241
Time costs maintaining the register	.219	-.241*	-.062
Items received monthly (Mean)[a]	-.105	.236*	.114
Total number of enquiries and visitors (Mean)	-.076	.222*	.184
County/region[a]	-.018	.207*	.047
Time costs dealing with enquiries[a]	.061	-.177*	-.069
Consultation[a]	.120	-.168*	-.107
Placing information on the register (Mean)	-.013	.148*	-.090
Storage of the register[a]	-.002	.136*	-.026
Organisation of the register	.115	.130*	.076
Planning[a]	.113	-.128*	-.092
Made it more manageable[a]	.057	-.105*	.031
Environment Agency contact[a]	.031	-.101*	-.012
Index[a]	.016	-.098*	-.027
Other Charges[a]	-.041	.088*	-.064
Environment Agency monitoring[a]	-.005	-.083*	.028
Number of enquiries (Mean)[a]	.020	.055*	-.015
Checking documents[a]	-.006	.015*	.014
DF3 Policy and Cost Issues			
Environment Agency areas[a]	.189	.300	-.406*

Environment Agency region	.187	.282	-.399*
Monetary costs to the council	.291	.148	**.343***
Make register available electronically	.047	-.094	**.270***
Number of visitors (Mean)[a]	.078	.177	.181*
Price of photocopying (Mean)	.036	.044	-.129*
Photocopying[a]	.024	-.084	-.126*
Received guidance[a]	.034	-.096	-.105*
Access to IPCIS[a]	.099	.014	-.103*
Removal of documents[a]	.085	-.044	-.099*
Have all documents[a]	.051	-.059	.094*
Area[a]	-.039	-.019	-.069*

[a]   This variable not used in the analysis.

*   Largest absolute correlation between each variable and any discriminant function.

In this experiment, three discriminant factors were identified which together accounted for 100 per cent of the variance in the data. These three factors are summarised in Table 6.2.

Table 6.2   Discriminant analysis: Eigenvalues

Function	Discriminant Factor	Eigenvalue	Percent of Variance	Cumulative Percent	Canonical Correlation
1	Access	3.542	47.7	47.7	0.883
2	Scale and Management	2.555	34.4	82.1	0.848
3	Policy and Cost	1.331	17.9	100.0	0.756

The structure matrix enables the identification of the factors that account for most of the variance in the data and highlights how much 'pull' each individual variable has on these factors. Through the examination of these factors, a basis for the interpretation of the data can then be established. For example, in relation to this experiment one can identify access, size and management as the most significant factors for predicting cluster membership, as these accounted for over 80 per cent of the cumulative variance within the data. At the same time, Table 6.1 also indicates the large number of variables that were not included in the discriminant analysis and therefore played no role in the construction of the model for group membership.

6.4.5   Cluster Interpretation

The aim of the previous section was to investigate whether the four clusters identified in the cluster analysis were based on some meaningful structure within the data. Having carried out the discriminant analysis, it can be suggested that this is the case, as the discriminant analysis

was able to build a model that could successfully predict group membership in 94.2 per cent of cases, using just three discriminant factors.

Having established the validity of the four clusters, a detailed investigation was then carried out to examine their individual characteristics. This investigation revealed a number of important differences between the four clusters, which formed the basis for a coherent interpretation of the data. These differences were first highlighted in the bivariate analysis that was carried out into the Ward clusters. This examined each cluster in relation to the variables used in the analysis, which then allowed comparisons to be made between them. The results of this analysis can be found in Appendix 20. In this appendix the mean values for each interval variable are shown and the frequency data for each nominal variable. These tables should be examined in conjunction with the summary results found in Table 6.3, which sets out the modal or mean value for each variable and finally, Figure 6.6 which provides a summary interpretation of the each of the four Ward clusters. The examination of these results appears to show that there is an underlying structure to the data and in light of this, the registers can be seen as having developed as a series of groups, with different priorities, rather than as one homogenous entity.

Table 6.3   Ward Clusters: Independent Variables (Modal and Mean Values)

| | Clusters | | | | |
Variable	1	2	3	4	Total
TYPE	District/ Borough Council	District/ Borough Council	District/ Borough Council	Welsh Unitary Authority	District/ Borough Council
COUNTY	Cheshire	Wales	Derbyshire	Wales	Wales
REGION	North East	Thames	Southern	Wales	Midlands
EAAREA	North West South	Thames North Eat	Midlands Lower Trent	Wales Northern	Midlands Lower Trent
AUTH	27.24	4.16	5.42	2.00	8.51
MINVAR	78.28	9.88	13.68	2.67	22.78
MAJVAR	6.52	1.00	1.41	0.00	2.09
TOTALA	112.28	15.05	20.69	4.67	33.51
POP	219.96	167.72	123.07	96.67	150.40
AREA	326.48	459.40	415.15	1321.00	430.56
PERSKM	1486.44	1860.12	795.26	120.67	1186.57
PROPERTY	44.92	57.85	22.74	4.0	35.61
ENVHEA (MEAN)	10.31	11.97	10.60	10.05	10.92
VIEW	Normal Office	Normal Office	Normal Office	Normal Office	Normal Office

| Variable | Clusters | | | | Total |
	1	2	3	4	
	Hours	Hours	Hours	Hours	Hours
LOCATED	Env. Health Department	Env. Health Department	Env. Health Department	No Response	Env. Health Department
READING	Yes	Yes	Yes	Yes	Yes
COPY	Yes	Yes	Yes	Yes	Yes
PRICE (MEAN)	0.69	1.16	0.57	0.85	0.76
CHARGES	Yes	No	No	No	No
PUBINTRO	No	No	No	No Response	No
PUBNOW	No	No	No	Yes	No
ENQUIRY (MEAN)	1.72	2.79	0.55	0.0	1.98
VISITORS (MEAN)	0.88	0.14	0.21	0.0	0.29
TOTAL (MEAN)	2.60	0.60	0.76	0.0	1.0
EMPUSE	Yes	No	No	No	No
COUNUSE	No	No	No	No	No
CONSULT	Don't Know	Don't Know	Don't Know	No	Don't Know
PLAN	Yes	Yes	Yes	Yes	Yes
GUIDANCE	Yes	Yes	Yes	Yes	Yes
CONTACT	Yes	Yes	Yes	No	Yes
MONITOR	No	No	No	No	No
PLACED (MEAN)	5.14	4.57	2.79	1.88	3.64
ITEMS (MEAN)	10.59	2.78	2.60	1.96	3.92
FILING (MEAN)	2.52	1.18	0.57	0.35	1.05
ALLDOCS	Yes	Yes	Yes	No Response	Yes
CHECK	No	No	No	No Response	No
STORE	Filing Cabinet	Lever Arch Files	Lever Arch Files	No Response	Lever Arch Files
ORG	Company Name	Company Name	Company Name	No Response	Company Name
INDEX	No	No	No	No Response	No
USERGUID	No	No	No	No Response	No
MANAGE	No	No	No	No Response	No
DISSEM	No	No	No	No Response	No
OTHINFO	Yes	No	Yes	No	Yes
IPCIS	No	No	No	No Response	No

Variable	Clusters				Total
	1	2	3	4	
CPOLLINV	Yes	Yes	Yes	No Response	Yes
VPOLLINV	No	No	No	No Response	No
ELECTRON	No	No	No	No	No
REMOVE	No	No	No	No Response	N0
COSTS	No Significant Costs	No Significant Costs	No Significant Costs	No Response	No Significant Costs
TIME	No Significant Staff Time Dealing with Enquiries	No Significant Staff Time Dealing with Enquiries	No Significant Staff Time Dealing with Enquiries	No Response	No Significant Staff Time Dealing with Enquiries
MAINTAIN	Significant Staff Time to Maintain the Register	No Significant Staff Time to Maintain the Register	No Significant Staff Time to Maintain the Register	No Response	No Significant Staff Time to Maintain the Register
EFFECT	Not Very Effective	Not Very Effective	Not Very Effective	No Response	No Very Effective

Figure 6.6   Summary Interpretation of Ward Clusters

Cluster 1:   Cluster of 25 councils.

Predominance of councils from the Midlands and the North of England. Metropolitan District/Borough Councils and Unitary Authorities account for over half the councils in this cluster. Large numbers of authorisations, minor variations and major variations. High population density. These councils receive large numbers of items for the register and as a result spend more time filing. It also takes longer for items to be entered on the register. More likely to publicise the register and have a higher percentage of visitors. More likely to have received guidance and carried out some planning for the register. Most have a contact at the Environment Agency and are twice as likely to have been monitored compared to the overall results. Much more likely to have an index and use guide for the register and are twice as likely to actively disseminate information to the public. A substantial number of these councils feel that the register has resulted in significant additional costs to the council, both in terms of time costs as a result both of maintaining the register and dealing with enquiries and financial costs.

Cluster 2:   Cluster of 43 councils.

Dominated by councils from the South West, Thames and Welsh Environment Agency regions. Higher number of Unitary Authorities, Welsh Unitary Authorities and London Boroughs. Half the average number of authorisations, minor variations and major variations. Much higher population density and the highest Environmental Health Expenditure of any cluster. Higher number of enquiries but very few visitors. Receive a smaller number of items for the register. Higher percentage of councils received guidance. Less likely to have user guides available or to have made

the register more manageable, but nearly three times more likely to make register information available electronically. Do not think the register has led to any significant additional costs to the council.

Cluster 3:   Cluster of 85 councils.

Dominated by District and Borough Councils. Councils in this cluster more likely to come from the Midlands and East Anglia. In fact all the councils from the Environment Agency Anglian region can be found in this cluster. Small numbers of authorisations, minor variations and major variations. Much smaller mean population density. These councils receive very few enquiries or visits about the register. On average the councils in this cluster receive fewer items to be placed on the register and spend far less time filing. Less likely to have carried out any planning or to have received any guidance in relation to the register. Less likely to have an index or actively disseminate information to the public and far less likely to make any information from the register available electronically. A significant percentage of these councils feel that the registers have not resulted in any additional costs for the council.

Cluster 4:   Cluster of 3 councils.

Very small cluster of three local authorities, which appear to be linked more by their non-responses to questions rather than their actual responses. These councils have few authorisations and variations. They receive very few items a month and therefore spend very little time filing. They are located in areas with a very small population density and they receive no visitors or enquiries about the register

6.4.6   Factor (Principal Components) Analysis

Having established the existence of an underlying structure in the local authority questionnaire data set, using cluster analysis and the validity of that structure using discriminant analysis, the data set was then subjected to one more multivariate technique, factor or principal components analysis. The objective of factor analysis is to represent a set variables, in terms of a smaller number of hypothetical variables. These hypothetical variables or 'factors' can then be used to examine the underlying structure of the data. (Kim & Mueller: 1978) Factor analysis was therefore used to provide further insight into the structure of the data, by building on the interpretations already made as a result of the cluster and discriminant analysis. The factor analysis was carried out using the principal components method of extraction and the equamax method of rotation.[15]

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[15] This analysis was again carried out using SPSS for Windows Version 10.0.

Before using the factor analysis to draw conclusions about the data set, it was first necessary to establish whether the data was actually suitable for this type of examination. One measure that can be used to establish whether it is appropriate to carry out this type of analysis is the Kaiser-Meyer-Olkin (KMO) test which assesses sampling adequacy. The results gained from this test have been characterised by Kaiser in the following way: 'measures in the .90's are seen as *marvellous*, in the .80's as *meritorious*, in the .70's as *middling*, in the .60's as *mediocre,* in the .50's as *miserable*, and below 0.5 as *unacceptable*. (Rowlands: 1998: 162) The KMO value obtained for this data set was 0.57, a value which could be classified as falling somewhere between miserable and mediocre.

The low value of the KMO test obtained for this data set could to a certain extent be explained by the type of data that was being examined. The KMO test measures direct cause and effect within a data set, and investigations into policy issues do not normally result in the collection of the type of 'hard' data favoured by this test. In light of this and the test result having reached an 'acceptable' if somewhat low level, it was decided that the data set should be examined in relation to another indictor to see if it really was suitable for this type of analysis.

The manual that accompanies the SPSS statistical package argues that in addition to a relatively high KMO value, good conditions for carrying out factor analysis are also indicated by a significance value of below 0.05 for Bartlett's test of sphericity. (Norusis: 1994) In the case of this data set, the significance value obtained for Bartlett's test was 0.00. This would therefore appear to counter the low KMO test and indicate that there was evidence of strong correlations within the data set. In light of this, it was felt that the factor analysis should be continued with and an attempt be made to identify a simple, parsimonious and easily interpretable solution which was also identified by the SPSS manual as being indicative of successful factor analysis.

Having established that factor analysis could be carried out on the data set, the next stage of the experiment was to identify how many factors would be appropriate for further analysis. In determining the appropriate number of factors, three SPSS outputs were examined, the first of these was the total variance explained table, the second, the factor scree plot and the third, the rotated component matrix. The total variance explained table lists the eigenvalues for each factor. Using Kaiser's criterion,[16] eighteen factors were identified with an eigenvalue greater

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[16] Kaiser's criterion is used in factor extraction as a way of determining the smallest number of factor's that can be used to represent the relationships between variables. Using this rule, only factors with an eigenvalue greater than one are retained for further investigation. (Pallant: 2001)

than one, which explained 70.48 per cent of the variance within the data. However, one of the main criticisms of Kaiser's criterion is that it can identify too many factors and this proved to be the case in this study. As a result of this, the scree plot was also examined to help identify a more appropriate number of factors. A scree plot, indicates the eigenvalues for all the factors and usually shows a steep drop, followed by a shallower slope. It is usually recommended that factors above the 'elbow' or break in the diagram are retained for further investigation, as these contribute most to explaining the variance in the data. (Pallant: 2001) The scree plot for this experiment can be seen in Figure 6.7, however, the 'elbow' is not especially visible. It would appear to lie somewhere between the fifth and seventh factors, but as this was not particularly clear the rotated component matrices for five, six and seven factors were also examined to identify the most appropriate number. Finally, having examined all three outputs it was decided that a six factor solution, accounting for 38.4 per cent of the variance, was the most appropriate for use in this experiment.

Figure 6.7   Factor Scree Plot
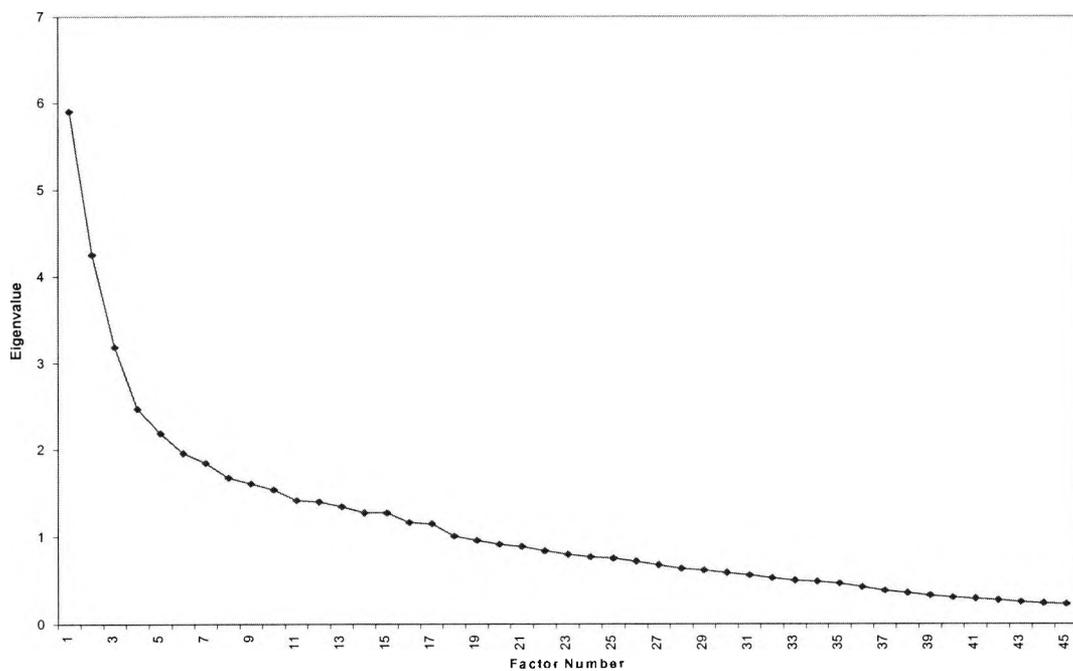
Having identified six factors as the most appropriate solution for this study, the rotated component matrix[17] was then examined in further detail to establish the variable loadings for each factor. The variable loadings for each factor, taken from the SPSS rotated component matrix, can be seen in Table 6.4. The factors are arranged in order of the amount of total

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[17] The component matrix was rotated using Equamax rotation.

variance accounted for, so that Factor 1 accounts for the highest amount variance and Factor 6 the lowest. For each factor, the variables that load above the arbitrary level .32 are displayed.

Table 6.4   Factor Analysis: variables with loadings of 0.32 or higher[18]

Factor 1: *'Scale of Management'*		Factor 2: *'Commitment to Information Access'*		Factor 3: *'Commitment to Management and Users'*	
Number of authorisations	.922	Total costs maintaining the register (1)	.515	User guides available (2)	.591
Total number of authorisations and variations	.902	Location of the register	.482	Viewing the register (2)	.470
Number of minor variations	.865	How effective has the register been in improving access	.476	Number of enquiries (2)	.459
Number of major variations	.762	Time costs dealing with enquiries (1)	.451	Consultation	.440
Items received monthly (Mean)	.565	Visitor access to the Pollution Inventory	.439	Removal of documents	.418
Hours spent filing (Mean)	.558	Viewing the register1	.431	Monetary cost to the council	.412
Local authority population in thousands	.413	Make register available electronically	.399	Number of visitors	.397
		Access to IPCIS	.378	Total number of enquiries and visitors	.385
		Council access to the Pollution Inventory	.377	Organisation of the register	.384
		Have all documents	.366	Checking documents	.367
		User guides available (1)	.329	Environment Agency contact	.350
		Environment Agency monitoring	.322	Planning	.350
		Number of enquiries (1)	.320	Made it more manageable	.333
				County/Region	.331
				Dissemination of Information	.328

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[18] Table 6.4 continued overleaf.

Note: Variables that load on more than one factor are numbered

Factor 4: *'Local Authority Characteristics'*		Factor 5: *'Location and Policy Issues'*		Factor 6: *'Costs'*	
Persons per square km	.863	Environment Agency region	.901	Other charges	.421
Non-domestic properties per square km	.857	Environment Agency area	.894	Time costs maintaining the register (2)	.390
Local Authority population in thousands	.508	Council type (2)	.528	Time costs dealing with enquiries (2)	.345
Council type (1)	.456				

Note: Variables that load on more than one factor are numbered in brackets

The six factors listed above have each been given a label, which aims to summarise the variables that load most heavily on that factor. Factor 1 for example, has been labelled 'Scale of Management' as the variables that weigh most heavily on this factor tend to relate to the size of the register. The number of authorisations and variations found in each local authority strongly influence this factor, as does the number of items received each month and the time spent filing. All of these variables will obviously have a direct effect on the size of the register and seem to be linked to local authorities with larger populations.

Factor 2 is dominated by variables that appear to show a commitment, by councils, to information access. Variables such as viewing the register, the location of the register and the number of enquiries load heavily on this factor, as do variables which support information access such as user guides and electronic access both to information from the register and the Environment Agency's Pollution Inventory. Linked to this commitment to access also appears to be a number of variables associated with the costs of the register, both in maintaining it and in dealing with enquiries.

Factor 3 shares a number of common variables with the previous factor, but on further examination it is clear that it has a slightly different emphasis to Factor 2 and so has been labelled 'Commitment to Management and Users'. Like Factor 2 variables such as viewing the register, user guides and number of enquiries load heavily on this factor, but instead of being indicative of a commitment to access are here more characteristic of the management of the register and assistance to users. This commitment to management can be seen from the

introduction of the register, through variables such as consultation and planning. Other variables which are also indicative of information management are organisation of the register, checking documents, making the register more manageable and the removal of documents. These variables seem to be linked to higher numbers of enquiries and visitors and to different counties and regions.

The final three factors, Factors 4, 5 and 6 are responsible for lower levels of variance in the data and are all dominated by a small number of variables. Factor 4 for example, is influenced by four variables relating to local authorities and has therefore been labelled 'Local Authority Characteristics'. These variables are the size of local authority population, population density, the number of non-domestic properties and council type. Thus this factor is largely affected by the issues of population, urbanisation and industrialisation. The three variables that load heavily on Factor 5 are Environment Agency region, Environment Agency Area and Council Type. These are three fundamental issues which indicate the location of the register and how the register policy has been implemented in different regions around the country and so this Factor has been labelled 'Location and Policy Issues'. Finally, Factor 6 has been labelled 'Costs' as the variables that load heavily on this factor are the financial costs to the council in setting up the register and the time costs in maintaining the register and in dealing with enquiries, as well as the charges that are made to the users by the council for carrying out work with the register.

Factor analysis has provided a further indication of the existence of meaningful structure in the local authority questionnaire data set. This structure can be seen in the 6 factors identified above. Thus the results from this experiment, as well as those from the hierarchical cluster analysis and discriminant analysis, point towards a number of key issues as having affected the development of the IPC registers.

6.5   Interpretation of multivariate local authority questionnaire analysis

Having examined the results from the analysis carried out on the local authority questionnaire data set, a number of provisional conclusions can be drawn.

Conclusion 1

The first conclusion to be drawn from the analysis was that there was convincing signs of natural underlying structure in the questionnaire data from all three types of multivariate

analysis carried out. This underlying structure was first identified from the hierarchical cluster analysis, where four clusters were identified as offering the most appropriate interpretation of the data. This was backed up by the results from the discriminant analysis which was able to build a model of these four clusters that could predict group membership in over 94 per cent of cases and was able to identify three discriminant factors of access issues, scale and management issues and policy and cost issues which underpinned this model. Finally, factor analysis was able to identify six factors of scale of management, commitment to information access, commitment to management and users, local authority characteristics, policy factors and costs, which accounted for nearly forty percent of the variance in the data.

The results from these three multivariate tests can be seen to be consistent with one another and provide an important insight into the structure of the data. This insight suggests that the IPC registers do not form one homogenous group, but rather a series of groups that have been influenced by a number of key factors.

Conclusion 2

The second conclusion to be drawn from the multivariate analysis was that both information access and information management issues played an important role in influencing the development of the registers. Both factor analysis and discriminant analysis identified information access and information management as key issues for interpreting the data. In factor analysis, for example, these two issues accounted for over a quarter of the variance in the data, while in discriminant analysis for over 80 per cent of the variance. Thus the two issues of information access and information management are particularly significant for understanding the differences between individual councils and the four identified clusters.

6.6 Validation: case study visits, interviews and questionnaires responses

The results of the multivariate analysis carried out in the previous section, suggested that the local authority IPC registers could be arranged into a number of groups where members shared certain characteristics. This was supported by the factor analysis, which highlighted six factors that accounted for nearly 40 per cent of the variance in the data. These factors were:

- Scale of management;

- Commitment to information access;

- Commitment to management and users;

- Local authority characteristics;

- Location and policy issues;

- Costs.

In an attempt to validate this interpretation of the data, information gathered from the case study visits, local authority interviews and questionnaire responses will now be examined in relation to each of the six factors highlighted above. However, before investigating these factors, this section will first examine the background to the case study visits and interviews.

6.6.1   Case study visits and interviews

The case study visits and interviews formed the second part of the investigation into the local authority IPC registers. Case study visits were made to eight local authorities. These were:

- Southampton City Council;

- Portsmouth City Council;

- New Forest District Council;

- Coventry City Council;

- London Borough of Islington;

- Nuneaton and Bedworth District Council;

- Eastleigh Borough Council;

- Winchester City Council.

Interviews were also carried out with employee's at three of these local authorities. These were:

- Southampton City Council;

- Portsmouth City Council;

- New Forest District Council.

The case study visits were conducted around an observational framework which focused on four main areas. These areas were information on the local authority office, background information about the register, information management and any other information. The interviews were based on a similar framework, which also focused on four main areas.

These were the promotion and use of the register, the implementation of the register, information management and the interviewees experience and impressions of the register. A full copy of these frameworks can be found in Appendix 15. As with the questionnaire, both the case study visits and interviews were also designed to investigate the three main issues of information access, policy implementation and information resources management. A copy of the case study visit and interview transcripts can be found in Appendix 16.

6.6.2 Scale of management

The first factor identified from the principal components analysis as being responsible for the largest amount of variance in the data was labelled 'scale of management'. The variables that had a direct influence on this factor, were those that influenced the size of the register, such as the number of authorisations and variations within a local authority and the number of items received monthly. This factor also appeared to be linked to local authorities with large populations. The two issues of register size and local authority population were also highlighted in the cluster analysis as important characteristics for determining the different clusters. Cluster 1, for example, was predominantly made up of councils with large numbers of authorisations and variations and high population density, while Cluster 3 was characterised by councils with small numbers of authorisations and variations and low population density. Issues affecting the size of the collection held by each local authority were therefore identified by the multivariate analysis, as being fundamental to the type of IPC register that was developed by local authorities.

The size of a local authority's IPC register is directly linked to the numbers of authorisations and variations issued to companies within their boundary and as a result of this, registers can differ quite dramatically. These differences in register size and the issues that this raised were highlighted both in the questionnaire and case study analysis. The variety in the numbers of authorisations and variations held by individual local authorities can be seen in Appendix 23, which gives the individual statistics for each local authority and in Table 6.5, where the mean, median and dispersion values for the four 'size' variables from the questionnaire returns are shown.[19] From the median value in this table it can be seen that half the councils had less than sixteen authorisations and variations.[20] However, there were

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[19] These four size variables were number of authorisations, number of minor variations, number of major variations and total number of authorisations and variations.

[20] In fact from the questionnaire returns 110 councils or 70.5 per cent had fewer than the mean total number of authorisations and variations (33.5).

some councils that had substantially more than this, the highest being 276 and of course, an IPC register at a council with 276 authorisations and variations would differ considerably from that at a council with a single authorisation.

Table 6.5   Frequency data for numbers of authorisations and variations from questionnaire responses

	Mean	Median	Dispersion	
			Minimum	**Maximum**
	Mean	**Median**	**Minimum**	**Maximum**
Number of Authorisations	8.5	4.5	1.0	61.0
Number of Minor Variations	22.7	9.0	0.0	211.0
Number of Major Variations	2.0	1.0	0.0	23.0
Total Number of Authorisations and Variations	33.5	16.0	1.0	276.0

Having established that the numbers of authorisations and variations directly affect the size of the register, it can also be seen that there are links between register size (based on the average number of authorisations and variations) and the type of council and the area where that council is located. The relationships between these variables can be seen in Table 6.6 which shows the cross-tabulation for council type and average number of authorisations and variations and Table 6.7, which shows the cross-tabulation for Environment Agency region and average number of authorisations and variations.

Table 6.6   Council Type/Average Number of Authorisations and Variations Cross-tabulation (% within Average Number of Authorisations and Variations)

Council Type	Average Number of Authorisations and Variations		Total
	Below Average	**Above Average**	
District/Borough Council	68.2%	43.5%	60.9%
Metropolitan District/Borough Council	7.3%	30.4%	14.1%
Unitary Authority	10.9%	17.4%	12.8%
Welsh Unitary Authority	7.3%	6.5%	7.1%
London Borough	6.4%	2.2%	5.1%
Total	100.0%	100.0%	100.0%

By examining these tables it can be seen that when compared to the total, Metropolitan District Councils and Unitary Authorities had a higher percentage of councils with an above average number of authorisations and variations and therefore bigger registers, while District and Borough Councils were more likely to have fewer authorisations and variations and therefore smaller registers. Metropolitan District/Borough Councils and Unitary Authorities are all purpose councils, responsible both for county and district council functions within their area and are usually found in large towns or cities or heavily populated/industrialised regions like the West Midlands, Greater Manchester and Tyne and Wear. In light of this it is not surprising that large registers, which are directly linked to the number of industrial processes in an area, are more likely to be found within these council types. A similar relationship between register size and council location is illustrated in Table 6.7. This table shows that councils with above average numbers of authorisations and variations are much more likely based in the Midlands, North East and North West, while those with smaller registers are more evenly distributed around the country. Size of register therefore has an important relationship to the number of authorisations and variations within a council, the type of council and also to the location of a council.

Table 6.7   Environment Agency Region/Average Number of Authorisations and Variations Cross-tabulation (% within Average Number of Authorisations and Variations)

Environment Agency Region	Average Number of Authorisations and Variations		Total
	Below Average	Above Average	
Anglian	16.4%	2.2%	12.2%
Midlands	21.8%	21.7%	21.8%
North East	4.5%	32.6%	12.8%
North West	10.9%	21.7%	14.1%
Southern	12.7%	4.3%	10.3%
South West	10.0%	4.3%	8.3%
Thames	16.4%	4.3%	12.8%
Wales	7.3%	8.7%	7.7%
Total	100.0%	100.0%	100.0%

In addition to these characteristics, councils with large registers also appeared to receive more enquiries, with 50.0 per cent of councils with an above average number of authorisations and variations receiving one or more enquiries about their register every

month compared to 37.7 per cent of below average councils. They also received more visitors, with 33.3 per cent of them receiving more than one visitor a month, compared with 18.7 per cent of below average councils. Thus register size also appeared to be linked to register use, with those councils with larger number of authorisations and variations receiving more enquiries and visitors.

Having established the characteristics of councils with large registers, this section will now look at some of the issues raised by larger registers. One of the main differences between councils with an above average number of authorisations and variations and those with a below average number, was the time spent maintaining the register.[21] Councils with an above average number of authorisations and variations were usually receiving more documents every month than their smaller counterparts. For example, 17.8 per cent were receiving twelve or more documents a month compared with 1.0 per cent of below average councils.[22] As a result of this, above average councils also spent longer periods of time filing information into the register, with 19.1 per cent spending more than two hours a month filing information compared with 5.7 per cent of below average councils. In addition to this it also took above average councils longer to place information on the register, with 62.2 per cent taking more than two days to place new information on the register, compared to 35.8 per cent of below average councils. It is therefore not surprising, in light of these statistics, that 38.6 per cent of councils with above average numbers of authorisations and variations felt that they spent a significant amount of staff time maintaining the register, compared with 14.9 per cent of below average councils.

The differences between councils with small and large sized registers were also highlighted in the case study visits. Case study visits were made to a variety of councils, some with a large number of authorisations and variations like the New Forest District Council and some with a single authorisation, like the London Borough of Islington. Table 6.8 shows the numbers of authorisations and variations held by each council visited. Of these councils, the New Forest District Council had by far and away the largest number of authorisations and variations. In fact, it had the thirteenth largest number of authorisations and variations of any

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[21] 46 council respondents were seen as having an above average number of authorisations and variations (i.e. >34) with 110 respondents having a below average number of authorisations and variations (i.e. <32)

[22] 60 per cent of above average councils were receiving more than four documents a month compared to 8.6 per cent of below average councils.

local authority in the country.[23]   The only other council visited with an above average number of authorisations and variations was Coventry City.[24]

Table 6.8   Frequency data for numbers of authorisations and variations from case study visits

Council	Number of Authorisations	Number of Minor Variations	Number of Major Variations	Total Numbers of Authorisations and Variations
Southampton City Council	3	7	0	10
Portsmouth City Council	4	5	1	10
New Forest District Council	28	94	8	130
Coventry City Council	10	24	2	36
London Borough of Islington	1	3	2	6
Nuneaton and Bedworth District Council	2	3	0	5
Eastleigh Borough Council	4	8	2	14
Winchester City Council	3	9	1	13

One issue identified from the case study visits in relation to the bigger registers was the problem of storage. This was particularly noticeable on visits to Coventry City Council and the New Forest District Council where the registers were kept in fourteen and twenty-four lever arch folders respectively. In an interview carried out at the New Forest District Council size was highlighted as a particular problem, especially as the register was continuing to grow with the addition of new variations, of which the New Forest now had over 100, and monthly monitoring data. This caused the Environmental Health Department a number of dilemmas as to where to store the register and meant that it had been moved on several occasions as more

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[23] See Appendix 23 for a full list.

[24] Coventry City was positioned 75th out of 321 when ranking councils in terms of their numbers of authorisations and variations.

space was needed. The problem of storage was also highlighted by a number of questionnaire respondents, one of whom stated that their IPC register was now so large that the council had been forced to allocate a separate room to it. This had caused the council a number of difficulties firstly, because of the problems in trying to find a suitable room and secondly, because it was not seen as being an effective use of space within the department.

Staff at the New Forest District Council felt that the size of their register had meant that they had to address a number of problems that local authorities with smaller registers would not have come across, and felt that this was responsible for much of their decision-making in relation to the register. For example, register size was a key element in the decisions that they had taken both in relation to planning for the register and the ways in which the register was organised. The New Forest District Council felt that once they knew how much information they were going to receive for their register, it became particularly important for them to plan how the register would be stored, organised and used. This appeared to be backed up by the questionnaire results where over half (52.2 per cent) of councils with an above average number of authorisations and variations had carried out some planning into the management of the register, compared with 36.7 per cent of below average councils. In addition to this, register size also appeared to make councils more likely to address information access issues and the ways in which the register would be used. The New Forest District Council for example, had decided that they would help users by placing recent information in separate folders so that visitors could view information for the past two or three years rather than having to plough through every document received since 1991. One questionnaire respondent also detailed how his council was trying to produce easy to understand summaries of each process in their register, so that visitors would no longer have to trawl through the whole register looking for basic pieces of information.

Register size can therefore be seen to have had an important influence on the way in which the IPC register had developed at different local authorities, as it appeared to have an affect on where the register was located and how often it would be used, as well as shaping issues, such as the amount of planning that was carried out, where it was stored, how it was organised and the time that it took to maintain.

6.6.3 Commitment to information access

The second factor highlighted in the factor analysis as being responsible for variance in the data was labelled 'commitment to information access,' as the variables that loaded most heavily on this factor appeared to show a commitment by local authorities to information

access. These variables included the location of the register, viewing the register, access to the pollution inventory and making information available electronically. In addition to these, were also those variables associated with the use of the register such as the number of enquiries and time spent dealing with enquiries. Access issues could therefore be seen to have had a significant impact on the development of the IPC registers, as they affected when the registers were accessed and how people used the information that they contained.

A variety of access issues can be seen in relation to the IPC registers, many of which were highlighted in the case study visits, interviews and questionnaire returns. The first of these access issues was physical access to the register. The Environmental Protection Act 1990 set out many of the basic conditions for physical access to the register. For example, it legislated that copies of the register were kept by local authorities and that the register be made available for inspection 'at all reasonable times'. Nearly all the councils used this 'reasonable times' requirement as the basis for their opening hours, which was usually taken to mean normal office hours. This was highlighted by the case study visits where most registers were available for inspection between 8.30am and 4.30pm, Monday to Friday. In fact only one council was identified from both the questionnaires returns and visits who went beyond this, saying that visitors could also make an appointment with council staff to come in and view the register outside of normal office hours. From these results it could be seen, that where issues were specifically dealt with by the legislation, most councils strictly adhered to the conditions that had been set down. However, there were a number of access issues that were not addressed by the Act and in relation to these, council actions appeared to be far more varied.

For example, increasing public awareness of what information is available through promotion, is usually seen as an essential part of any information access policy. However, the Environmental Protection Act failed to include any provision to promote the registers to the public. The only promotion required by the Act, was that a newspaper advert be placed in a local paper to notify the public of a new IPC application, and that this stated where the application could be viewed i.e. the local authority public register. However, once a process had received their authorisation it was then left to individual councils to decide whether or not to promote the information on their registers, and as can be seen from Figure 6.8, most did not. This fact was also backed up by case study interviews, where both Southampton City Council and Portsmouth City Council, although heavily involved in promoting the IPC scheme to industry, commerce and trade associations, had done little to promote their registers to the public.

Figure 6.8   Is your register promoted now?
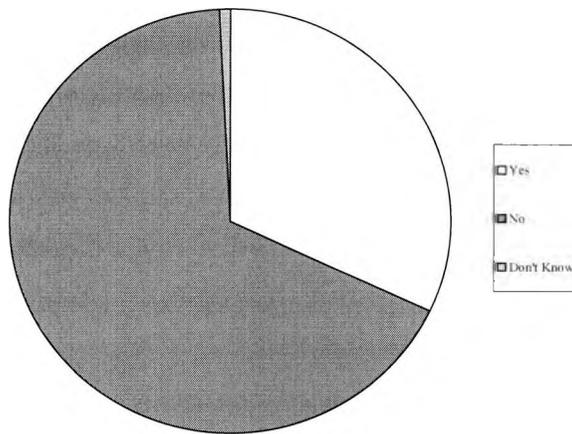
Those councils that had promoted their register, however, had done so in a number of ways, as Figure 6.9 illustrates.

Figure 6.9   Methods of register promotion
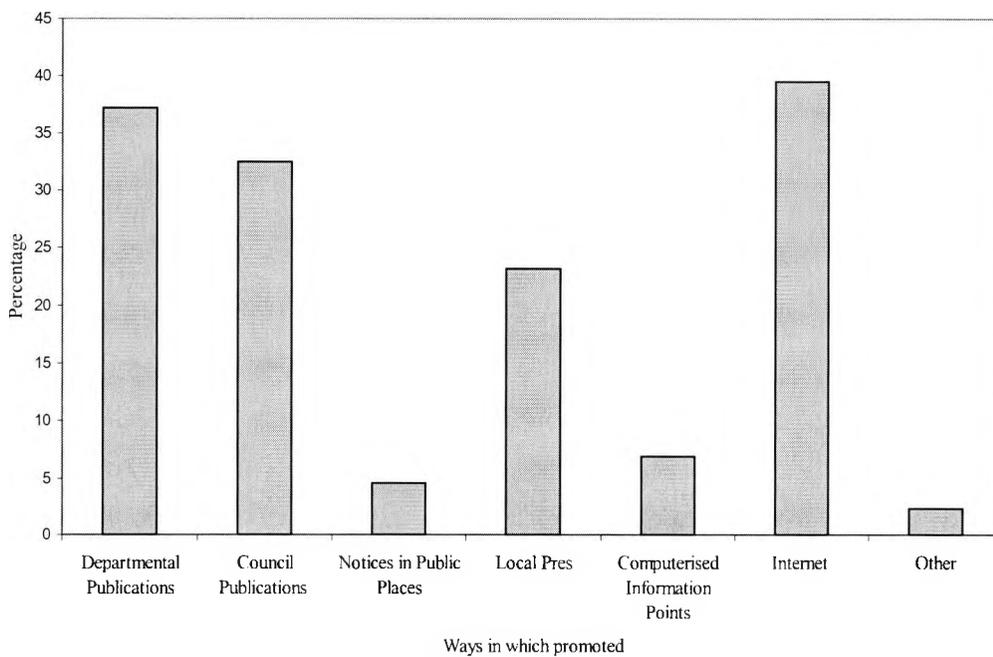
The internet was the most popular way of promoting the registers to the public and was seen by a number of councils as a key way of passing on information about pollution control. In fact as will be seen later on in this section, the internet was increasingly seen not only as a

way to advertise the IPC register but also of making information from the register available. Departmental and council publications were also a popular way of informing the public about the register. The New Forest District Council, for instance, frequently used their Council Environment Newsletter to increase awareness of the IPC and LAAPC public registers, as the article in Figure 6.10 illustrates.

Figure 6.10   New Forest District Council Environment Newsletter Article

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Part B Industrial Processes – An Update

The Environmental Protection Act 1990 came into force in 1991 and introduced two new pollution control regimes:

- Integrated Pollution Control (IPC) which controls emissions to all environmental media from prescribed major industrial and trade processes. This is governed by the Environment Agency.
- Local Authority Air Pollution Control (LAAPC) which controls emissions to air from other industrial or trade processes that involve the use of prescribed substances. These processes, known as Part B processes are inspected and licensed by the Local Authorities.

The Department of the Environment has decided that special conditions be imposed on certain prescribed substances and processes to control their release to air. These processes range from waste oil burning to iron and steel foundry processes to maggot breeding and controlling the manufacture of sausage casings.

Companies which operate a prescribed process require an authorisation and must apply to the local authority for this. The Council will inspect the process and ensure that every care is taken, under the limitation of BATNEEC (Best Available Technique Not Entailing Excessive Cost), to prevent or minimise the emission of pollutants to air. It must also make sure that other substances which might cause harm to the environment are made harmless before being released. To make sure this happens, the Council draws up a list of operational conditions which the company must comply with. Failing to comply with these conditions is a serious offence and could result in hefty fines.

Recently, further processes have been moved away from IPC to fall under the control of the local authority. New Forest District Council are currently deciding applications from a boat building company using fibre reinforced plastics and from numerous paint spraying businesses.

Copies of all applications made to the New Forest District Council are held on a public register and available for inspection during office hours. If you would like to view these documents or find out more about Part B processes call the Environmental Protection Team on 01703 285 161.

(New Forest District Council: 1997: 11)

One result of councils promoting the IPC register to the public, was that it appeared to have had a significant impact on the numbers of enquiries and visitors that a register would receive. This is illustrated in Table 6.9, which cross-tabulates councils who do or do not receive enquiries and visits, with promotion of the register and as can be seen those councils that promote their register, are much more likely to receive enquiries and visitors about it than those that do not.

Table 6.9   Enquiries and Visits/Publicised Now Cross-tabulation (% within Publicised Now)

Enquiries and Visits	Publicised Now			Total
	Yes	**No**	**Don't Know**	
No Enquiries or Visits	38.1%	62.5%	100.0%	55.0%
Received Enquiries or Visits	61.9%	37.5%	0.0%	45.0%
Total	100.0%	100.0%	100.0%	100.0%

As has already been stated, in an effort to address both the issues of promotion of the register and physical access to the register, a number of councils had seen electronic access and the internet as a key way of improving the IPC register.[25]   All questionnaire respondents were asked what improvements could be made to the register and by far and away the single largest response, was to make it available electronically.   As one respondent answered 'one way to substantially improve the register would be to have it electronically disseminated by the Environment Agency, with a user friendly front end available at each local authority to enable better interrogation and dissemination of information from the register.'   The potential of making information from the register available electronically was realised by a number of respondents, one of whom said that this would mean they could link it to other electronic resources to provide much better environmental information to their local community.   The benefits of making the register available electronically were also highlighted in the case study interviews where all three councils thought that this would result in easier access.

From the questionnaire results most councils appeared to think that electronic access to the IPC register would offer a number of benefits both to them, as it would reduce the time that they spent maintaining the register, and for visitors, as it would enable them to use the register

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[25] This issue of making information available electronically was highlighted in the cluster analysis as an important factor in determining the group membership as Cluster 2 contained a particularly high proportion of councils that made information from the register available in this way.

at a time that was suitable for them and in ways that currently could not be achieved with a paper register. However, this was obviously seen as something for the future as when questionnaire respondents were asked whether they currently provided visitors with access to the pollution inventory on the Environment Agency's web-site, which provided access to basic IPC data linked to maps and other environmental data, most responded 'no'. In fact from the comments given it was clear that a large number were unaware of the existence of this site.

Electronic access to the IPC registers was therefore seen as an improvement for the future but in the meantime there were a number of other issues relating to the paper-based register that could affect access. The first of these was to make sure that all the correct documents were placed on the register, so that users could trace the 'story' of each authorisation. Information for the register was sent to local authorities by the Environment Agency officer responsible for a particular authorisation and as a result of this, local authorities had little control over what information they received or when they received it, a point raised by all three interviewees. Despite this however, three quarters of questionnaire respondents felt that they had received all the correct documentation for their register but many wished that the Environment Agency provided them with someway of checking. The New Forest District Council for example, suggested that if the Environment Agency were to send them a summary sheet listing all the information that they had been sent each month, then this would be particularly valuable in helping them to make sure that their register was up-to-date.

A second issue raised in relation to access to the paper-based register, was the way in which users were supported while using the register. Very few councils, only 2.6 per cent, provided user guides for the register but a large number of councils felt that this was unnecessary as they always made sure that a member of staff was available when someone was visiting the register. In fact, for many councils, making sure that a member of staff was available was particularly important not just so that they could introduce users to the register and the way in which it was organised, but also so that they could help them interpret the information on the register, which was described by one questionnaire respondent as being 'particularly dry and indigestible'. All three interviewees also felt that it crucial for a member of staff to be available when someone came to view the register.

One final access issue examined by the questionnaire returns was the issue of charging and what charges were being made by individual local authorities for information on the registers. The Environmental Protection Act, as with other pieces of information setting up public registers, had stipulated that local authorities could make 'reasonable charges' for supplying

information from the register. However, as was identified in Section 3.4.2 this had meant that local authorities could set the charges for photocopying at whatever they deemed to be reasonable and that this had led to a great deal of variation between different local authorities. This can be seen in Table 6.10 which gives the mean, median and dispersion values for the price of photocopying a single A4 sheet from the questionnaire returns. From this table one can see that the price of photocopying an A4 sheet could vary enormously between councils with some councils making this available free of charge[26] to one council charging £10.32 for a single A4 photocopy. Most councils did however, as the median value shows, make a much smaller charge, with 54.3 per cent of councils charging less than 20 pence for an A4 photocopy.

In addition to this, councils were also asked in the questionnaire if they made any other charges for carrying out work using the register. The vast majority of councils, 60.6 per cent, said that they did not make any other charges for carrying out work using the register but a number of councils had set charges for carrying out work using the register, particularly when these requests were made by commercial entities. As one respondent would answer 'for commercial interests there is a standing charge of £52.00 for finding the required information from the register and for photocopying.'

Table 6.10   Frequency data for photocopying prices from questionnaire responses

			Dispersion	
	Mean	**Median**	**Minimum**	**Maximum**
Price of Photocopying	0.75	.20	0.0	10.32

From the questionnaire returns and case study visits and interviews, it can be seen that while some basic access issues, such as opening times and user support, have been addressed by many councils in the same way, there were a number of other issues such as promotion of the register, electronic access and charging that have led to significant differences in the way in which the registers had developed and were used. This can also be seen in relation to the third factor which was labelled 'commitment to management and users'.

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[26] In fact 17.8 per cent of councils would make no charge for a single A4 photocopy of something from the IPC register.

6.6.4   Commitment to management and users

The third factor identified from the multivariate analysis as being responsible for variance in the data, was labelled 'commitment to management and users'. A number of the variables that loaded heavily on the previous factor, were also identified as loading on this factor, but this time appeared to indicate the two key issues of users and information management. The variables relating to users were the number of enquiries and visits received, the availability of user guides and viewing the register, while the 'management' variables were consultation, planning, organisation of the register, indexing and the removal of documents. Commitment to users and management therefore formed the third key area which was responsible for the diversity that had occurred in the development of the IPC registers.

The primary aim of government, in setting up the IPC registers, had been to provide the public with greater access to information on industrial pollution and most questionnaire respondents and interviewees agreed that it was essential that this type of information was in the public domain. However, when asked if the register had been effective in achieving the government's aim, most respondents thought that it had not, largely because very few people ever used it. In fact, over half of the councils who responded to the questionnaire, 52.7 per cent reported that they received no enquiries or visitors to the register in an average month. However, when councils did receive regular enquiries and visits, this appeared to have had an significant effect on the way in which the register was set up and managed.

Use of the register appeared to be influenced by a number of things, one of which was the type of council. This is illustrated in Table 6.11, which shows that Unitary Authorities, London Boroughs and Metropolitan Borough Councils were more likely to receive enquiries and visits than District/Borough Councils and Welsh Unitary Authorities. Similarly, councils in the Midlands, North East, North West and Thames Environment Agency Regions, were more likely to receive enquiries and visits than those located in the Anglian, Southern, South West and Wales regions. Finally, councils with above average numbers of authorisations and variations were also more likely to receive more enquiries and visitors as was highlighted in Section 6.6.2. This latter finding was borne out by the case study visits, where Southampton City Council received very few enquiries and visits to the register, but the New Forest District Council received large numbers of visitors and enquiries, both from the UK and abroad, due to the national and international nature of the companies whose details could be found on their register.

In addition to receiving large numbers of visitors, the New Forest District Council also received a wide variety of users including sales representatives, pressure group members, consultants, students and members of the public. This variety in the different groups of people using the registers was also borne out by the questionnaire results, as can be seen in Figure 6.11.

Table 6.11   Council Type/Enquiries and Visits Cross-tabulation (% within Council Type)

Council Type	Enquiries and Visits in an average month		Total
	No Enquiries and Visits	Received Enquiries and Visits	
District/Borough Council	56.0%	44.0%	100.0%
Metropolitan District/Borough Council	47.6%	52.4%	100.0%
Unitary Authority	33.3%	66.7%	100.0%
Welsh Unitary Authority	77.8%	22.2%	100.0%
London Borough	42.9%	57.1%	100.0%
Total	52.7%	47.3%	100.0%

Figure 6.11   Register Users

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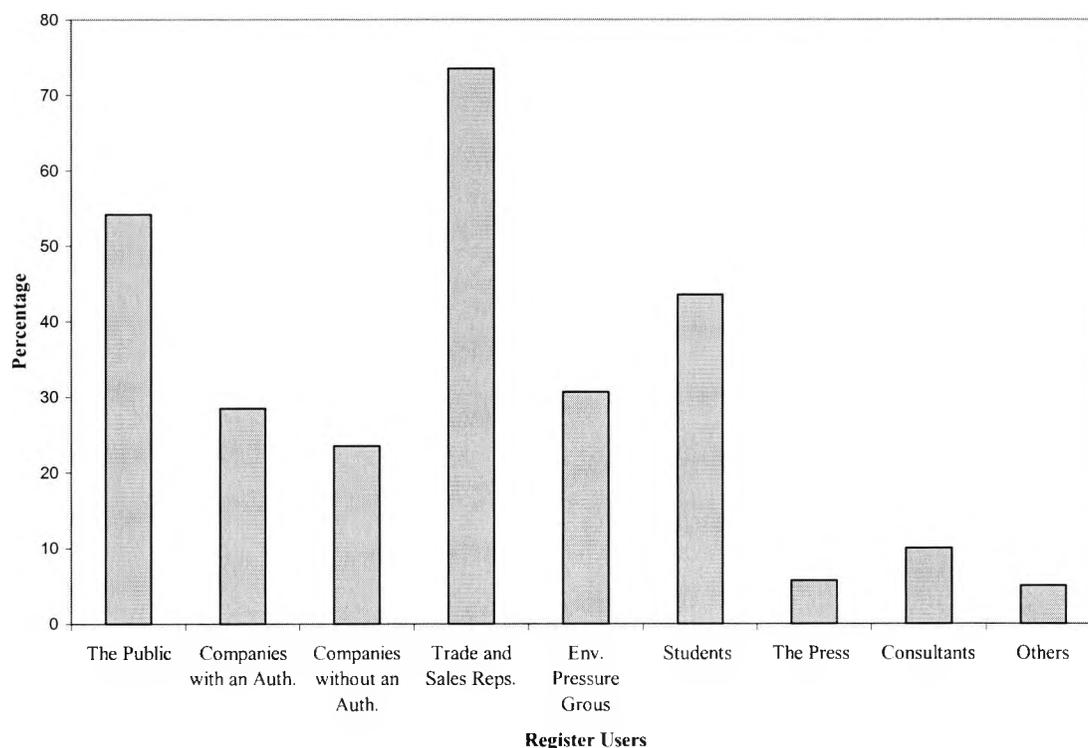
By far the largest group of users of the registers were trade and sales representatives, something that was also indicated by the three interviewees, who all stated that sales representatives, most of whom were selling pollution abatement equipment and were looking for new sales leads, were the most frequent visitors to the register. Members of the public were identified as the second largest group of users of the register. This was somewhat surprising, as most questionnaire respondents and interviewees commented that they received very few visits from members of the public, but some councils, like the New Forest District Council were particularly keen to support members of the public when they did come in to use the register and were keen to raise the profile of the registers amongst their local communities, as has been seen by the article in the Environment Newsletter.

Councils that received regular enquiries and visits to the register also appeared to have employed slightly different techniques to manage their registers than those that did not. For example, regular enquiries and visits seemed to encourage councils to organise their registers, as two thirds of the councils that did not arrange their registers received no enquiries or visitors in an average month. Registers that received regular enquiries and visitors were also more likely to have an index, 37.7 per cent compared to 26.7 per cent of those councils that didn't, and were also more likely to allow visitors access to other information, such as the Pollution Inventory on the web, 9.4 per cent compared to 2.9 per cent. Not surprisingly, as illustrated in Table 6.12, councils that received regular enquiries and visits were also more likely to think that significant amounts of staff time were spent dealing with enquiries and visitors.

Table 6.12   Time Costs Dealing with Enquiries/Enquiries and Visits Cross-tabulation (% within enquiries and visits)

Time Costs Dealing with Enquiries	Enquiries and Visits in an average month		Total
	No Enquiries and Visits	Received Enquiries and Visits	
Significant Staff Time Spent Dealing with Enquiries	2.8%	19.0%	10.4%
No Significant Staff Time Spent Dealing with Enquiries	97.2%	81.0%	89.6%
Total	100.0%	100.0%	100.0%

As the receipt of enquiries and visitors by local authorities could be seen to have an affect on the management of the register, so management issues themselves could also be seen to be

responsible for the variance in the data. From the questionnaire respondents and case study visits, a number of different management styles were identified in relation to the registers. This had also been highlighted by the cluster analysis, which identified differences in the management techniques employed by each cluster. Cluster 1 for example, was much more likely to have carried out some planning in relation to the register and to have an index and user guide available, than Clusters 2 or 3, while Cluster 2 was more likely to make information available to the public electronically.

The different management styles employed by different local authorities were particularly highlighted in the case study visits, where the organisation and management of each register was examined. On first appearances most of the IPC registers looked the same, as apart from Southampton City Council, all the registers were stored in lever arch files and most were organised alphabetically by company name. However, on further examination there were important differences between them. Most of the smaller registers were organised in the same way, with documents being separated by company and then organised chronologically. This method of organisation could be seen at Eastleigh Council, which had four authorisations issued to 4 companies, and also at Islington, Winchester and Nuneaton and Bedworth. It was also identified from the questionnaire returns as being the most widely used method of organising the register, as can be seen in Figure 6.12, with nearly 40 per cent of all councils organising their register in this way.

Figure 6.12   Methods of Register Organisation

Organisation

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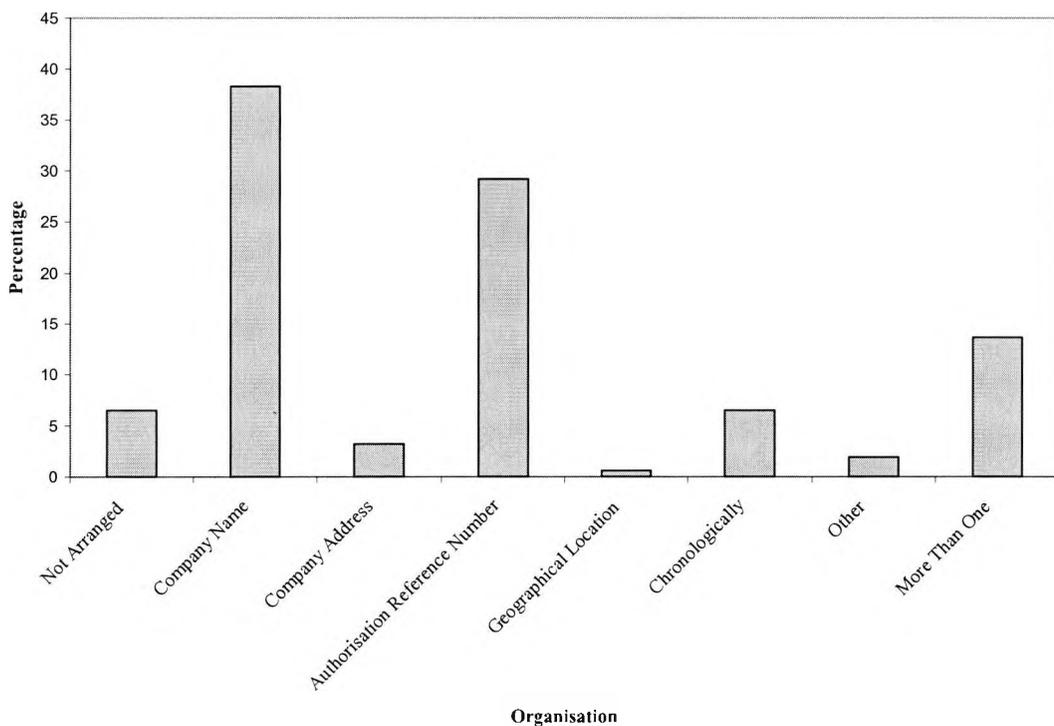
For smaller registers, where companies only had a single process, the use of company names as the basis for organising the register was a simple method, which meant that information for a particular company could be easily found. However, for larger registers, where companies tended to have multiple authorisations this could lead to significant problems, as was found at Portsmouth City Council. The register at Portsmouth was also organised by company name, with documents for each company placed in separate plastic folders. However, the plastic folders for each company were then split, in no particular order, between two lever arch files which made the register particularly difficult to use. In addition to this, one of the companies had two authorisations which meant that as well as being split between two folders, the documents for these two authorisations were also mixed up together. This made it virtually impossible to follow the 'story' of these authorisations and to do so, would have meant firstly sorting through both files to find the documents for that company, secondly, reorganising the documents so that the ones relating to each authorisation were then identified and finally sorting through the separated documents so that the 'story' of each authorisation could be identified.

To address this problem, the registers at both the New Forest District Council and Coventry City Council were organised by authorisation reference number. Each authorisation was issued with a unique six digit identifier by the Environment Agency (the authorisation reference or permission number) and all documentation issued in relation to that authorisation would contain that number. This could then be used, by local authorities, to identify documents relating to individual authorisations, so that information for the same company but different processes could then be separated and placed in different locations on the register. In both the New Forest District Council and Coventry City Council documents for each authorisation, were separated in this way and kept in individual lever arch folders.

The authorisation reference number was identified by the New Forest District Council as having been of particular use in their management of the register, as it meant that they could keep track of documentation and place it in the correct folder. However, it had also caused them one or two difficulties. These difficulties arose because of the way in which the authorisation reference number was generated. Each company applying for an authorisation had to pay a fee to the Environment Agency and a reference number was generated as a result of the payment of this fee. This reference number was then used by the Environment Agency to identify individual authorisations and meant that separate authorisations for the same company could be distinguished. Problems would arise, however, when companies began to make minor and major variations to their authorisations, as to carry out these changes they

had to pay a further fee to the Environment Agency and this led to a new reference number being issued, which had no relation either to the original reference number or to the company. Documentation relating to the new variation would then arrive with its own 'new' reference number rather than the original authorisation reference number, which made it particularly difficult for local authorities to keep track of where documents needed to go on the register. The New Forest had found these changes to the reference numbers particularly difficult to keep up with, as it meant they had to contend with 130 numbers, rather than the 28 original authorisation reference numbers that they had to begin with. It also meant that they needed to know, to which authorisation the 102 variation reference numbers related, so that they could continue to place information in the correct place on the register.

One way of overcoming this problem would have been for the New Forest District Council to have access to the Environment Agency's IPCIS index lists, which contained details of both the original authorisation reference number and new reference numbers issued for every variation in the country. This meant that new reference numbers could easily be traced back to their original authorisation reference number and this would have helped the council in their management of the register. However, the New Forest District Council was unaware of these index lists and so instead would have to phone someone at the Environment Agency to try and find out this information every time they had a problem. The low levels of usage of the IPCIS index lists were also highlighted by the questionnaire results, where only 24.2 per cent of respondents had access to them and a substantial number of respondents were, as the New Forest District Council, unaware of their existence.

Although the IPCIS index lists were only used by a small number of questionnaire respondents, the benefits of having an index to the register was recognised by substantially more. A large number of respondents, when asked about what improvements could be made to the register, cited better indexing as being a key improvement. This was also identified by the New Forest District Council as being an improvement that they would like to make to their register, as they thought that it would help both them to keep track of the register and visitors to use it. However, as with many other councils, they stated that a lack of time and money prevented them from undertaking this task. There were however a number of questionnaire respondents, 30.7 per cent, that had developed their own index to the register. These indexes ranged from simple, hardcopy lists of processes, as were seen in the case study visits to Nuneaton and Bedworth and the London Borough of Islington. A copy of the index list from the London Borough of Islington can be seen in Figure 6.13. To electronic indexes, which gave details of company names, locations, reference numbers, types of process and relevant official documentation. In many cases these indexes also contained details of

specific documents on the register and their location. One questionnaire respondent for example, had set up three indexes to the IPC register using an access database. The first of these listed each document on the register and gave details of the company, the reference number, the type of document and its location on the register. The second, set up to aid the council with its Air Quality Management Programme, listed individual pollutants and the levels of emissions and the third, gave details of the type of process and individual grid reference numbers, so that similar processes could be identified.

Figure 6.13   London Borough of Islington Index Sheet

LB ISLINGTON – TECHNICAL AND ENVIRONMENTAL SERVICES

ENVIRONMENTAL PROTECTION ACT 1990 – PART 1
PART B PROCESSES – AUTHORISATIONS

1.   EPA-AUTH-001: 13/10/92   PROCESS: PG3/1
     RMC Concrete (London) Ltd.   Blending, packing, loading
     Randalls Road, N1 0DJ   and use of bulk cement

2.   EPA-AUTH-002: 4/2/93   PROCESS: PG6/34
     Exan Coachworks   Respraying of road vehicles
     392 Camden Road, N7 0SJ

3.   EPA-AUTH-OO3: 30/5/95   PROCESS: PG6/34
     Highbury Ford   Respraying of road vehicles
     469 Holloway Road, N7 6LB

4.   EPA-AUTH-OO4: 21/7/95   PROCESS   PG6/34
     VNK Motors   Respraying of road vehicles
     2a-3 Stock Orchard Street, N7

ENVIRONMENT AGENCY AUTHORISATIONS

1.   Citigen Ltd.   Combustion Process
     47 – 53 Charterhouse Street
     London EC1M 6HA

     Authorisation AB7221 – 20/10/95
     Variation AV1564 – 6/3/96

For more information contact: Romi McDonald, Scientific Services.
Tel: 020 7477 3227

There were a number of similarities shared by councils that had introduced an index to their register. For example, councils with an index were more likely to receive enquiries and visits to their register than councils without, 56.5 per cent compared with 43.5 per cent, and were also more likely to have addressed other access and information management issues. For

example, councils with an index were more likely to have encouraged access to the register in other ways, such as by promoting the register, where 50.0 per cent of councils carried out some promotion compared to 21.8 per cent of those without an index, and by making information from the register available electronically, where 17.0 per cent of councils with an index had made information available electronically compared to 4.8 per cent of those without. In addition to this, they were also more likely to have addressed other information management issues, so that councils with an index were twice as likely[27] to be able to check to see if they had all the correct documents on their register and were more likely to have removed documents from their register, with 40.4 per cent removing documents compared to 25.7 per cent of councils without an index. They were also more likely have organised their register in certain ways, as can be seen from Table 6.13 and to have carried out some planning into the setting up and maintenance of the register, with 48.9 per cent having carried out planning compared with 37.7 per cent of those without an index.

Table 6.13   Organisation of the Register/Index Cross-tabulation (% within Index)

Organisation of the register	Index		Total
	Yes	No	
Not Arranged	2.1%	8.5%	6.5%
Company Name	19.1%	47.2%	38.6%
Company Address	2.1%	3.8%	3.3%
Authorisation Reference Number	57.4%	16.0%	28.8%
Geographical Location	0.0%	0.9%	0.7%
Chronologically	6.4%	6.6%	6.5%
Other	0.0%	2.8%	2.0%
More than One	12.8%	14.2%	13.7%
Total	100.0%	100.0%	100.0%

In fact it was the issue of planning, that appeared to be central to the differences that emerged in relation to the management of the registers by individual local authorities. This was particularly highlighted by the questionnaire returns, where 41.1 per cent of respondents had carried out some planning in relation to the creation and maintenance of the registers. Once again, there were a number of issues that appeared to link those councils that had carried out planning, one of which was the size of their register, as councils with an above average number of authorisations and variations were more likely to have carried out planning than those with a below average number.[28] Similarly councils that received regular enquiries and

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[27] 22 per cent compared to 11 per cent of those councils without an index.

[28] 37.5 per cent compared to 30.2 per cent of councils who had not carried out any planning

visits to their register were also more likely to have carried out some planning, as is highlighted by Table 6.14.

Table 6.14   Enquiries and Visits/Planning Cross-tabulation (% within Planning)

Enquiries and Visits	Planning			Total
	Yes	No	Don't Know	
No Enquiries or Visits	44.4%	61.5%	56.8%	52.7%
Received Enquiries and Visits	55.6%	38.5%	43.2%	47.3%
Total	100.0%	100.0%	100.0%	100.0%

Questionnaire respondents were asked about the different areas where planning had been carried out and as can be seen from Figure 6.14, the most widespread planning was carried out into management issues like the collection of documents, the organisation of the register and the storage of the register, rather than access issues like user access, use of information and information dissemination. However, even then, councils who carried out some planning were much more likely to have addressed some of the access issues that arose in relation to the register than councils that didn't. This could be seen in connection to a number of access issues including promoting the register,[29] the dissemination of information,[30] making information from the register available electronically,[31] making user guides available and allowing visitors access to the Pollution Inventory. In fact in relation to the latter two, all the councils that made user guides available and allowed visitors to access the Pollution Inventory, had carried out some planning into the registers. There, therefore appeared to be a positive link between councils that had carried out planning and councils that encouraged information access and the use of the register.

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[29] Where 39.6 per cent of the councils that had carried out planning now promoted the register, compared to 16.2 per cent of those that did not.

[30] Where 12.7 per cent of the councils that had carried out planning actively disseminated information to the public compared to 7.1 per cent of those that did not.

[31] Where 14.3 per cent of the councils that had carried out planning made information from the register available electronically compared to 4.7 per cent of those that did not.

Figure 6.14   Register Planning
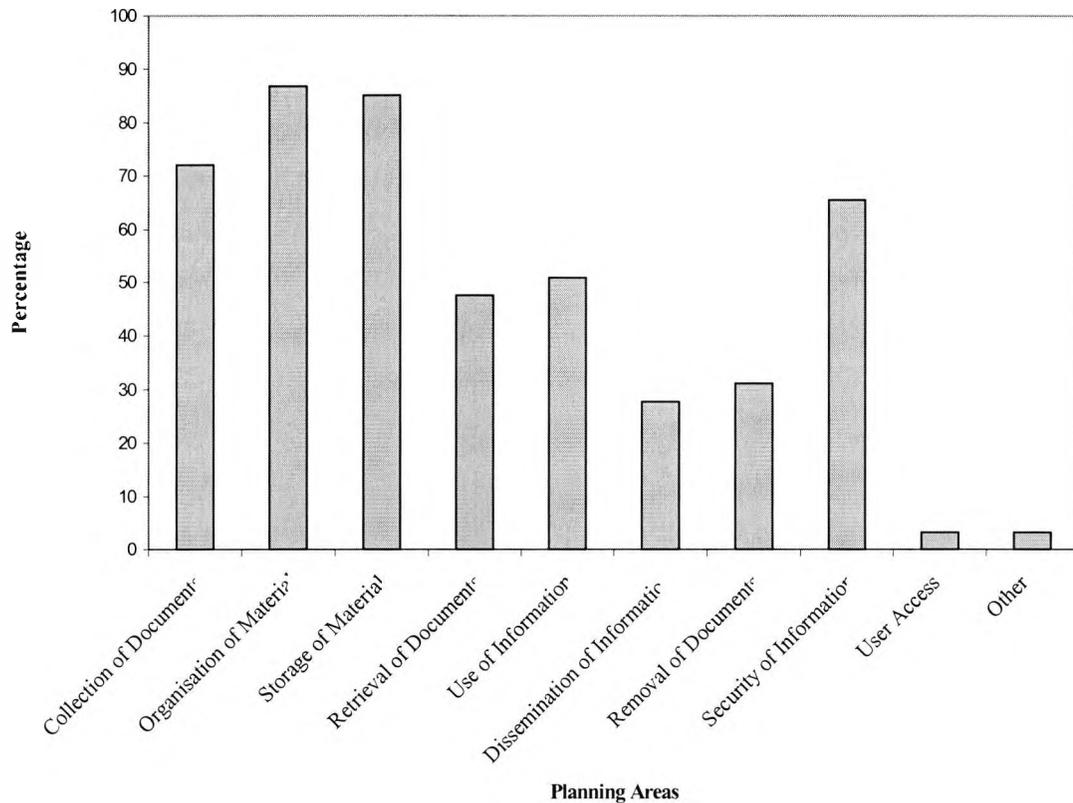
Planning Areas

A similar link could also be identified in relation to information management, where planning again appeared to have a significant impact on the information management techniques that were used by that council. For example, 96.9 per cent of councils who had carried out planning had organised their register, compared with 85.7 per cent of those that had not. Councils that had carried out planning were also twice as likely as their non-planning counterparts, to have made the register more manageable[32] and as has already been seen, 36.5 per cent of these councils had set up an index to their register, compared with 26.2 per cent of those that hadn't carried out any planning.

The importance of planning, in relation to the management of registers, was also highlighted by the interviewees, particularly the New Forest District Council where detailed planning had been carried out into the management and access issues raised by the register, once they realised the amount of information that they would be receiving. The New Forest District Council felt that this planning process had been particularly beneficial, as it meant that they had already decided how and where the documents would be kept before they began to arrive. Their plans have also been up-dated as new problems have arisen and solutions have had to be

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[32] 15.9 per cent compared to 7.3 per cent of those councils who had not carried out any planning.

found. In fact a number of councils stated that they had examined their plans again more recently as many of them had decided to overhaul their registers and this had given them the chance to discuss any problems that had emerged. The importance of addressing individual issues in the planning stage was also highlighted by Southampton City Council, where concerns were raised about the security of information on the public register. In particular, they were concerned that information excluded on the grounds of national security or commercial confidentiality could find its way accidentally onto the register and that the council could face severe legal consequences if this occurred. They therefore used the planning stage to put procedures in place to try and prevent this from happening. In particular a coversheet stating what information should be placed on the register was kept at the front of the register which warned people about the exclusions for commercially confidential information, and information affecting national security, and gave information of the relevant guidance notes.

From the questionnaire results, the case study visits and interviews, it can be seen that information management has played a crucial role in determining the ways in which registers in different local authorities have developed. A number of issues have been identified which have influenced what information management techniques were employed by different registers. These included the issues of planning, indexing, organisation and the receipt of regular enquiries and visits. All of these issues can therefore be seen as being crucial in understanding the variance that has been identified in the local authority data.

6.6.4 Local Authority Characteristics

The fourth factor responsible for variance in the data was labelled 'local authority characteristics'. The variables that directly affected this factor were population density, the density of non-domestic properties, local authority population and the type of council. All of these would indicate the characteristics of a local authority such as its location, the level of urbanisation, the level of industrialisation and its size.

Council type appeared to be central to the characteristics of a council, largely because it was indicative of a number of things. Council type for example, could be an indicator of the council's location, particularly when examined in relation to population density, which could be used as approximate measure of urbanisation. As can be seen in Table 6.15, Metropolitan District Councils, Unitary Authorities and London Boroughs all had large numbers of councils with high population densities and could therefore be said to be located in highly urbanised areas, while District Councils and Welsh Unitary Authorities on average had much

lower population densities. This analysis appeared to be consistent with the way in which local authorities had developed in England and Wales, with Metropolitan District Councils being found in highly urbanised conurbations, like the Midlands and West Yorkshire and Unitary Authorities in large towns and cities like Bristol and Leicester, while District Councils covered smaller towns and rural areas, as did most Welsh Unitary Authorities. Similarly, Metropolitan District Councils and Unitary Authorities could also been seen to have a large number of councils with higher densities of non-domestic properties, this time indicating a higher degree of industrialisation.[33]

Table 6.15   Average Population Density/Council Type Cross-tabulation (% within council type)

Average Population Density	Council Type					Total
	District Council	Metro. District Council	Unitary Auth.	Welsh Unitary Auth.	London Borough	
Below Average Population Density	85.3%	22.7%	50.0%	90.9%	0.0%	67.9%
Above Average Population Density	14.7%	77.3%	50.0%	9.1%	100.0%	32.1%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Having examined the questionnaire responses, a link could be seen between council type, population density and number of non-domestic properties, whereby some types of councils were located in more heavily urbanised and industrialised areas than others. Having established this connection it also appeared that these characteristics could influence the type of register that was developed by different council types. For example, the more heavily urbanised/industrialised councils such as Metropolitan District Councils and Unitary Authorities on the whole appeared to have larger registers, than those councils with lower population densities and densities of non-domestic properties. This is illustrated in Table 6.16, which shows the cross-tabulation for council type and average number of authorisations and variations. This highlights the fact that Metropolitan District Councils and Unitary Authorities were much more likely to have larger registers, than District Councils. This was also borne out by the case study visits, where District Councils on the whole had the smallest registers, and Coventry City, a Metropolitan District Council, had one of the largest. The only exception to this was the New Forest District Council, which obviously fell into the

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[33] 68.2 per cent of Metropolitan District Councils and 55.0 per cent of Unitary Authorities had an above average density of non-domestic properties compare with 12.6 per cent of District Councils.

small category of District Councils with an above average number of authorisations and variations.

Table 6.16   Average Number of Authorisations and Variations/Council Type Cross-tabulation (% within council type)

Average Number of Authorisations and Variations	Council Type					Total
	District Council	Metro. District Council	Unitary Auth.	Welsh Unitary Auth.	London Borough	
Below Average No. of Authorisations and Variations	77.9%	36.4%	60.0%	63.6%	87.5%	69.2%
Above Average No. of Authorisations and Variations	22.1%	63.6%	40.0%	36.4%	12.5%	30.8%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Other characteristics could also be seen in relation to the registers held by different council types. For example, when comparing District Councils with Metropolitan District Councils and Unitary Authorities, a number of differences could be seen. As well as having smaller registers, District Councils also had fewer users, with 56 per cent receiving no enquiries or visits in an average month, compared to 47 per cent of Metropolitan District Councils and 33 per cent of Unitary Authorities. When examining the implementation of the register, they also carried out less planning and received less government guidance than Metropolitan District Councils and Unitary Authorities and in relation to information management, were less likely to have indexed their register or to have tried to make it more manageable. All of these points are highlighted in Figure 6.15. Similarly when looking at Unitary Authorities, one could highlight a commitment to access issues, that did not exist in other council types. This is illustrated in Figure 6.16 which shows that, when compared to Metropolitan District Councils and District Councils, Unitary Authorities were much more likely to publicise the register, to supply user guides to visitors, to actively disseminate information on the register, to make the register available electronically and to give visitors access to the Pollution Inventory on the Environment Agency's web-site, all of which shows a degree of commitment to access issues that did not exist in other local authorities.

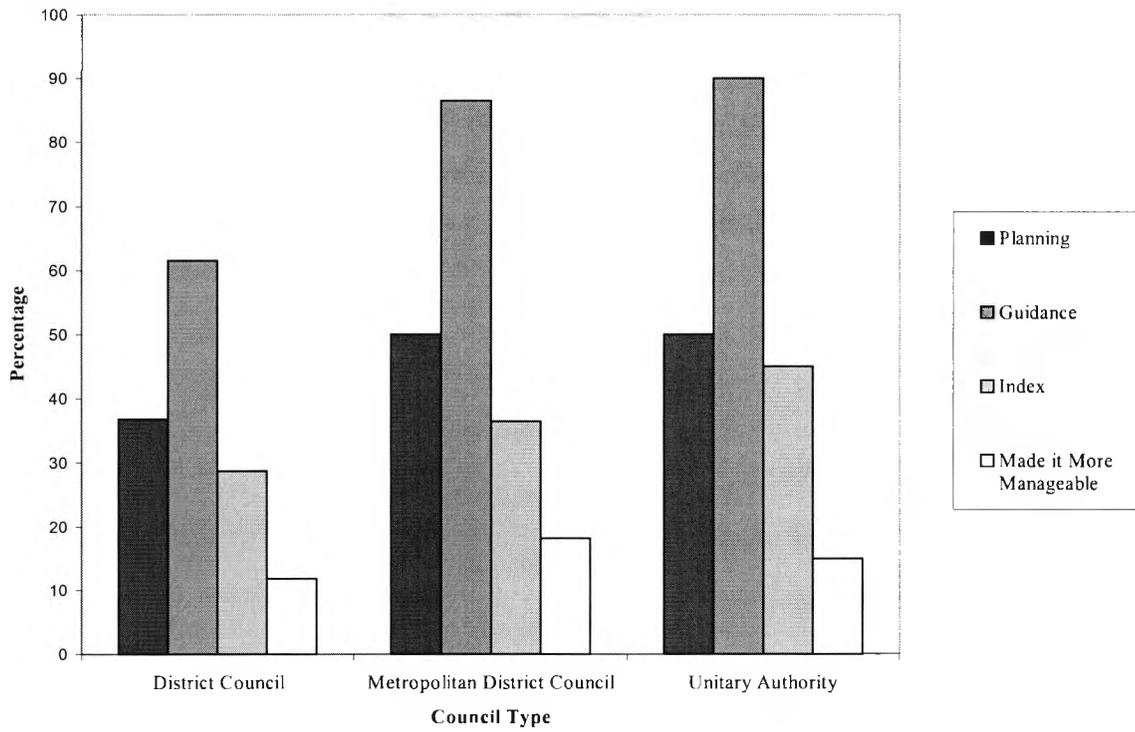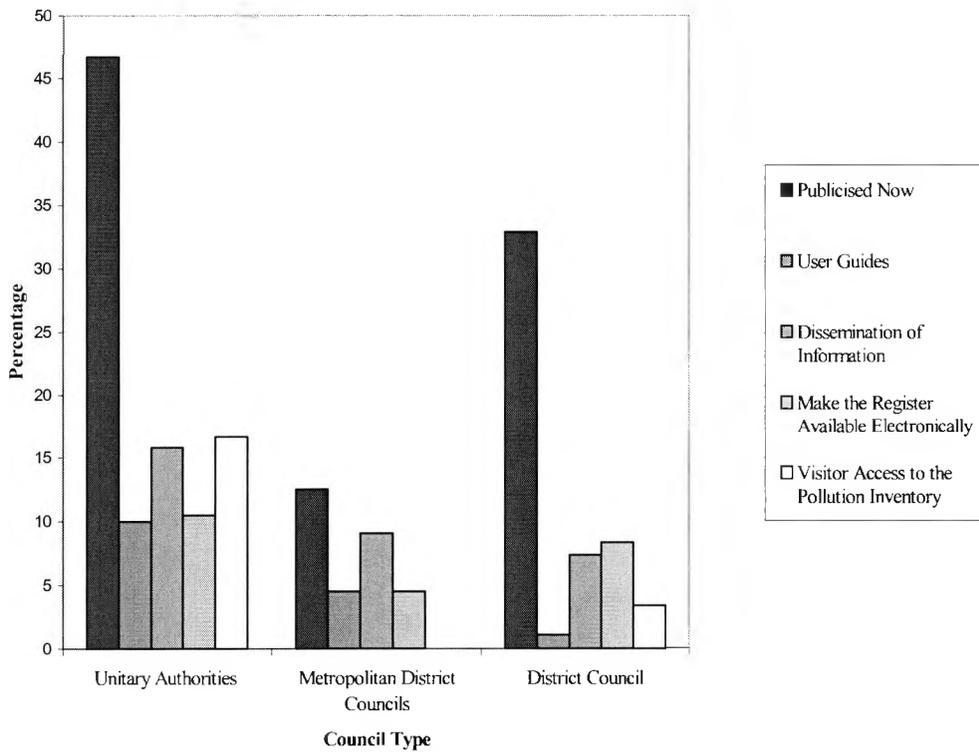**Figure 6.15   Differences between Council Type**

Figure 6.16   Unitary Authority's Commitment to Access Issues

From this examination, the characteristics of individual local authorities, such as population density, the density of non-domestic properties and council type can be seen to have influenced the types of register that have been developed. In many ways this replicates some of the findings from the Cluster analysis, which also highlighted a difference between council types. Cluster 1, for example, was dominated by Metropolitan District Councils and Unitary Authorities with large registers and a commitment to access and management, Cluster 2 by London Boroughs and Welsh Unitary Authorities with below average sized registers and small numbers of visitors and Cluster 3 by District Councils, with small registers, who carried out little planning.

6.6.6 Location and Policy Issues

The penultimate factor identified from the principal components analysis as being responsible for the variance in the data was labelled location and policy factors. The variables that loaded most heavily on this factor were Environment Agency Regions and Areas and Council Type. These variables were therefore indicative of where council's were located in the country and also of the role that the different Environment Agency Regions and Areas had played in developing the IPC registers.

As with the previous factor, council type was again an indicator of where individual councils were located in the country, as can be seen in Table 6.17. Apart from District Councils which could be found in all Environment Agency Regions, most other council types were located in a relatively small number of regions. Welsh Unitary Authorities and London Boroughs, for example, could only be found in the Welsh and Thames Environment Agency Regions, while Metropolitan District Councils were located solely in the Midlands, North East and North West, with the vast majority being located in the north of the country.

Although the Environment Agency has no direct responsibility for the local authority registers, the relationship between councils and the Environment Agency does appear to have differed across different regions. Councils in the North East region, for example, were much more likely to have been consulted by the Environment Agency concerning the introduction of the register than those in other regions. These results can be seen in Figure 6.17, which also makes comparisons across the eight regions in relation to Environment Agency contacts, Environment Agency monitoring and access to the Environment Agency's IPCIS index lists. This graph, for example, illustrates that the percentage of councils across each region who have a contact at the Environment Agency is fairly consistent. Something that was also indicated by the interviewees, where both the New Forest District Council and Portsmouth

City Council had regular contacts at the Environment Agency who they said they could contact if they ever had any problems. In fact, Portsmouth stated that they felt they had particularly good relations with the Environment Agency office in Winchester and that this meant that they felt free to contact them for advice whenever necessary. This was not the case in all local authorities, however, as Southampton said that they had very little to do with the Environment Agency and had never needed to contact them about the register.

Table 6.17   Environment Agency Region/Council Type Cross-Tabulation (% within Council Type)

Environment Agency Region	Council Type					Total
	District Council	Metro. District Council	Unitary Auth.	Welsh Unitary Auth.	London Borough	
Anglian	20.0%	0.0%	0.0%	0.0%	0.0%	12.2%
Midlands	26.3%	22.7%	20.0%	0.0%	0.0%	21.8%
North East	5.3%	40.9%	30.0%	0.0%	0.0%	12.8%
North West	11.6%	36.4%	15.0%	0.0%	0.0%	14.1%
Southern	15.8%	0.0%	5.0%	0.0%	0.0%	10.3%
South West	10.5%	0.0%	15.0%	0.0%	0.0%	8.3%
Thames	9.5%	0.0%	15.0%	0.0%	100.0%	12.8%
Wales	1.1%	0.0%	0.0%	100.0%	0.0%	7.7%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Figure 6.17 also identifies a number of differences in the Environment Agency regions in relation to the monitoring of registers. Once again the North East region had the highest monitoring rate, with 30 per cent of councils having been monitored, while the Anglian region had the lowest with only 5 per cent of councils having been monitored. The only council visited that had been monitored was the New Forest District Council who had been visited by an Environment Agency auditor. This auditor had a list of documents which should have been on the register, which he checked against the documents that were actually there. However, the New Forest District Council's register had caused him some difficulties as his list of documents was in chronological order and as the New Forest District Council's register was not organised in that way it had taken him a considerable amount of time to complete his task. However, the Council was praised by the Environment Agency for the organisation and maintenance of their register following this audit.

Figure 6.17   Comparisons Between Councils in Different Environment Agency
Regions in relation to Environment Agency Issues
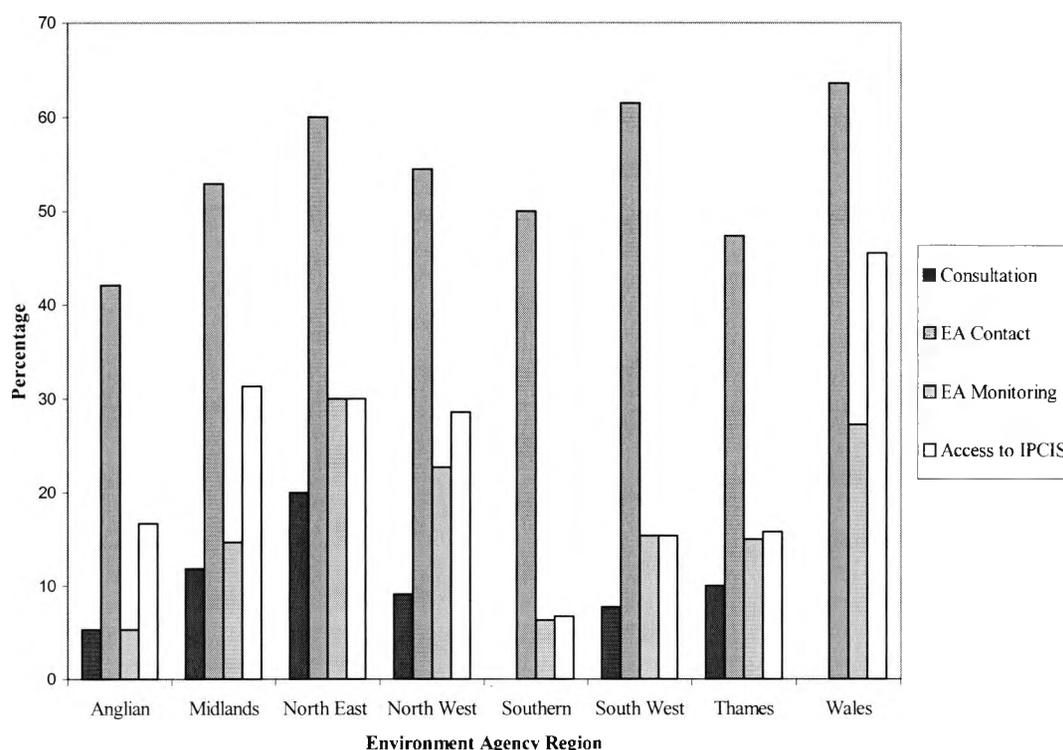
Finally, Figure 6.17 also compares the percentage of councils within each region that had access to the IPCIS index lists and as can be seen access to these lists varied dramatically across the regions. The highest percentage of councils with access to the index lists were in Wales, with the Midlands, North East and North West registers following behind. However, in the other Environment Agency regions there were very few councils with access to IPCIS, as was highlighted by the questionnaires where none of the councils interviewed, all of which were located in the Southern region, had access to IPCIS and in many cases were unaware of its existence as a management tool.

The location of councils in different Environment Agency regions can therefore be seen to have influenced the relationship between local authorities and the Environment Agency. These regions will now be examined to see if they affected the way in which different registers developed. This, like the council type comparisons, will be explored by examining the two key implementation issues of planning and guidance and the two key information management issues, of indexing and making the register more manageable. The results of these comparisons can be seen in Figure 6.18.

Figure 6.18   Comparisons Between Councils in Different Environment Agency Regions in relation to Implementation and Management Issues
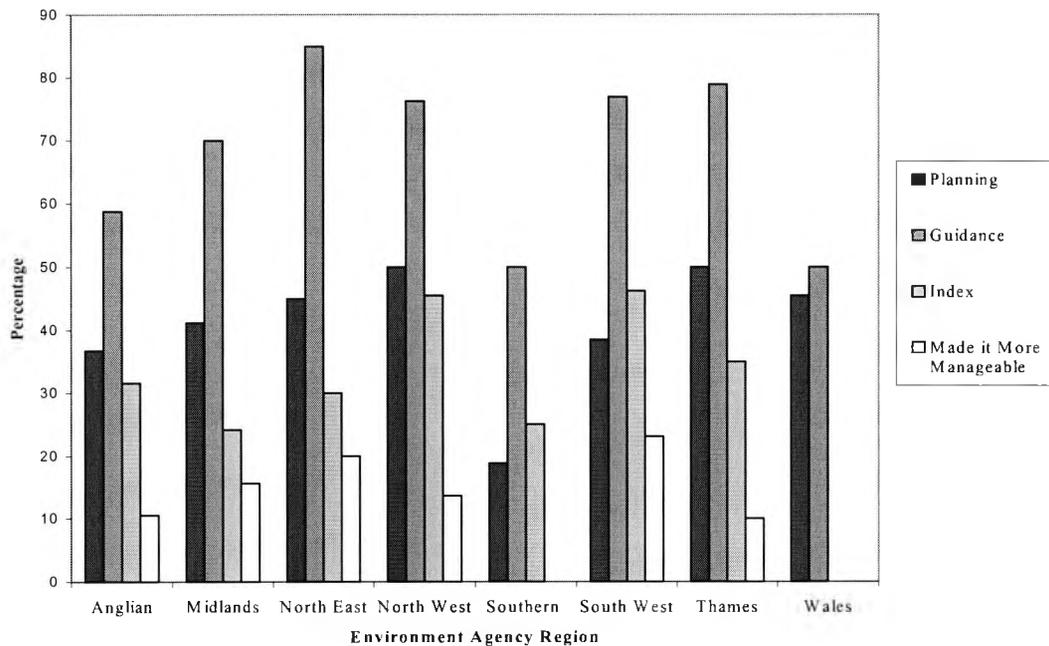
It is not surprising that the two northern regions, of the North East and North West had some of the highest percentages of councils who have carried out planning, received government guidance, indexed their register and made it more manageable, as these two regions had a large number of Metropolitan District Councils and Unitary Authorities, which were identified in the previous section as addressing these issues. What was more surprising was that councils in the South West Region were also highlighted in relation to these issues. On further examination, however, councils located in the South West region appeared to have a strong commitment towards users and access. This could be seen from the questionnaire responses where, when compared to the frequency results of the whole local authority data set, councils in the South West were more likely to publicise their registers,[34] to have an index[35] and to make user guides[36] available. In addition to this, 15.4 per cent of South West councils were actively disseminating information from the register compared with 8.4 per cent overall and 38.5 per cent of councils were making information available electronically, compared with 8.3 per cent of councils overall. This encouragement of access to the IPC registers was also highlighted in the comments made by one questionnaire respondent from the South West, who saw the IPC register as an integral part of their Local Agenda 21

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[34] 46.2 per cent of councils promoted their registers compared to 32.1 per cent overall.

[35] 46.2 per cent of councils had an index compared to 30.3 per cent overall.

[36] 7.7 per cent of councils made user guides compared to 2.6 per cent overall.

initiative to make more environmental information available and whose council were starting to develop a range of ways through which information from the register could be made available to citizens in a more user-friendly way.

Although the Environment Agency regions had no direct responsibility for the local authority registers in their area, there does appear to be a link between them, with higher percentages of councils in some regions promoting access to their register and using different management techniques than others. In many of these cases, these differences can be linked to other factors such as the council type and size of the register but in some cases there appears to be a strong link to Environment Agency region, as in the South West.

6.6.7   Costs

The final factor identified from the principal components analysis and the one responsible for the lowest amount of variance in the data has been labelled 'costs'. The main issues raised by this factor relate to the financial and time costs of the registers. The variables that loaded heavily on this factor were therefore monetary costs to the council and charges made by councils for carrying out work using the register, time costs for maintaining the register and time costs for dealing with enquiries for the register.

The first issue raised by this factor related to financial costs of the register and whether these had had a significant impact on the council. As can be seen from Figure 6.19, there was only a small percentage of councils, 8.7 per cent, that thought the IPC register had resulted in significant additional monetary costs. However, most of the councils that did feel that the register had resulted in additional monetary costs shared a number of characteristics. For example, they appeared to have large registers, with 53.8 per cent of them having above average numbers of authorisations and variations, compared with 30.9 per cent overall, they were often based in North East and North West Environment Agency regions, 38.5 per cent compared to 27.6 per cent overall and were made up of a high percentage of Metropolitan District Councils and Unitary Authorities, 46.2 per cent compared to 36.2 per cent overall. These also appeared to be the characteristics of the councils that had introduced charges for carrying out work using the register.

Figure 6.19   The Financial Costs of the Register
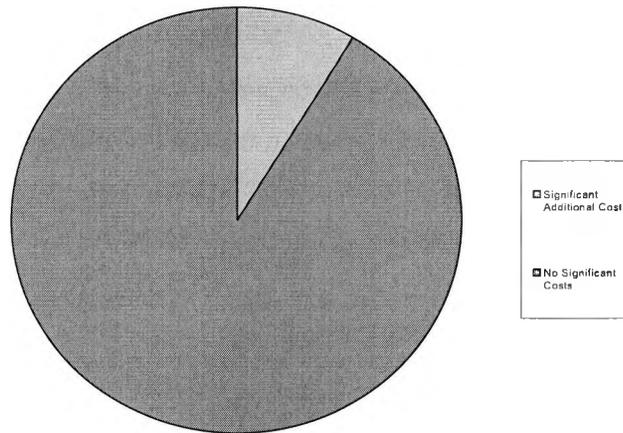
In addition to this, many of the councils that thought the register had resulted in significant additional costs had also introduced a variety of measures to support the use of the register, such as indexes and users guides. These councils therefore usually dealt with substantial numbers of documents and carried out additional work in relation to their registers. When cross-tabulating financial costs with those variables that looked at the time costs for dealing with enquiries and maintaining the register where there also appeared to be a direct link between, as is illustrated in Tables 6.18 and 6.19, with those councils who thought that the register had resulted in significant additional monetary costs, also more likely to think that it had resulted in significant additional time costs, both in dealing with enquiries and maintaining the register.

Table 6.18   Time Costs Dealing with Enquiries/Monetary Cost to the Council Cross-Tabulation (% within Monetary Cost to the Council)

Time Costs Dealing With Enquiries	Monetary Cost to the Council		Total
	No Significant Cost	Significant Additional Cost	
Significant Staff Time to Deal With Enquiries	5.5%	38.5%	8.6%
No Significant Staff Time to Deal With Enquiries	94.5%	61.5%	91.4%
Total	100.0%	100.0%	100.0%

Table 6.19   Time Costs Maintaining the Register/Monetary Cost to the Council

Cross-Tabulation (% within Monetary Cost to the Council)

Time Costs Maintaining the Register	Monetary Cost to the Council		Total
	No Significant Cost	Significant Additional Cost	
Significant Staff Time to Maintain the Register	14.8%	69.2%	19.9%
No Significant Staff Time to Maintain the Register	85.2%	30.8%	80.1%
Total	100.0%	100.0%	100.0%

A further issue of costs highlighted by the study related to time and particularly to the time councils spent dealing with enquiries and maintaining the register. As with the financial costs only a small percentage of councils, 9.8 per cent, felt that they had spent significant amounts of time dealing with enquiries but as can be seen from Figure 6.20, substantially more felt that they spent significant amounts of time maintaining the register.

Councils that felt they spent significant amounts of staff time maintaining the register, were again more likely to have an above average number of authorisations and variations[37] and would usually have carried out a number of management initiatives in relation to the register. For example, these councils were more likely to have carried out planning in relation to the register,[38] to have an index for the register[39] and to have removed documents from their register.[40] All of which indicates a long term commitment to the management of the register. In addition to this they would also receive regular enquiries and visits to the register.[41] This was borne out by the interview carried out at the New Forest District Council, where they felt that they had put a significant amount of effort into filing and maintaining the register, so that it could be easily used by visitors and that this effort was worthwhile due to the large number of users that that they received. Thus the link between maintenance of the register and the number of users was again highlighted. This can also be seen from Table 6.20 which shows a link between those councils that felt they spent a significant amount maintaining the register and those that felt they spent a significant amount of time dealing with enquiries.

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[37] 53.1 per cent compared to 31.7 per cent overall.

[38] 56.3 per cent compared to 40.0 per cent overall.

[39] 43.8 per cent compared to 31.0 per cent overall.

[40] 37.5 per cent compared to 29.2 per cent overall

[41] 63.3 per cent compared to 47.4 per cent overall.

Figure 6.20   Time Costs Maintaining the Register
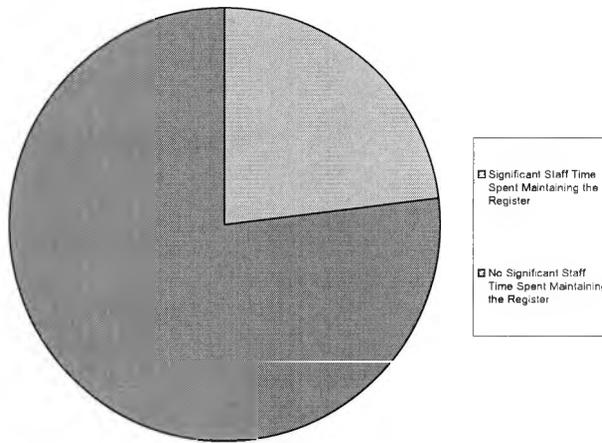
Costs, as this section has highlighted, were also responsible for variance in the data, largely because they were indicative of other issues occurring in relation to the registers. For example, time costs spent maintaining the register were often indicative of other management issues, time costs spent dealing with enquiries were indicative of the number of users and financial costs seemed indicative of the size and location of the register. There also appeared to be strong links between these different costs, with many of the councils who found that they spent significant time or money in one area, also finding that this was the case in the others.

Table 6.20   Time Costs Dealing with Enquiries/Time Costs Maintaining the Register Cross-Tabulation (% within Time Costs Maintaining the Register)

Significant Staff Time to Deal with Enquiries	Time Costs Maintaining the Register		Total
	Significant Additional Time	No Significant Time	
Significant Staff Time to Deal with Enquiries	35.5%	2.7%	9.9%
No Significant Staff Time to Deal with Enquiries	64.5%	97.3%	90.1%
Total	100.0%	100.0%	100.0%

Using information from the questionnaire responses, case study visits and interviews, this section has corroborated the multivariate analysis carried out in Section 6.4. This multivariate analysis had firstly established that an underlying structure could be identified in the data and that the IPC registers formed a series of groups, rather than one homogenous entity and secondly, that there were six factors that could be identified as explaining the variance in the data. The more detailed examination of these factors, carried out in this section, has further highlighted the importance of these factors in shaping the development of IPC registers and has shown that along with register size and local authority characteristics, the two issues of information access and information management are particularly significant for explaining the diversity in the data.

Chapter 7.   Environment Agency Case Study Findings

7.1   Introduction

This chapter examines the IPC registers set up by the Environment Agency in England and Wales, through an analysis of the data gathered from the questionnaire returns, case study visits and interviews. This chapter is arranged in four sections. The first section sets out the research questions addressed in this chapter. The second section sets out the data collected from the Environment Agency questionnaire survey and government statistical sources and examines its reliability and validity as a data set. The third section sets out the case study visits and interviews that formed the second method of data collection for this investigation. The final section examines the implementation of the IPC registers by the Environment Agency by drawing on the data collected from the case study visits, interviews and questionnaire returns. Unlike the local authority questionnaire returns, visits to the Environment Agency had highlighted the uniformity of the IPC registers and in light of this, the multivariate analysis that had been used to examine the variance in the local authority data was considered inappropriate. The analysis of the Environment Agency questionnaire data set was therefore conducted using univariate and bivariate techniques. In section four, this analysis is combined with the information gathered from the case study visits and interviews to build up a detailed picture of the Environment Agency IPC registers.

7.2   Research Questions

There are a number of research questions examined in this chapter including:

- Is the Environment Agency questionnaire data set valid?
- Is the Environment Agency questionnaire data set reliable?
- Have size issues had any affect on the Environment Agency's IPC registers?
- What procedures have been put in place by the Environment Agency to support access to the registers?
- How is the information contained within the Environment Agency's copy of the register being used?
- What particular management strategies has the Environment Agency put into place?
- How does the Environment Agency support users of the registers?
- What have been the cost implications of the registers for the Environment Agency?

7.3   Environment Agency Questionnaire Responses

Questionnaires were sent to sixteen Environment Agency offices with an IPC register. The questionnaire was divided into six sections which examined information about the respondent, background information to the register, the promotion and use of the register, the implementation of the register, information management and the respondent's experience and impressions of running the register. The questionnaire was designed primarily to investigate the three issues of information access, policy implementation and information management. However, before examining the data gathered to investigate these issues, this section will first examine the general characteristics of the questionnaire returns, in an attempt to establish the reliability and validity of the data set.

7.3.1   Reliability and validity of the data

Questionnaire responses were received from fourteen of the sixteen Environment Agency offices with an IPC register, a response rate of 87.5 per cent. The data gathered was then coded and entered into the SPSS statistical package for analysis. In addition to the questionnaire information, data from a number of other sources was also entered into the package. A list of these additional variables can be seen in Figure 7.1

The collection of this additional data would prove to be quite difficult, as apart from the data about the numbers of authorisations and variations for each Environment Agency region and area, which could be gained from the Agency's own IPCIS index lists, very few other statistics were made available at these levels. One of the main reasons for this was that the Environment Agency's regions and areas were based on river boundaries rather than any other administrative entity[1] and so statistics made available at county or regional level by the Office of National Statistics were of little use. After contacting each Environment Agency region, it also became apparent that while some regions/areas maintained some general statistics these were not available nationally. It was decided however, that some outside statistics were necessary for the questionnaire analysis and so this problem was solved by using the IPCIS index lists. These index lists were used to establish which Environment Agency region/area local authorities with an authorisation fell in. From this data, the location

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[1] See for example, the map of Environment Agency regions in Appendix 21 which also shows county boundaries.

of those local authorities without an authorisation could also be identified[2] and finally, the statistics for each local authority were added together to give an approximate set of statistics for each region and area.[3] These statistics were then compared with those that had been obtained from the Environment Agency to check for accuracy. For example, the Environment Agency Southern region had been able to say that they had a population in their region of approximately 4.6 million and an area of 11,000 square km, these compared well with those statistics collated by the author which put the population of the Southern region at 4,639,000 and the area at 11,038 square km.

Figure 7.1   Other variables employed in Environment Agency questionnaire analysis

Variable	Source
Number of Authorisations	Environment Agency IPCIS Index Lists[4]
Number of Minor Variations	Environment Agency IPCIS Index Lists
Number of Major Variations	Environment Agency IPCIS Index Lists
Total Number of Authorisations and Variations	Environment Agency IPCIS Index Lists
Population	Regional Trends 2002[5]
Area square km	Regional Trends 2002[6]
Persons per square km	Regional Trends 2002[7] (population divided by area in square km)
Non-domestic Property per square km	Local Government Comparative Statistics 1999[8] (non-domestic property divided by area in square km)

Having collated all the data and carried out the data entry, a number of steps were taken to examine the reliability of the data set. In examining the reliability of the data, the main concern was to establish the consistency of the data and the first step taken to achieve this was

[2] The maps of local authorities that could be found in the Municipal Yearbook and Public Services Directory 2001 were also crucial in identifying which Environment Agency region/area local authorities belonged.

[3] A table showing the regional and area location of each local authority, as established by the author, can be found in Appendix 22.

[4] A copy of the Environment Agency IPCIS index lists can be obtained by contacting the Public Enquiries Unit, Environment Agency, Rio House, Waterside Drive, Aztec West, Almondsbury, Bristol, BS12 4UD Tel: 01454 624 411.

[5] Local authority data added together based on relationships set out in Appendix 22.

[6] Local authority data added together based on relationships set out in Appendix 22.

[7] Local authority data added together based on relationships set out in Appendix 22.

[8] Local authority data added together based on relationships set out in Appendix 22.

to clean the data to identify any omissions or errors. Once again at this stage, steps were taken to improve the consistency of the data by addressing the more ambiguous responses to the questionnaire. In a number of cases this led to the creation of additional response options for those respondents who had written alternative answers on their questionnaire. Having completed the process of data cleaning, the data set was then analysed using univariate techniques to examine each variable. The frequency distributions for each variable were calculated, to provide a general overview of the data. A summary of these frequency tables can be found in Appendix 14. As well as giving an overview of the data, this analysis was also used to identify any problems with the data.

Having carried out this first stage of the data analysis, with the aim of establishing the reliability of the data set, the next stage was to examine the validity of the data. In particular this stage examined the level of bias in the data, but this would prove to be less problematic than the local authority questionnaire data due to the high response rate. However, the Environment Agency's copies of the IPC register was still split between the eight Environment Agency regions and so it was important to see if these were all represented within the respondents. The eight regions were:

- Anglian;
- Midlands;
- North East;
- North West;

- Southern;
- South West;
- Thames;
- Wales.

In four of these regions, Anglian, North West, Southern and South West, the register was held at the Environment Agency's regional office, but in the other four regions, Midlands, North East, Thames and Wales, the register had been devolved further and was held at three area offices within that region. A full list of the offices where the Environment Agency registers were held can be seen in Appendix 9. An analysis of the questionnaire results showed that responses had been received from every Environment Agency region and for regions where the register was held at area offices, from at least two of the three area offices in that region. The questionnaires could therefore be seen as giving a broad overview of the Environment Agency registers across the country and in light of this, the levels of possible bias within the data could be seen to be at a minimum.

7.4 Environment Agency Case Study Visit and Interview Data

The case study visits and interviews formed the second part of the investigation into the Environment Agency IPC registers. Case study visits were made to four Environment Agency offices. These were:

- The Thames Regional Office;[9]
- The Southern Regional Office;
- The Midlands Lower Trent Area Office;
- North West Regional Office.

The case study visits were conducted using the same observational framework as used in the local authority visits, a copy of which can be found in Appendix 15. This focused on four main areas including information about the Environment Agency office, background information to the register, information management and other information.

In addition to these visits, interviews were also conducted with employee's at all four Environment Agency Offices. These interviews were carried out based upon the interview framework, which focused on the promotion and use of the register, the implementation of the register, information management and the interviewees experience and impressions of the register.[10] A full copy of the transcripts from the Environment Agency case study visits and interviews can be found in Appendix 17.

7.5 Environment Agency Questionnaire, Case Study Visit and Interview Analysis

The next section of this chapter analyses the questionnaire data, case study visits and interview transcripts. This analysis is set out in relation to those factors that were identified from the local authority analysis as being responsible for the variance in that data. These issues were the scale of management, commitment to access, commitment to management and users, local authority characteristics, location and policy issues and costs. Of course, not all of these factors identified in the previous chapter are relevant to the Environment Agency

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[9] When the case study visit was made to the Thames regional office in Reading, the IPC register for the whole region was located there. At the start of 2001 this register was then split between the three area offices within the region and so questionnaires were sent to the three area offices.

[10] A copy of the this can also be found in Appendix 15.

registers, but the main issues are used as a basis for the examination of the Environment Agency data, so that comparisons between that and the local authority data set can be easily made. The issues employed in this section as a framework to examine the Environment Agency registers are:

- Scale of Management;

- Commitment to access;

- Commitment to management and users;

- Costs.

7.5.1 Scale of management

As with the local authority registers, the size of the Environment Agency registers was also linked to the numbers of authorisations and variations issued to companies within their regional or area boundaries. This meant that as with the local authorities, their was some variation in the size of different Environment Agency registers, something that was particularly noticeable when comparing those held at regional and area level. These differences in the numbers of authorisations and variations held by different Environment Agency regions and areas can be seen in Table 7.1, which gives the individual statistics for each region or area with an IPC register, and in Table 7.2, which shows the mean, median and dispersion values for the four 'size' variables from the questionnaire returns.[11]

As register size was directly linked to the number of authorisations and variations, by cross-tabulating this variable with the type of Environment Agency office, it could be seen that the majority of offices with an above average number of authorisations and variations and therefore a larger register, were regional offices (66.7 per cent), while all of those with a below average number of authorisations and variations and therefore smaller registers, were area offices.[12]

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[11] These four size variables were number of authorisations, number of minor variations, number of major variations and total number of authorisations and variations.

[12] Eight agency offices were seen as having a below average number of authorisations and variations (i.e. less than 588.5) and six as an above average number (i.e. more than 588.5).

Table 7.1   **Frequency distributions for numbers of authorisations and variations**

EA Region	EA Area	No. of Authorisations	No. of Minor Variations	No. of Major Variations	Total
Anglian		323	556	122	1001
Midlands	Upper Trent	158	485	40	683
Midlands	Lower Trent	139	478	50	667
Midlands	Lower Severn	82	201	23	306
North East	Dales	201	962	44	1207
North East	Northumbria	106	336	24	466
North East	Ridings	318	1043	60	1421
North West		497	1227	76	1800
Southern		154	397	40	591
South West		109	197	50	356
Thames	North East	118	179	47	344
Thames	South East	65	123	9	197
Thames	West	22	48	7	77
Wales	Northern	73	109	19	201
Wales	South East	100	250	44	394
Wales	South West	58	196	16	270

Different types of Agency office could therefore be seen to have different size registers, however, unlike the local authority data where size was responsible for much of the variance in the registers, this did not appear to have affected the way in which the Environment Agency registers had developed. The only real difference between those Environment Agency offices with an above average number of authorisations and variations and those with a below average number, was the time that they spent maintaining the register. Agency offices with an above average number of authorisations and variations were usually receiving larger numbers of documents every month than those with a below average number. For example, all the offices with an above average number of authorisations and variations were receiving more than 100 documents every month, compared with just 12.5 per cent of those with a below average number. As a result of this, Agency offices with an above average number of authorisations and variations were also spending longer amounts of time filing information into the register, with 83.5 per cent spending more than ten hours a month filing, compared with 25.0 per cent of those with a below average number. In light of these statistics, it is therefore not surprising that all the offices with an above average number of authorisations and variations felt that they spent significant time maintaining the registers, compared with 66.7 per cent of those with a below average number.

Table 7.2 **Frequency data for numbers of authorisations and variations from questionnaire responses**

			Dispersion	
	Mean	**Median**	**Minimum**	**Maximum**
Number of Authorisations	156.1	113.5	22	197
Number of Minor Variations	391.4	266.5	48	1227
Number of Major Variations	41.0	40	7	122
Total Number of Authorisations and Variations	588.5	411	77	1800

Register size can therefore be seen to have affected some of the practical issues that arose in relation to the registers, like the number of documents being received and the time staff spent filing and in light of this, also appeared to have influenced Agency staff's impressions of the register, but unlike the local authorities this issue did not appear to have affected the way in which the registers were set up and maintained or the numbers of people who used them.

7.5.2 Commitment to access

The second set of issues highlighted in the local authority research, as affecting the registers, were access issues. A variety of access issues were examined in the Environment Agency questionnaire returns, case study visits and interviews. These issues included those of physical access to the register, promotion of the registers and the support of users.

The first access issue addressed was that of physical access to the register. The Environmental Protection Act 1990, as previously highlighted, specified that the IPC register must be made available for inspection 'at all reasonable times', which was usually taken to mean normal office hours. In line with this requirement, all Environment Agency copies of the IPC register were made available for public inspection between 9.30am and 4.30pm, Monday to Friday. The Environment Agency also recommended, in its literature on the public registers, that visitors contact the office by telephone before visiting, to make sure that a member of staff would be available to help them during their visit. (Environment Agency: no date d) This advice was followed for all four Environment Agency register visits and meant that a member of staff was always available to show the author the layout of the register and answer any questions.

A second access issue examined by the questionnaires and interviews was the promotion of the register. Promotion is usually seen as being fundamental to the success of an information access policy, as without this it is unlikely to be widely used. However, as was highlighted in the previous chapter, the only promotion required by the Environmental Protection Act, in relation to the IPC registers, was that an advert be placed in a local newspaper notifying the public of a new IPC application and stating where this application could be viewed. The Environment Agency had however, made a number of efforts to promote the IPC registers to the public, something that was emphasised both by the questionnaire responses and by the interviewees. This promotion was mainly carried out at a national level, through the Environment Agency's national publications and web-site, but the questionnaire returns also highlighted the fact that half the offices were also publicising the IPC registers, either in their own regional or area publications or in the local press.

In the interview conducted at the Thames Regional Office, a number of Environment Agency leaflets were highlighted, that promoted the IPC registers to the public. These included leaflets that were designed to provide general information about accessing environmental information, such as *Access to Environmental Information* and *A Guide to Information Available to the Public,* both of which gave details of the public registers and where they could be accessed. An example of the information given about the public registers can be seen in Figure 7.2, which is taken from the leaflet *A Guide to Information Available to the Public*.

In addition to these general leaflets about environmental information, the Environment Agency also made a leaflet available to the public, about the public registers themselves. This was entitled *Public Registers of Environmental Information* and explained to the reader what public registers they could inspect, what documents they could expect to see, where they would need to go to inspect the public registers, whether they could ask for help whilst using the registers and what charges might be levied whilst they were using them. The information given about the IPC registers in this leaflet, can be seen in Figure 7.3.

Figure 7.2   Promotion of the public registers in general Environment Agency leaflets

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Public Registers

Under the legislation for many of its functions, the Agency must maintain a set of public registers. Information is held in a combination of paper and computer files which may be inspected at the Agency's Regional and Area offices.

The Agency's principal Public Registers are:

Integrated Pollution Control (IPC) Register, holding information on industrial processes regulated under the IPC regime:
- Applications, authorisations, variations, appeals, restrictions, monitoring records;
- Enforcement & prohibition notices, revocations, convictions/appeals.

Register of Industrial Works (the Air Register), holding information on certain industrial processes with the potential to cause air pollution. These processes are gradually being incorporated into the Agency's Integrated Pollution Control regime.

Radioactive Substances (RAS) Register, holding information relating to the use, accumulation and disposal of radioactive materials:
- Applications, registrations, authorisations, variations, cancellations;
- Enforcement & prohibition notices, convictions/appeals.

Water Quality and Pollution Control Register, holding information on:
- Discharge consent applications, decisions/appeals, changes of holder, revocations;
- Water quality objectives, monitoring records (including for bathing waters);
- Maps of freshwater limits, maps of 'controlled' coastal waters.

Water Abstraction and Impounding Register, holding information on licence applications, decisions/appeals, successions, revocations.

Maps of Main Rivers, for each area covered by the Agency's Regional Flood Defence Committees.

Waste Management Licence Register, holding information relating to the recovery or disposal of waste:
- Applications working plans, inspection reports, monitoring information;
- Modifications, revocations, suspensions, appeals, surrenders, convictions;
- Exemptions to licences.

Carriers and Brokers of Controlled Waste Register, holding information about applications to carry waste.

(Environment Agency: 1996a, 2)

Figure 7.3   Promotion of the registers in leaflets about the registers

What can I expect to see on the public registers?

The public registers can take many different forms, but are essentially a collection of related documents. They may be held either as data on a computer, or on paper as printed documents in a file, or as a collection of maps and diagrams.

Some information may be excluded from a particular register because the Environment Agency deems it to be commercially confidential, or because it could affect national security, or because it is the subject of a legal case. Where information has been excluded from a public register for reasons of commercial confidentiality, you will find a statement placed in the register in question indicating that this is the case. ...

The Integrated Pollution Control (IPC) Register
(This is a register maintained under Section 20 the Environmental Protection Act 1990 (Part I))

The information that is required to be placed on this register is detailed in The Environmental Protection (Application, Appeals and Registers) Regulations 1991.
- All the particulars of the application for authorisation or for the variation of the conditions of an existing authorisation;
- All the particulars of any published advertisements in relation to an application;
- Al the particulars of Schedule 1 notices requiring further details, issued by the Agency and any information provided in response from the operator;
- All the particulars of any representations made by any person required by statute to be consulted;
- All the particulars of any representations made by any person in response to a published advertisement except those representations requested not to be placed on the register;
- Where representations are omitted from the register at the request of the person who made the, a statement by the Agency that such representations have been made (without identifying the person);
- All the particulars of any authorisation granted by the Agency;
- All the particulars of any written notice of the transfer of an authorisation;
- All the particulars of the Agency's opinion on action to be taken following the issue of a variation notice;
- All the particulars of any revocation of an authorisation made by the Agency;
- All the particulars of any variation notice, enforcement notice or prohibition notice issued by the Agency;
- All the particulars of any notice issued by the Agency withdrawing an enforcement notice or a prohibition notice;
- All the particulars of any notice of appeal against a decision by the Agency, the documents relating to the appeal, any written notification of the Secretary of State's determination of such an appeal an any accompanying report;

- Details of any conviction of any person for an offence relating to an authorised or non-authorised process, including the name of the offender, the date of the conviction, the penalty imposed and the name of the court;
- All the particulars of any monitoring information obtained by the Agency as a result of its own monitoring, supplied to it as a condition of the authorisation or notice issued seeking further information;
- Where monitoring information is omitted from the register because it is commercially confidential, a statement by the Agency indicating whether or not there has been compliance with any relevant condition in the authorisation;
- All the particulars of any other information provided by the Agency (on or after 1 April 1996) in compliance with a condition of the authorisation, variation notice, enforcement notice, prohibition notice or notice seeking further information;
- Reports published by the Agency relating to an assessment of the environmental consequences of a prescribed process operating in the locality of the authorised premises;
- All the particulars of any direction (other than a direction relating to matters of national security) given to the Agency by the Secretary of State.

(Environment Agency: no date d, 3-16)

In addition to publicising the public registers through leaflets, the Environment Agency also made details of the public registers available on its web-site, something that was highlighted by nine of the questionnaire respondents and all four interviewees.[13] The Environment Agency's public register web pages give the same information about the public registers, as that listed above from leaflet *Public Registers of Environmental Information.*[14] However, in addition to general information about the public registers, the web pages also include an online search facility, which can be used by the public to obtain basic details from a number of registers, including that for Integrated Pollution Control. In using this search facility, visitors can select, from a drop down menu, which public register they would like to use and then enter their postcode and a specified distance measure,[15] to identify which companies have an IPC authorisation within a certain radius of their home. They can also carry out searches on the public registers using company names. In response to these searches, the web pages will then display details of the companies retrieved from the search, which includes their name, the address where the process is carried out and the authorisation reference number, all of which can be used by the public to help them locate the specific file and information that they want when visiting the public register.

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[13] The home address for the Environment Agency's web-site is http://www.environment-agency.gov.uk

[14] These public register web pages can be found at http://www.environment-agency.tv/ye/qa-ea-doc/register/index.html

[15] These distance measures are 1km, 3km, 5km and 10km.

While access to some basic details from the IPC register was currently possible via Agency's web-site, a number of interviewees felt that one way of improving access to the registers would be to make them available electronically. In fact the Thames interviewee stated that it would have been much better if the registers had been digitised from the start, but as no funds were specifically allocated to the public register this had not been possible. They did say, however, that more recently money was being allocated for information access policies and that this had resulted in a decision being taken by the Environment Agency to start digitising the IPC register. This was also highlighted in the interview conducted at the Midlands Lower Trent office, which had been designated as the test office for the introduction of an electronic document management system in 2002, and where the scanning of IPC documents for entry into this system was set to begin in August of that year. At the time of the interview, the full details of this digitisation process had not been fully decided, but the interviewee was sure that this would lead to a dramatic improvement in the registers, as it would significantly alter the ways in which it could be used and the ways in which information could be retrieved. However, due to the size of the register they were also unsure as to when this digitisation would be completed nationally, something that was also highlighted by the interviewee in the North West region who was unsure when digitisation would begin at their regional office.

Electronic access to the IPC register was therefore widely anticipated by Environment Agency staff, as it was hoped that it would lead to substantial benefits both for staff and users. However, in the mean time there were still a number of issues that could affect access to the paper-based register. The first of these was whether all the correct documents were held on the register. Documents were sent to the Environment Agency registers, from the officer responsible for an authorisation and so the register staff had no control of what information was received and were therefore reliant on that officer to ensure that they were sent the correct information. Over half of the questionnaire respondents were therefore unsure as to whether they had all the correct documents on their register.[16]

This point was also highlighted by the North West interviewee, who said that because of the large numbers of documents kept on the register, occasionally some items could not be found. However, they also stated that a number of procedures had been put into place by the Environment Agency, to help solve this problem. The first of these was that each document sent to the register was accompanied by a 'Public Register Transmission Sheet'. A copy of this can be found in Appendix 24. This public register transmission sheet was used to display

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[16] Only 42.9 per cent of respondents felt that they had all the correct documents on their register.

the details of the document(s) being sent to the public register including the company name, the permission (authorisation reference) number, whether it was for the IPC register or the Radioactive Substances register, a list of possible documents, the date and the number of pages. The transmission sheet could then be used by Agency staff to track what documents had been sent to the register and to make sure that they had received the correct number of pages. In addition to this, it also showed the date when the documents were sent to the public register and on receipt at the register, they were then stamped with the date by register staff. A note was then made of the number of days that had elapsed between the documents being received by the Agency and the date when they arrived at the public register. Most information was required to be placed on the register within twenty-eight days of receipt and so register staff used these figures to compile a monthly report, which was then used by the Agency to keep track of how long it was taking for information to be placed on the register and to assess whether they were meeting their targets.

Along with the public register transmission sheets, regular monitoring of the registers had also been introduced by the Agency to make sure that all the correct documents were on the register. As one questionnaire respondent stated, this monitoring was conducted on a number of different levels, firstly by the person responsible for the register, then by the pollution team responsible for the IPC processes in that region/area, and then using national audits, and all were designed to make sure that the correct documents were available on the register. This respondent also stated that if a document was found to be missing, then register staff would speak to the team responsible for the process and a copy was usually faxed through the same day, so it was very rare if someone came to the register that they would not be able to see the documents that they wanted.

A second access issue addressed by the questionnaires and interviews was the way in which users were supported whilst using the register. Only one questionnaire respondent reported making a user guide available to members of the public when visiting the register, but this did not mean that users were not supported in other Environment Agency offices. In fact this was the opposite, as almost all questionnaire respondents were keen to highlight the fact that there was always a member of staff available when someone was visiting the register. This meant that a visitor would always be shown round the register and someone would always be on hand to answer any questions and to help them interpret the information that they found. This was also stated by all four interviewees, one of whom said that having a member of staff available was the best way in which visitors could be assisted when they came to use the register. The Midlands Lower Trent interviewee stated that being available to support people when using the register was essential as it meant that they could encourage people to use the

register, as by educating them on their first visit they would be more likely to visit it again and would then need less help from Environment Agency staff. They also felt that this support of users, when they came to visit the register, helped to promote a positive image of the Environment Agency and meant that the public would be more inclined to help them in other environmental matters.

One final access issue examined in the Environment Agency questionnaire returns and interviews, was the issue of charging and what charges were made by the Agency for supplying information from the register. The fact that charges could prove to be a barrier to accessing information from public registers had been highlighted in Chapter 3,[17] which identified large variations in the price charged for obtaining information from public registers. This was often due to the use of the term 'reasonable charges' in legislation relating to the registers which meant that a great deal of disparity in charges could arise. This was not however, the case in relation to the different Environment Agency offices as charging levels, as with other access issues, had been addressed at a national level and were set out in a leaflet entitled *Charging for Information*. This detailed that register users would only be charged for information if that charge exceeded £50.00. Photocopies from the public register were charged at 10p per A4 sheet, so a visitor would be able to photocopy 500 A4 sheets before they had to pay, and staff time was charged at £25.00 per half hour for dealing with information requests that took more than half an hour. In most cases respondents replied that it was unusual for visitors to be charged for reasonable requests for information. However, to monitor requests for information, most offices did maintain an access database on which they logged each enquiry, visit and request for information from the register. On this database they would log the person's name and address, what information they wanted and what information they were supplied. As the interviewee in the North West highlighted this could then be used to see what information was being used from the register and also to see if any charges needed to be made. A copy of a public register enquiry/request for information form can be seen in Appendix 25.

From this discussion, examining the access issues that have arisen in relation to the IPC registers, it can be seen that many of these were addressed by the Agency at a national level and were therefore dealt with in the same way by all the Agency's offices with an IPC register. As a result of this, the Environment Agency registers are all available at the same time, are promoted in the same way and have implemented the same support procedures to

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[17] Section 3.4.2.

ensure that access to the IPC register has been made as easy as possible and as consistent as possible across the country.

7.5.3 Commitment to management and users

The third group of issues highlighted in the local authority factor analysis as being responsible for the variance in the IPC registers were those concerning a commitment to management and users. The Environment Agency questionnaire, case study visits and interviews had addressed both of these issues by examining how the registers were being used and by looking at a number of issues that were associated with the management of the register.

One of the largest complaints that local authorities had about the IPC registers was that no one ever used them and it was shown that over half the local authority registers were receiving no visits or enquiries in an average month. This was not the case, however, with the Environment Agency copies of the registers, where all offices reported receiving regular enquiries and visits to the register every month. This is illustrated in Table 7.3 which shows the mean, median and dispersion values for the three 'usage' variables from the questionnaire returns.

Table 7.3   Frequency data for the numbers of enquiries and visits received by Environment Agency registers from the questionnaire responses

			Dispersion	
	Mean	Median	Minimum	Maximum
Number of Enquiries	13.64	8.5	2	80
Number of Visitors	4.14	4.5	1	8
Total Number of Enquiries and Visits	17.79	13.0	3	81

From this table, one can see that Environment Agency offices were receiving between one and eight visitors per month. However, most respondents did comment that their enquiry and visitors numbers did tend to vary across the year. This was borne out in a number of interviews, for example the Southern regional office interviewee said that the use of the register tended to go in fits and starts, where no one might visit it for two or three weeks and then they might have two or three visitors in the same day. The interviewees at the North West regional office and Midlands Lower Trent office also highlighted how different outside factors could affect the use of the registers. For example, the North West interviewee

highlighted how the introduction of the new IPPC regime[18] had led to an upsurge in the numbers of people coming to visit the public register, as they began to look both at the documents on the new IPPC register and on the IPC register, while the Midlands Lower Trent interviewee cited the existence of a number of particularly controversial sites in their area, as having been responsible for an increased number of visitors to the IPC register, which stood at thirty five for the first three months of 2002.

In addition to receiving increased numbers of visitors, the North West regional office interviewee also highlighted the variety of visitors that they were receiving. These included the public, students, environmental pressure groups and consultants. This variety of people using the Environment Agency's copies of the register was also borne out by the questionnaire results, as can be seen in Figure 7.4.

Figure 7.4   Environment Agency Register Users
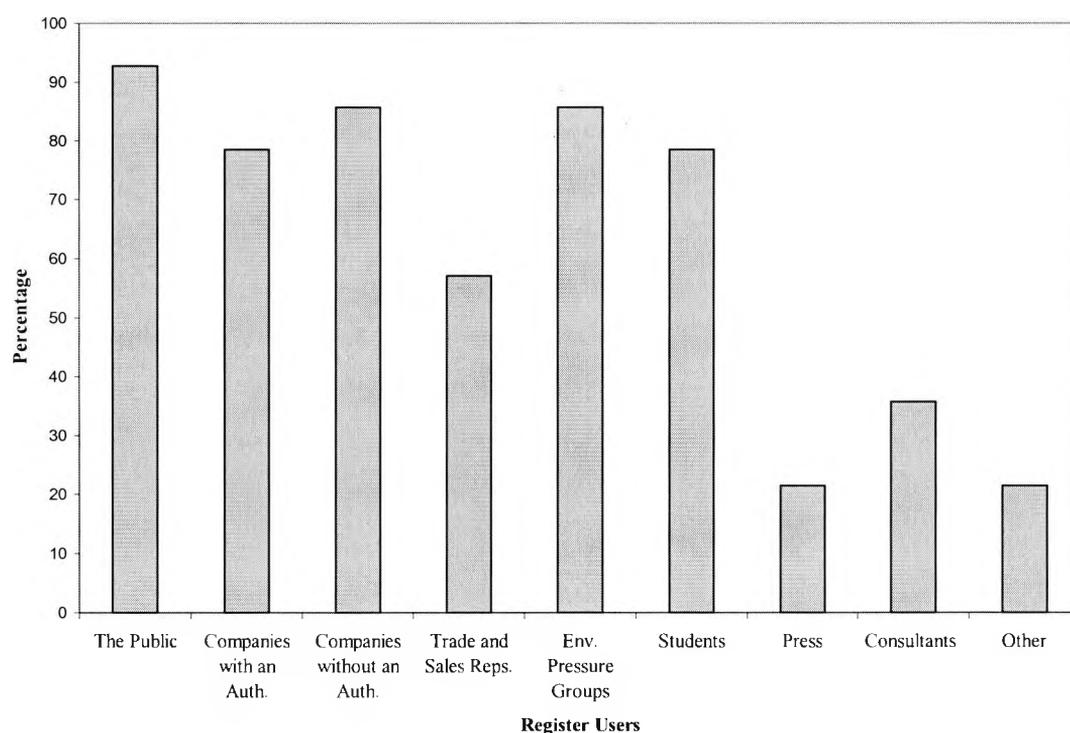
The largest group of visitors to the Environment Agency IPC registers were members of the public, something that was also highlighted by the interviewees although in some cases they

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[18] The new IPPC (Integrated Pollution Prevention and Control) scheme is currently being implemented in the UK following its adoption by the European Union and will eventually take over from the IPC regime in 2007. The IPPC register is currently being run on the same lines as the IPC register but will be much bigger due to the extra reporting requirements that companies have to fulfil.

did say that visits by the public were quite rare. In other offices, such as the Midlands Lower Trent office, staff actively tried to encourage members of the public to come in and use the register, rather than to ask for information over the phone. It was felt by the interviewee at this office, that time spent educating visitors to use the register was particularly beneficial, especially in the long run as it meant that in the future these people would need less assistance and so was saving the Environment Agency both time and money. Students were also highlighted by most interviewees as being regular users of the register, particularly those studying Environmental Science who often had to use the IPC register to carry out the course work that formed part of their degrees. However, as was highlighted by the Southern region interviewee, students were often unaware of how much information was kept on the register and Agency staff therefore tried to encourage them to come in and use it rather than sending them the information that they wanted. This interviewee also stated that most students came to use the register in September, just before they returned to university and so this tended to be their busiest month of the year in terms of both visitors and enquiries.

One of the key issues highlighted so far in this section has been the willingness of Agency staff to support visitors to the register and spend time educating them on how to use it, so that in the future they would need less assistance and would be able to come in and use it on their own. To achieve this aim, it was therefore essential that the register was organised in a standard way, so that visitors once instructed on using the register could easily use it again or access other copies of the register held at different Environment Agency offices. In light of this, steps had been taken by the Environment Agency to make sure that all their registers were arranged in the same way.

This was borne out by the case study visits, where all the documents for the IPC registers were kept in red wallet folders. These red folders were used to distinguish the IPC register from other public registers, for example, the Radioactive Substances register was always kept in cream folders and this helped to prevent the folders from getting mixed up, as often the same companies would have entries on a number of different registers. These folders were then kept either in metal shelving units, with slots for the individual folders, or in hanging files.[19] On the outside of each folder was a white label that showed the name of the company, the authorisation reference number and where applicable, the variation reference number. In addition to this, on the outside of each file, three stickers were placed indicating the first three

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[19] Although from the questionnaire responses some offices did store their files in filing cabinets.

letters of the company's name.[20]   This enabled different company folders to be easily identified when on the shelf.   Thus a folder containing the IPC documents for Didcot power station in Oxfordshire, would be labelled as indicated in Figure 7.5, with the company name Innogy Plc, the authorisation reference number AA3107, the variation number if appropriate, in this case BH 1263 and the three stickers indicating the first three initials of the company's name.

Figure 7.5   Labelling of Environment Agency IPC Files

I

N

N

Innogy Plc

Authorisation Reference No: AA3107

Variation No: BH1263
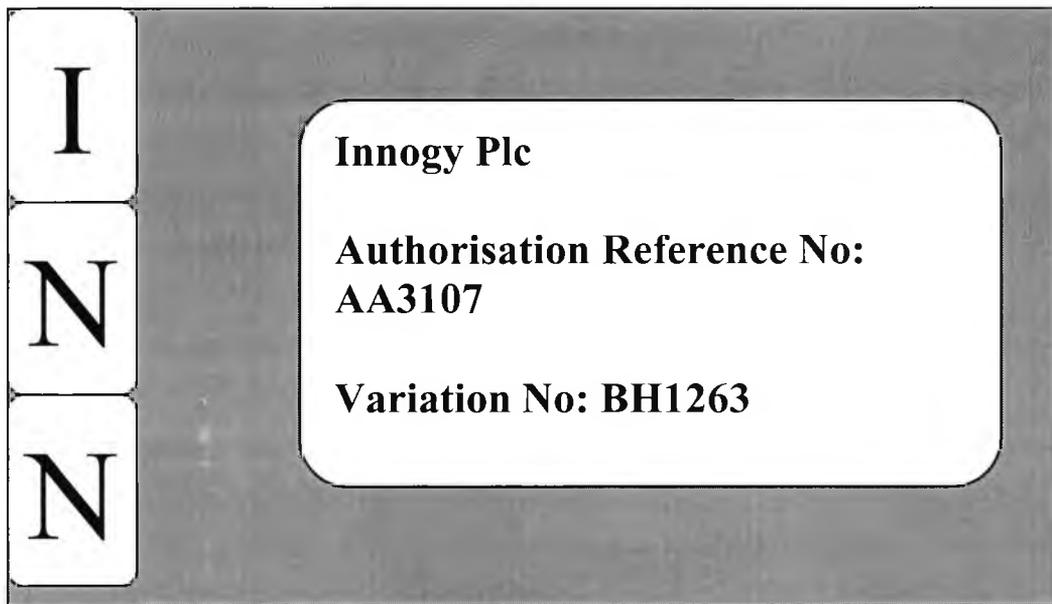
The IPC registers were then organised alphabetically by company name, with different folders for different authorisation reference numbers.   The documents within each folder were then placed in chronological order of the date in which they arrived at the register.   At the front of each folder was a 'Public Register Log Sheet', a copy of which can be found in Appendix 26. This log sheet contained general information about the file including the name of the operator, the operator's address, the local authority where the premises were based, the Environment Agency area, the file number and then a space for specific details about the documents on the file.   These document details included: firstly, the document's file number, as each document when entered on the file was given a number to identify it; secondly, details of the type of document, for example, authorisation or monitoring data; thirdly, the date it was received by the Agency; fourthly, the number of pages and finally, the date on which it was entered on the

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[20] On the visit to the Thames register a further coloured sticker indicated the process type, however, this was not seen at any other register and as the Thames register have since been moved the author was unsure if this was still the case.

register. Each document was then labelled with the same number as on the log sheet, which enabled staff to keep the documents in the right order within the folder and meant that documents could be identified if they did go missing.

The interviewee at the North West regional office stated that the public register log sheets were particularly important for the management of the registers, as they helped Agency staff to keep track of documents on the register. They also helped to form an index for the register, as did the IPCIS index lists which were also seen by many questionnaire respondents as invaluable. The IPCIS index lists contained the following information for each IPC authorisation and variation issued by the Agency:

- Environment Agency region;
- Environment Agency area;
- Local authority name;
- Original permission number (authorisation reference number);
- Permission number (new variation reference number);
- Application tariff type (type of application: authorisation, minor variation etc.);
- Number of chargeable components;
- Process schedule reference (PSR) number (which relates to the type of process);
- Operator name;
- Operator address;
- Current status (valid, revoked);
- Date of application;
- Date the application was approved;
- Date when the authorisation/variation came into force;
- Date when the authorisation/variation was withdrawn, revoked or replaced by another variation.

This information could then be manipulated in a number of ways and was used by a number of questionnaire respondents to develop hardcopy indexes for their register. One questionnaire respondent for example, said that by manipulating the IPCIS index lists they had two indexes for their register, the first organised by operator name, the second, by authorisation reference number. In addition to this, they were also able to print out a list that cross-referenced site names with the correct name of the company, for example, Didcot power station with Innogy Plc, so that users could quickly find the information that they wanted and where it was located on the register.

This was also backed up by the interviewee from the North West region who said that their office had used the IPCIS index lists to print out a number of indexes for their register. These indexes were organised in a number ways including by operator name and process schedule reference number.[21] A copy of the first pages of these two index lists can be found in Appendix 27. The IPCIS index lists had also been used to help users in finding different information on the register, as by running various reports they could give people a general overview of the information on the register. In the past they had run reports that listed, for example, all the incineration processes in the North West or all the companies that had an IPC conviction. These could then be used by users to identify particular companies or authorisations that they wanted to look at on the register. These reports were now kept in the register room, along with other information that could be of use to users such as a list of all the Environment Agency public registers, a list of local authorities with an IPC process in the North West, a copy of the different life cycle stages of a process which were used in the IPCIS index lists,[22] and a list of company name changes, so that people visiting the register could track company information even if they did not know its new name.[23]

In addition to helping users through the running of various reports using the IPCIS index lists, all of the registers visited also made additional information available for users. In most cases this included a copy of the Environmental Protection Act and related documentation and usually different Environment Agency leaflets and publications. This was also borne out by the questionnaire results, which showed that most offices made some additional information available to the public as can be seen in Figure 7.6.

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[21] A process schedule reference number is the number given to each type of process.

[22] A copy of this can be found in Appendix 28.

[23] A copy of this can be found in Appendix 29.

Figure 7.6   Other information made available by Environment Agency offices
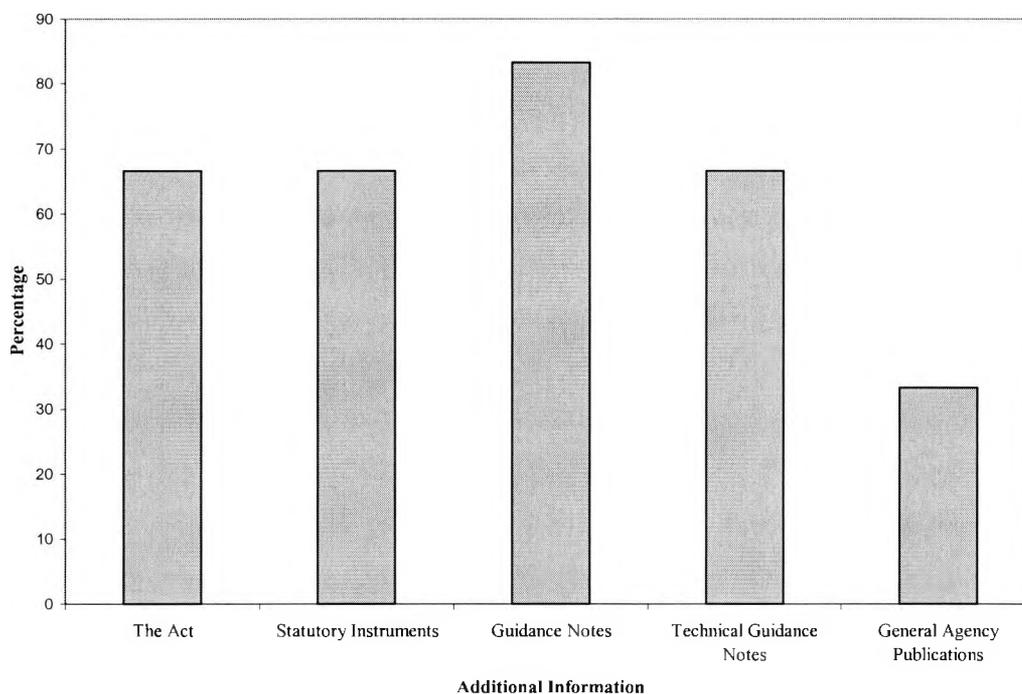
To promote the standardisation of the public registers and to encourage the development of tools like indexes that could be used both in their management and use, the Environment Agency had produced a QM document relating to the public registers. A copy of this document can be found in Appendix 30. This document was highlighted by a number of questionnaire respondents, as having been an important step forward in the management of the registers, as it meant that procedures were now in place nation-wide for their management. This document entitled *Procedure for Managing the Public Registers* addressed three main areas. These were:

- The management of existing registers;
- Instigating new public registers;
- Removing information/data from public registers.

It then set out the standard procedures that were to be followed by Agency staff in relation to each of these three areas. For example, in relation to the management of the existing registers, procedures were listed for six key areas including the receipt of prescribed information, the screening of information, the creation of new register entries, making information available to the public, the supervision of the register and auditing the register. These procedures, for example, in relation to the screening of the information included:

- Confirm the category of prescribed information against summary details. Note applicable time limit for placing information on the register and target date for making information available on the register.
- Check that information is complete. For hard copy registers this will involve making sure that there are no missing pages and that photocopies are legible.
- If, following the check, there is a query, the sender of the original information should be contacted and requested to resolve any discrepancies. (Environment Agency: 2000c: 2)

In addition to listing the procedures for each area, references were also given to relevant documentation and details of the relevant performance measures were set out.

The publication of this management document, by the Environment Agency, had resulted in the same procedures being followed by all the offices with a register and this was seen as being particularly important by the interviewee from the Midlands Lower Trent office for ensuring standardisation. However, they were still concerned that this document failed to address many of the 'nitty gritty' problems that emerged in relation to the registers and this had led them to develop their own additional set of procedures for managing the register, a copy of which can be found in Appendix 28.

This document dealt with many of the day-to-day problems that emerged in relation to the registers and set out procedures for addressing these problems so that the register continued to be maintained in a uniform way.

One of the problems highlighted by the interviewee from the Midlands Lower Trent Office was to do with company name changes. They stated that when they took over the management of the registers nothing had been done to deal with company name changes, which meant that files relating to the same company could be found under a number of different names in a number of places on the register. This was seen as being particularly problematic as it made it difficult both for staff in filing information and for users in finding the right information. In light of this, the interviewee had reorganised the register, so that the old files were relabelled with the new company name so that they were all located in the same place.

A further issue that had been addressed by the Midlands Lower Trent interviewee and by the North West interviewee had been the way in which documents were numbered within files.

Originally the numbers in each file had begun at one, but when there was more than one file for the same authorisation reference number, this meant that a number of documents, for the same authorisation, would have the same number. To address this problem, the Midlands Lower Trent office had decided to label all the documents consecutively, so that documents in file one were labelled from 1 – 20 and documents in file two from 21 – 40 etc. This meant that if one document came out of the file they could easily find out where it needed to go. In the North West this problem had been resolved slightly differently, so that documents were labelled with the file number and their document number, so that documents in file one would be labelled I 1-20 and in file two as II 1-20. Both of these systems meant that the location of individual documents could be easily located or if documents were missing from the register could be easily identified and replaced. In addition to this, Midlands Lower Trent also had a policy of writing as much information on the public register log sheet as possible, so that documents if they did get lost could be easily identified. In the past, documents had simply been labelled monitoring data, but this had meant that if they then got lost, then it was particularly difficult to identify which piece of monitoring data it was and so the more information that was placed on the log sheets, the easier it was to identify the document in the future.

One final problem, that both interviewees had had to deal with, was the opening of new files. At the Midlands Lower Trent Office, the interviewee stated that it was particularly important to control the opening of new files, as this was when substantial problems could occur in the register. They highlighted a number of cases in the past, where new files had been opened as a result of people not being able to find the right authorisation reference number on the register, and where later checks had revealed that these files were made up using a non-existent reference which could not be traced. This mean that there were now single documents on the register whose correct file could not be located. The interviewee said that these problems were often due to typing errors or new variation reference numbers and could be easily checked out using the IPCIS index lists or by contacting the relevant officer, but that they needed to be resolved before the document was placed on the register.

The North West Regional Office had also had a problem with new files, as in the past, any change in reference number, such as through a minor variation, had resulted in a new file being opened. This meant that filing became particularly difficult as staff tried to locate the right file and also meant that the register took up a lot of room as a large number of files contained single documents. In light of this, the North West interviewee had rearranged the files on the register so that they were now maintained using their original authorisation references number, with the appropriate minor variation numbers listed on the label. A new

file was only opened when a major variation occurred, as this was the same as applying for a new authorisation. The file for the major variation would then be labelled using the company name and the new major variation reference number, with the original authorisation reference number in brackets.

In many cases these issues highlighted could be seen as superficial but both interviewees saw the development of set procedures for managing the register and dealing with these problems, as being crucial for the smooth running of the register and for enabling them to be easily used. Both interviewees saw the development of the QM document by the Environment Agency has having helped to introduce a standard level of maintenance and organisation for the public registers, but they said that they had had to develop their own sets of procedures for dealing with some of the more day-to-day problems that occurred. The identification of these procedures meant that a number of people were able to maintain the register and that it was always organised in the same way which in turn, meant that it was then both easier for members of staff to maintain and easier for visitors to use.

From this discussion, the Environment Agency can be seen to have dealt with many of the management issues identified in relation to the IPC registers by putting in place a series of standard procedures. Nationally these procedures were aimed at standardising the format of the registers, while locally, they were designed to address the day-to-day management and maintenance issues of the register. Both of these sets of procedures have therefore played an important role in creating a standardised register that is easy for visitors to use and easy for staff to maintain.

7.5.4 Costs

The final group of issues highlighted from the local authority data analysis which were also of relevance to the Environment Agency registers, were those to do with costs. In particular these were concerned with the financial and time costs associated with the register.

Each questionnaire respondent was asked whether the IPC register had resulted in significant additional financial costs, time costs maintaining the register and time costs dealing with enquiries for their office, and as can be seen from Figure 7.7, the majority of respondents believed that it had. As with the local authority responses to these questions, Agency offices who thought that the register had brought about significant costs in one area, were also more likely to think that these had occurred in other areas. This can be seen, for example, in Table 7.4 which cross-tabulates time costs maintaining the register with monetary costs and shows

that all the offices that thought the register had resulted in significant financial costs, also thought that they spent significant amounts of staff time maintaining the register.

Figure 7.7   Environment Agency costs
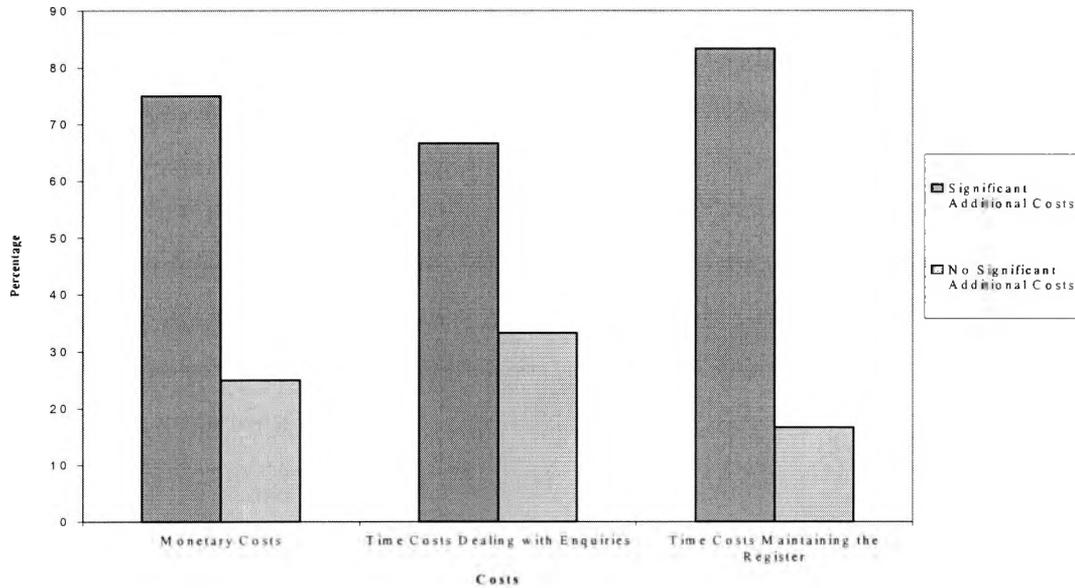
These issues of costs could be seen to be linked to the size of register held by an office. For example, all the respondents with an above average number of authorisations and variations within their region/area and therefore a larger register, felt that the register had resulted in significant financial costs compared to 50.0 per cent of those with a below average number. Similarly all the offices with an above average number of authorisations and variations felt that they spent significant amounts of staff time maintaining the register, compared with two thirds of those with a below average amount. This cost of maintaining the register was also highlighted by the interview conducted at the North West regional office which had one of the largest registers in the country and where the interviewee said that maintaining the register was particularly time consuming, particularly at certain times of the year when they received lots of information, as in March when every company with an IPC authorisation had to file their annual monitoring returns.

Table 7.4   Time Costs Maintaining the Register/Monetary Cost Cross-Tabulation (% within Monetary Cost)

Time Costs Maintaining the Register	Monetary Cost		Total
	No Significant Cost	Significant Additional Cost	
Significant Staff Time to Maintain the Register	33.3%	100.0%	83.3%
No Significant Staff Time to Maintain the Register	66.7%	0.0%	16.7%
Total	100.0%	100.0%	100.0%

In addition to this, a link could also be identified between the numbers of enquiries received by an Environment Agency office and whether the respondent thought that they spent significant staff time dealing with enquiries. This is illustrated in Table 7.5 which shows that 80.0 per cent of those respondents with an above average number of visitors saying that they spent significant amounts of time dealing with enquiries, compared with 57.1 per cent of those offices who received a below average number of enquiries.[24]

Table 7.5   Time Costs Dealing With Enquiries/ Average Number of Total Enquiries and Visitors Cross-Tabulation (% within / Average Number of Total Enquiries and Visitors)

Time Costs Dealing with Enquiries	Average Number of Total Enquiries and Visitors		Total
	Below Average	Above Average	
Significant Staff Time to Deal with Enquiries	57.1%	80.0%	66.7%
No Significant Staff Time to Deal with Enquiries	42.9%	20.0%	33.3%
Total	100.0%	100.0%	100.0%

From this section most Environment Agency offices can be seen to have thought that the register had resulted in significant costs for them both in terms of money and time. However, most interviewees felt that many of these additional costs were worthwhile because the registers were surprisingly well used and they were therefore happy to spend time maintaining the register and particularly in supporting users when they came to use the register.

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[24] The average number of enquiries and visitors was 17.79.

The analysis conducted in this chapter of the Environment Agency questionnaire responses, case study visits and interviews, has examined many of the issues that were highlighted in the previous chapter as affecting the development of the registers. However, in contrast to the local authority registers, where considerable diversity was found, the analysis of the Environment Agency registers has instead highlighted the uniformity of their registers. The Environment Agency in an attempt to make the registers both easier to use and easier to maintain, introduced a number of procedures which have helped to ensure the standardisation of the registers around the country. This has meant that many of the problems highlighted in relation to the local authority registers have been avoided by the Environment Agency, despite the fact that these can be up to six times larger than the average local authority register.

Part 3:

Synthesis and conclusions.

Chapter 8.   Discussion and Interpretation

8.1   Introduction

This chapter examines both the local authority and Environment Agency case study research findings, in light of the 'information access model' that was set out in Section 4.8. The first section summarises the main theories underpinning the 'information access model'. It examines the reasons for its development and sets out its purported value both as an investigative and evaluative tool. The second section then carries out an examination of the local authority and Environment Agency case study findings using the 'information access model', firstly, to investigate and secondly, to evaluate the implementation of the IPC registers. The IPC registers are evaluated against a number of distinct criteria including the approach to the policy problem, the setting of policy goals, the planning process implemented, the development of management tools and procedures and the use of control to implement the policy. Having carried out this evaluation of the IPC registers, the final section then investigates the validity of the 'information access model' for information policy research, by examining both its prescriptive value and its effectiveness as an evaluative research device.

8.2   Contextualising the 'Information Access Model'

The 'information access model', which was set out in Section 4.8, combines ideas from the fields of public policy and information resources management to examine information access policies. In particular, this model draws on two established research frameworks, the policy process model and the information life cycle, to create a new hybrid framework that can be used in information policy research. The policy process model is used to impose a rational structure on information access policies. This rational structure divides the policy process into five distinct stages,[1] so that the impact of specific issues and actors on each stage can be examined. The employment of the policy process framework therefore helps to reduce the complexity of information access policies, as the researcher can limit the scope of their study by focusing on the activities that occur within each stage.

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[1] These were problem identification, policy formulation, policy adoption, policy implementation and policy evaluation.

The second layer of the 'information access model' links the policy process framework to the information life cycle, which has been developed, within the field of information resources management, for use as a management tool. The information life cycle, as with the policy process model, is also divided into a number of stages[2] and these stages are then used to highlight the different information management tasks that need to be addressed to create a successful information access policy. In addition to this, the information life cycle also enables wider management issues to be addressed in a consistent way throughout the life cycle and the policy.

The 'information access model' was developed as a result of the failure of the literature review to highlight any established frameworks, that could be used to examine the relationship between information access policies and information resources management. This combination of the policy process model and the information life cycle was therefore designed to create a novel framework that could be used to examine this specific area of information policy. The fusion of these two frameworks has a certain intuitive appeal, firstly, because both of these frameworks have previously been used in information policy analysis, and secondly, because by combining them together, a number of the issues highlighted in Section 4.3.4 as affecting the success of information access policies, can be examined. However, as Parsons points out, intuitive appeal is only one part of successful theory evaluation and models also need to be examined in light of the available empirical evidence to see if they are consistent, to see if they make sense, to see if they are convincing and to see if they add to our understanding of a particular issue. (Parsons: 1995) The later sections of this chapter will therefore evaluate the 'information access model', in light of the empirical evidence gathered from the local authority and Environment Agency case studies. However, before carrying out this evaluation it is first necessary to examine the main functions of the 'information access model'.

The 'information access model' has two primary functions. The first of these is to act as an investigative tool through which the relationship between information access policies and various information management issues can be explored, while the second is to act as an evaluative device against which the success of information access policies can be measured. The utility of the 'information access model' as an evaluative tool, lies it its ability to

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[2] These are the collection of information, the organisation of information, the storage of information, the retrieval and use of information, the dissemination of information and the retention and disposal of information.

prescribe what steps should be taken to develop a successful information access policy, rather than simply to describe how established policies have evolved.

The use of prescriptive frameworks to evaluate policy is well established within the public policy field, where they are usually linked to a rational interpretation of policy-making. This was highlighted by Rowlands & Turner who, in their review of frameworks for information policy research, summarised the rational interpretation of policy-making as being prescriptive, being driven by planning and the achievement of well-defined goals and being of particular use for the evaluation of public policy. (Rowlands & Turner: 1997) These criteria can be seen to define the 'information access model', as it sets out a prescriptive formula for how information access policies should be developed and sees policy implementation as being essentially a planning activity, which supports the achievement of policy goals. The 'information access model' can therefore be seen as being rational in its approach to policy-making.

In addition to this, the 'information access model' can also be seen as employing a top-down approach to policy implementation. This approach was highlighted in Section 4.4.6 and is closely linked to the rational interpretation of policy-making. The top-down approach, like the rational interpretation, sees policy implementation as being essentially a planning activity, and argues that policy makers can ensure successful policy implementation, by carrying out detailed planning that makes sure that the correct tasks are carried out at the right time, and that adequate resources are made available. Successful policy implementation is therefore about designating what goals need to be achieved, setting out the tasks that need to be carried out to accomplish these goals, and controlling these tasks to make sure that they are completed in the right way and at the right time. The 'information access model' can therefore be seen to be both rational and top-down in its approach to policy-making, as it aims to achieve a number of well-defined policy goals through the strict planning of tasks and by controlling the implementation of these tasks to make sure that they are carried out in the right order and at the right time.

The employment, in the 'information access model', of a rational and top-down approach to policy-making makes it a particularly useful tool for evaluating information access policies, as it sets out one 'extreme' of policy-making where every decision and action is taken rationally in support of the policy goals. In setting out this rational approach to achieving a successful information access policy, the 'information access model' provides a yardstick against which the success of other information access policies can be measured. To carry out the evaluation of information access policies, the model needs to be placed at the heart of the

research methodology and employed in the design of the evaluation instruments that are used in the research. This will then result in the collection of data that can be used to highlight any differences between the model and the 'real-life' information access policy.

The 'information access model' has been designed to examine the relationship between information access and information resources management and is employed in this research to evaluate the impact of these issues on an information access policy. The model can essentially be seen as a planning tool that draws heavily on the rational or top-down interpretation of policy implementation that was outlined in Section 4.4.6, and is used in this research to evaluate the IPC registers held by local authorities and the Environment Agency. To carry out this evaluation of the IPC registers, the 'information access model' was central to the methodology used in this research.[3] In particular, the 'information access model', was used as a framework for the development of the research tools employed in this study, as this meant that the data collected from the questionnaires, case study visits, and interviews, could later be used to evaluate the success of the IPC registers as an information access policy.

8.3   The Model in Action

The 'information access model' employs a top-down approach to policy implementation, which centres on the use of rational decision-making, planning and control, as a way of achieving policy goals. This interpretation of policy implementation is now employed to organise and evaluate the local authority and Environment Agency case study findings, so that the success of the IPC registers can be assessed.

In an attempt to gain a greater understanding of the development of the IPC registers, the 'information access model' was applied to both the Environment Agency and the local authority case study findings, and in doing this, two different interpretations of the IPC registers began to emerge. To summarise these two interpretations, the Environment Agency copies of the IPC registers could be seen as having been implemented using the top-down method of policy implementation highlighted in the 'information access model', while the local authority registers, broadly speaking, had been implemented using a bottom-up approach, which in many ways could be seen as the antithesis of the top-down approach employed in the model.[4] These two different approaches will now be examined in greater

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[3] This was examined in Chapter 5.

[4] The bottom-up interpretation of policy implementation was discussed in detail in Section 4.4.6.

detail, focusing first on the Environment Agency case study findings, which closely mirrored the rational, top-down approach set out in the 'information access model'.

8.3.1 Environment Agency case study findings

The Environment Agency case study findings suggested the employment of a policy-based approach to the development of the IPC registers. This was highlighted in the interview conducted at the Thames Region, where the interviewee stated that whilst the Environment Agency had not taken the decision to introduce the IPC registers,[5] it had been responsible for the policy setting up their copies of the register. This had meant that the Environment Agency had had to address a range of policy issues that arose in relation to the IPC registers, such as those of policy formulation. One of the policy formulation decisions taken by the Environment Agency was how to set up the IPC registers. The Thames interviewee highlighted how the Environment Agency had developed a number of alternative solutions to this policy problem, including that the register should be made available electronically, but as no funds were allocated to the IPC registers, it was decided that the cheaper paper-based option should be implemented instead. Having decided upon this option, the policy goal then set by the Environment Agency was to create a paper-based register that was consistent, efficient, and effective. These policy goals were highlighted by the Thames interviewee[6] who also pointed out that the national planning carried out by the Environment Agency focused on the achievement of these goals. The Environment Agency in setting clear policy goals for the IPC registers, which were then linked to the planning process, could be seen to have carried out two of the key ideas for policy success that were highlighted in the rational 'information access model'.

The efforts made by the Environment Agency to link the policy goals of creating a consistent, efficient and effective register to the planning process, meant that information management was highlighted as a key area for planning, as it had already been identified as being essential to the achievement of the policy goals.[7] As a result of this, the development of good information management practices lay at the heart of the planning process, as was indicated by the questionnaire returns, case study visits, and interviews. The questionnaire respondents

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[5] This impetus came from the Department of the Environment.

[6] This objective is also highlighted in the Environment Agency policy document *Procedure for Managing the Public Registers*.

[7] This was highlighted by the Thames interviewee.

were asked about the areas covered by the Environment Agency in their national planning[8] and this revealed that the Agency had a firm grip on most of the information management issues raised by the 'information access model'. All the respondents, for example, stated that planning had been carried out into the collection of information, the organisation of material and the retrieval and removal of documents, whilst three quarters indicated that planning had also been conducted into the storage of the registers. The Agency's grasp of information management issues was also highlighted by the interviewees, who indicated that national planning had been carried out into various management issues raised by the registers, and that this had led to the development of a number of set procedures for their maintenance.[9] The connection, by the Environment Agency, of the planning process with the policy goals, had therefore meant that information management issues were highlighted as being particularly important for the successful implementation of the IPC registers. As a result of this, the planning process carried out by the Environment Agency could be seen to address many of the issues highlighted in the 'information access model', such as the collection of information and the retrieval of documents. Here too then, the Environment Agency's implementation of the IPC registers could be seen to strongly mirror that proposed for the successful implementation of information access policies, in the 'information access model'.

The effect that planning activities had on the achievement of policy goals could be seen in relation to the IPC registers, as the decisions taken by the Environment Agency in the planning process had a significant impact on the way in which they were set up and run. This was because the planning process resulted in the development of a number of procedures for the creation and maintenance of the register. These procedures were designed with a number of different aims. Some, such as the QM document *Procedure for Managing the Public Registers,*[10] were designed to promote the consistent and effective management of all Environment Agency public registers and were therefore used to set out broad guidelines for

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[8] This followed on from another question that asked if any planning had been carried out nationally by the Environment Agency. Only a small number of respondents, around a third, had answered yes to these questions with the vast majority of respondents, 64.3 per cent answering 'Don't Know'. This appeared to be due to the short periods of time that many respondents had been employed by the Environment Agency which meant that they did not know what planning had been carried out when the registers had been introduced. The high turnover of staff that dealt with the registers was also highlighted in the interview conducted at the North West Regional office where the interviewee stated that it was particularly difficult to keep up with who was responsible for the registers in other Environment Agency offices as people were constantly moving.

[9] This was particularly highlighted by the Midlands Lower Trent interviewee.

[10] A copy of this document can be found in Appendix 30.

their creation, management and disposal, while others, were practical management tools that were put in place to help Agency staff with the day-to-day management of the registers. For example, the public register transmission sheets for the distribution of documents, were designed to help Agency staff keep track of what documents had been sent to the register, and to ensure that they received both the correct number of documents and the correct number of pages within each document.[11] Similarly, the public register log sheets were also designed to help Agency staff, as these enabled documents to be kept in the right order within the individual register files. In addition to this, they could also be used to identify documents that had gone missing from the register. The introduction of these procedures was particularly important for the development of the IPC registers, as these were used by the Environment Agency to promote the achievement of policy goals. All the procedures were linked to policy goals and so by ensuring that each office adopted these procedures, the Environment Agency could increase the possibility of achieving these goals. The use of control could therefore be highlighted as another example of where the implementation of the IPC registers by the Environment Agency, shared a number of similarities with the top-down interpretation of implementation employed in the 'information access model'.

This idea that controlled implementation of planned procedures could lead to a successful policy outcome was also supported by the case study visits, which showed that the implementation, in the Environment Agency's different offices, of a number of set procedures, had led to the development of IPC registers which fulfilled the policy's three main goals. The consistency of the IPC registers, for example, was highlighted in the case study visits where all the IPC registers were stored in the same red wallet folders and all the files were organised in the same way, firstly by company name, and then by authorisation reference number. Similarly, the case study visits also highlighted how the employment of different management procedures, such as the public register transmission sheets, had helped to create a register that was efficient to run, and where if problems did occur, such as a document being received with a non-existent authorisation reference number, this could easily be addressed using other management tools, such as the IPCIS index lists. Finally, the case study visits also highlighted how the procedures had led to the development of an effective register, which visitors, once they had been introduced to it, could easily use to obtain the information that they required.

In examining the Environment Agency's copies of the IPC registers, the 'information access model' could therefore be seen as a useful tool, as it enabled a number of important insights

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[11] A copy of this document can be found in Appendix 24.

into the implementation of this information access policy to be gained. In particular, the 'information access model' was able to establish that the Environment Agency had successfully achieved its policy goals and was able to identify three reasons for this success. These were:

- The planning carried out by the Environment Agency into the registers;
- The procedures put in place by the Environment Agency for the implementation of the registers;
- The control that the Environment Agency had over its offices and the ways in which they implemented the IPC registers.

Planning was highlighted as one of the main reasons for the success of the Environment Agency's IPC registers, as this helped to achieve the policy goals. It was soon realised by the Environment Agency that if the IPC registers were to achieve their goals of being consistent, efficient and effective, then information management would be central to this success. The planning process was therefore used to address a number of information management issues that could prevent the registers from fulfilling these goals. The second reason identified for the success of the IPC registers, was the numerous procedures that were put into place by the Environment Agency. In most cases, these procedures addressed the information management issues that had been raised in the planning process and so were designed to achieve the goals of the policy. These procedures were implemented across the Environment Agency, which meant that the information management issues raised in the planning phase, were addressed in the same way by all the Environment Agency's offices. The final reason for the success of the IPC registers was that the Environment Agency was able to control the implementation of these procedures, so that they were consistently introduced in every office, which led to the creation of a standardised register across the country.

The use of planning, procedures and control, were identified as being central to the successful implementation of information access policies in the 'information access model', and this appeared to be reflected in the Environment Agency's case study findings, where addressing these three areas in relation to the IPC registers can be seen as particular policy strengths. This is not to say however, that the Environment Agency's implementation of the IPC registers was not without its faults. While the Environment Agency can be seen to have paid particular attention to the management issues arising from the registers, issues of information use and dissemination, also highlighted as key areas for consideration in the

'information access model', were not given such attention. Similarly, some of the more general procedures introduced by the Environment Agency were criticised for failing to address the 'nitty gritty' problems that emerged in the day-to-day running of the registers, which meant that each office had to develop their own procedures to deal with these issues and this led to differences in the registers.[12] Despite these problems however, the use of the rational, top-down techniques set out in the 'information access model', did appear to have resulted in the successful implementation of IPC registers by the Environment Agency, particularly when compared to the local authority case study findings.

8.3.2 Local authority case study findings

In contrast to the Environment Agency findings, the local authority case study results, on the whole, suggested a far more disordered approach to the implementation of the IPC registers and could therefore be seen to share similarities with the bottom-up approach of policy implementation, that was highlighted in Section 4.4.6. The bottom-up approach sees policy-making as being essentially a pragmatic problem solving exercise and as a result of this, policy implementation is issue-led, with decisions being taken in response to problems, rather than as the result of rational planning. The bottom-up approach to policy implementation is therefore, in many ways, the antithesis of the rational 'information access model', where the use of strategic planning to develop detailed information management procedures, was seen as the key to implementation success.

When examining the local authority case study findings, in light of the 'information access model', it soon became obvious that there were a number of differences in the implementation of the IPC registers by different local authorities. In particular, this examination highlighted the relatively small number of local authorities to have employed strategic planning to address the IRM issues that arose in relation to the IPC registers and when these local authorities were compared to those that had not carried out any planning, this could be seen to have had a significant impact on the way in which their registers had developed.

Strategic planning had been carried out by 41.4 per cent of the local authorities who responded to the questionnaire survey and as was highlighted in Chapter 6, this issue appeared to be central to the differences that emerged in the management of the registers by

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[12] This point was raised by interviews conducted at the Midlands Lower Trent office and North West regional office who had dealt with the problem of how to number documents in files in slightly different ways.

different local authorities. From examining the local authority case study findings, strategic planning appeared to have a direct link to the implementation of information management techniques to help set up and maintain the registers. For example, those local authorities who had carried out planning were more likely to have arranged their register, with 96.9 per cent of councils having organised their register, compared to 85.7 per cent of councils who had not carried out any planning. They were twice as likely to have made their register more manageable[13] and 36.5 per cent of them had introduced an index for their register, compared with 26.2 per cent of those who had not carried out any planning. Strategic planning also appeared to be connected to a greater commitment to users, as all the councils who made user guides available had carried out some planning into the registers and there were a number of other access issues where planning appeared to have made a difference, including the promotion of the register,[14] making the register available electronically[15] and actively disseminating information from the register to the public.[16]

The connection between planning and the management of the registers was also highlighted in the interviews conducted with local authority register staff. The New Forest District Council for example, carried out detailed planning into a number of management and access issues that were raised by the register and stated that this had been particularly beneficial, as it meant that procedures for setting up and managing the register were already in place when information began to arrive. This had resulted in the development of a register that was particularly well managed and where information could be easily located. Similarly, the importance of planning was also highlighted by Southampton City Council, who had used it to address a number of specific issues such as the security of information. Southampton City Council was particularly concerned that information that had been classed as commercially confidential could find its way onto the register and so had used the planning process to put procedures in place that would try to prevent this from happening.

As with the Environment Agency then, those local authorities that had carried out planning were much more likely to have addressed the issues highlighted in the 'information access model' and to have devised practical procedures for dealing with them. Local authorities that

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[13] 15.9 per cent compared with 7.3 per cent of those councils that had not carried out any planning.

[14] Where 39.6 per cent of those councils that had carried out planning now promoted the register, compared to 16.2 per cent of those that did not.

[15] Where 14.3 per cent of the councils that had carried out planning made information from the register available electronically compared to 4.7 per cent of those that did not.

had carried out planning were therefore more likely to have encouraged access to the register and to have developed tools so that the registers could be more easily managed. However, despite the benefits that appeared to result from planning, the majority of local authorities either had not carried out any planning or were unsure if any planning had been carried out and in these local authorities, the management of the register appeared to have been a lot more haphazard.

In local authorities where no planning had been carried out, it was much less likely that the issues highlighted in the 'information access model', as helping to achieve successful policy implementation, would have been addressed and where these issues were tackled, they appeared to have been addressed individually, rather than as part of a systematic planning process. This was highlighted for example, at Portsmouth City Council where the interviewee stated that no systematic planning had been carried out into the registers and where, on the whole, access to the register was poor. The register was inadequately organised with information for its four authorisations mixed up in a number of lever arch files. Documents appeared to be randomly stapled together and placed in folders where there was room, rather than in any particular order and this made the register particularly difficult to use, as it was virtually impossible to trace the sequence of events that occurred in relation to each authorisation. The Portsmouth register could therefore be seen to have made little attempt to support visitors, either through the organisation of the register or with indexes or users guides. However, there was one area where the Portsmouth register far outshone all the other registers visited and that was in making additional information available. Portsmouth council made nine lever arch files of additional information available to visitors, including copies of the Environmental Protection Act and related legislation, technical guidance notes and published research. In this one area then, the Portsmouth register could be seen to be comprehensively supporting users, but in the other areas highlighted in the 'information access model' little work had been carried out. Issues of access and management in local authorities that had not carried out planning, could therefore be seen to have been addressed in a far more piecemeal fashion, leading to registers which often failed to address the key management issues that were set out in the 'information access model'.

The differences in the management styles and practices of different local authorities were also highlighted in the results of the cluster analysis conducted on the local authority questionnaire data set. This cluster analysis revealed four clusters, which could all be differentiated in

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[16] Where 12.7 per cent of councils who had carried out planning actively disseminated information from the register, compared to 7.1 per cent of those that did not.

terms of their information management styles. For example of the four clusters, Cluster 1, made up of 25 councils, probably most closely mirrored the model for policy implementation proposed in the 'information access model', as in this cluster 60.0 per cent of local authorities had carried out planning into the development and maintenance of the register and this appeared to have had an important effect on the way in which these registers had developed. All the councils in this cluster for example, had organised their register, with the vast majority, 84.0 per cent, using company name or authorisation reference number as the basis for this organisation. Councils in this cluster were also more likely to have an index to their register, 40.0 per cent compared to 30.3 per cent overall and were more likely to make user guides available, 8.0 per cent compared to 2.6 per cent overall. They were also twice as likely to actively disseminate information from the register, with 16.0 per cent of councils disseminating information, compared with 8.4 per cent of councils overall. Councils in Cluster 1 could therefore, on the whole, be seen to have a reasonably strong grasp of different information management techniques and had used these both to improve the use of and the maintenance of their registers.

Whilst Cluster 1 had a strong planning and information management style, Cluster 2, made up of 43 councils, could be seen to have a strong commitment to information access. In this cluster, councils were much more likely to have promoted their register to the public. They were also more likely to allow photocopying, 97.7 per cent compared to 91.8 per cent over all, and were less likely to charge for supplying information from the register, with nearly three quarters, 72.1 per cent making no charge for supplying information compared with 65.5 per cent of councils overall. They were also three times as likely to make information available electronically, with 23.3 per cent of councils in this cluster making information available in this way, compared with 8.3 per cent of councils overall. In this cluster, 41.9 per cent of councils had carried out planning into the register, a figure comparable with the average[17] and this appeared to have resulted in the development of registers where their was a grasp of some of the issues highlighted in the 'information access model', especially those concerned with access, but where other information management issues, such as indexes had not really been addressed. The comprehension of information management issues in this Cluster was therefore more piecemeal that it had been in Cluster 1.

Cluster 3 meanwhile, which is made up of 85 councils, can be seen to have neither a strong commitment to information management or to information access and in many ways is indicative of the bottom-up approach to policy implementation. In Cluster 3, only 35.3 per

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[17] The average being 41.4 per cent.

cent of councils had carried out planning into the IPC registers and this appeared to have had a significant impact on their management. For example, all the registers that were not arranged, were located in this cluster. Similarly, councils in this cluster were less likely to have an index for the register, with only 25.9 per cent having an index, compared with 30.3 per cent overall, and were less likely to make user guides available. The council's in this cluster were also less likely to have addressed the access issues that arose in relation to the register, so they were less likely to disseminate information from the register, with only 4.7 per cent disseminating information, compared with 8.4 per cent of councils overall. They were less likely to have publicised the register, with only 12.9 per cent of councils promoting their register, compared with 32.6 per cent overall and they were much less likely to make information available from the register electronically, with only one of the eighty five councils in this cluster making information available in this way. Cluster 3 could therefore be seen to be the opposite of the 'information access model', with councils in this cluster, on the whole, going no further than fulfilling their statutory duty to have the information available for public inspection and doing little to actively support the use and maintenance of the registers. These characteristics were also shared by the three 'oddball' councils that could be found in Cluster 4.

In using the 'information access model' to examine the local authority case study findings, three different information management styles could therefore be identified. The first of these showed a strong commitment to planning, which could be seen to have resulted in a range of information management and access issues being addressed. This use of planning and information management to make the register easier to manage and use was identified in Cluster 1 and of all the information management styles identified in the local authority case study findings, was the one that most closely mirrored the rational planning framework set out in the 'information access model'. The second information management style identified showed less of a commitment to planning but had still addressed many of the access issues highlighted in the 'information access model'. This management style was identified in Cluster 2 and could be seen primarily to address those issues that would encourage people to use the register, like promotion and making information available electronically. In examining this management style in relation to the 'information access model', councils in this Cluster were less likely to have carried out planning into the register and this appeared to have led to more piecemeal implementation of the IPC registers. In this cluster, policy implementation was issue-led rather than policy-based, with issues being addressed when necessary rather than in a systematic fashion. The final information management style identified in the local authority case study findings, in many ways appeared to be the antithesis of the rational planning strategy highlighted in the 'information access model'.

This management style or rather a lack of it was seen in Clusters 3 and 4, where the majority of councils had carried out no planning into the registers and this appeared to have resulted in public registers which did little more than fulfil their statutory duties. These councils, on the whole, had made little attempt to support access to or the management of the registers and, as in the case of Portsmouth City Council, could be seen to have the least successful IPC registers.

In the examination of the local authority case study findings, the 'information access model' was a useful evaluative tool, as it enabled a greater of understanding to be gained of the way in which the local authority IPC registers had been implemented. In particular, it enabled the different information management styles and practices used by local authorities to be identified, so that their strengths and weaknesses could be investigated and comparisons could be made between them. In using the 'information access model' as the basis for evaluation, local authorities that had used planning to address the different information management and access issues raised by the registers, could be seen to have set up registers which were, on the whole, well managed and supported user access. While the local authorities who had carried out a more piecemeal implementation of the registers, like those in Cluster 2, had developed registers which while effectively managed in some areas, were not as comprehensively managed as those in Cluster 1. Finally, the local authorities that had carried out little planning, like those in Clusters 3 and 4, had resulted in registers that did little to support effective user access. In using the 'information access model' as an evaluative device, the local authority IPC registers could therefore be seen as being far more diverse that those set up by the Environment Agency, and in many ways this meant that their implementation was far less successful. These differences between the Environment Agency's and local authorities implementation of the IPC registers will now be examined.

8.3.3 Comparisons and recommendations

The 'information access model' will now be used to compare the implementation of the IPC registers by the Environment Agency and local authorities, so that their strengths and weaknesses can be highlighted. These comparisons will be set out in relation to the four key areas identified in the 'information access model'. These are:

- approaching the policy problem;
- planning;
- procedures; and

- control.

Approaching the policy problem

A number of different approaches to the policy problem, of setting up the IPC registers, could be identified in the case study findings. The Environment Agency's approach was largely policy-based, which meant that the problem was addressed rationally using the policy process as framework firstly, to identify possible solutions to the policy problem, secondly, to select a policy option and thirdly, to set out the policy goals to be achieved. This policy-based approach appeared to be one of the strengths of the Environment Agency's implementation of the IPC registers, as it enabled all the different aspects of policy implementation, such as planning and the development of procedures, to be focused towards the achievement of the policy goals. This led to the development of a register that in all areas was consistently working towards the achievement of the policy goals.

This policy-based approach employed by the Environment Agency contrasted significantly with the issue-based approach employed by the vast majority of local authorities, in implementing their IPC registers. These local authorities could be seen to address information management and access issues as problems arose, rather than in the rational and systematic fashion employed by the Environment Agency and this led to the piecemeal development of registers, where one or two individual issues might have been tackled but where, on the whole, the other issues highlighted in the 'information access model' failed to be addressed. In light of this, the piecemeal strategy employed by the majority of local authorities to implement their registers, could not be seen as successful as that employed by the Environment Agency, as it resulted in registers where the majority of access and management issues remained unaddressed and where as a result of this, the registers often failed to support user access.

Planning

The second area highlighted in the 'information access model' as encouraging successful policy implementation, was planning and again a number of different approaches to this issue could be found in the case study findings. In both the Environment Agency and local authority case study findings the planning process was identified as being critical to the development of the registers. The Environment Agency, for example, used the planning process to address most of the information management issues highlighted in the 'information access model' and was able to develop solutions to these issues that helped to fulfil the

policy's goals. The use of planning by the Environment Agency could therefore be seen as having had positive benefits for their implementation of their IPC registers.

The benefits of planning in the creation of a successful IPC register were also highlighted by the local authority case study findings, where three distinct management styles were identified all of which used planning to varying degrees. The local authorities in Cluster 1 had carried out the highest levels of planning and this appeared to have resulted in registers where the majority of issues highlighted in the 'information access model' had been addressed, while the local authorities in Clusters 3 and 4 had carried out the least levels of planning and this appeared to have led to issues being tackled in a far more piecemeal fashion, so that overall, fewer issues were addressed. There therefore appeared to be direct correlation between the levels of planning and the variety of access management issues addressed in the implementation of the IPC registers, so that those local authorities that had carried out the most planning could be seen to have implemented the IPC registers that most successfully supported user access.

Procedures

The third key area seen as encouraging the successful implementation of information access policies was the development of procedures, that could then be used to address the management issues highlighted in the 'information access model'. The development of set procedures for the management of the register usually resulted from the decisions that were taken in relation to these issues in the planning process. The Environment Agency for example, had taken a number of decisions in the planning process about the management of the register, which then resulted in a number of procedures being put in place to govern their management. These procedures could then be used to develop practical tools to support the management of the registers, such as the public register transmission sheets. The development of set procedures by the Environment Agency could again be seen as a strength, as it helped to standardise their registers as each office was using the same procedures and management tools, which meant that all the registers were working towards the achievement of the same policy goals.

The development of procedures and practical tools that could be used to support the management of the registers, was also highlighted in the local authority case study findings as leading to the implementation of a more successful register. In the local authority case study findings, the development of procedures and practical tools for the management of the register could be seen to have a direct link to the amount of planning that had been carried out. Those

councils that had carried out planning were much more likely to have put procedures in place for the management of their registers and were more likely to have developed management tools, such as indexes and users guides that could be used to support user access, while those local authorities that had not carried out any planning were less likely to have addressed these issues.

Control

The final issue highlighted in the rational 'information access model' as being important for the achievement of successful policy implementation, was the issue of control. This was particularly highlighted in the Environment Agency case study findings where one body, the Environment Agency, was responsible for the development of sixteen IPC registers and was as a result of this, able to make sure that all the procedures established, as a result of their planning process, were implemented in the same way. This control in turn enabled them to achieve their policy goals of creating a standardised, effective, and efficient IPC registers.

In the local authority case study findings this element of control was largely absent, as no one body was responsible for the implementation of the IPC registers and as a result of this, each local authority was able to do as much or as little as they wanted. This resulted in large variations in the registers held by different local authorities with some, trying to implement registers that could be both easily used and maintained and others, doing little more than fulfilling their statutory duty in having the information available. This lack of control could therefore be seen as having been responsible for the variance in the local authority registers and as a result of this, was also responsible for some members of the public being unable to effectively access this type of information.

The 'information access model' has been employed in this research to organise and evaluate the Environment Agency and local authority case study findings. In carrying out this evaluation, a number of issues have being identified which support user access and which can therefore be seen as being responsible for the successful implementation of the IPC registers, by the Environment Agency and some local authorities. In light of these findings, a number of broad recommendations will now be made, which can be used by public bodies in the design and delivery of information access policies. These recommendations are:

- That a rational policy-based approach is used to develop information access policies;
- That public bodies set clear goals to be achieved in their information access policies;

- That these goals are then used to drive the development of the policy;

- That a rational planning process is used to address the main issues that arise in relation to the information access policy;

- That this planning process is linked to the policy goals;

- That the information life cycle offers an effective way of addressing the management issues that arise in relation to an information access policy;

- That procedures are introduced that work towards the achievement of the policy goals

- That procedures are introduced to guide the overall implementation of the policy;

- That procedures are introduced to deal with the practical issues that arise in relation to the policy;

- That control of the implementation of information access policies is given to one body;

- That this body is able to ensure the consistent and effective implementation of these procedures;

- That an evaluation of the information access policy is then carried out to highlight any problems or areas where improvements could be made.

8.4   The Validity of the Model

In the previous section, the 'information access model' was employed as a prescriptive tool, which could be used to evaluate the local authority and Environment Agency case study findings and following this analysis, was then used to make broad recommendations for the successful implementation of information access policies. Having used this model to analyse the case study data, this final section will now investigate the validity of the 'information access model' itself. The key concept underpinning the 'information access model' is that the integration of rational planning and IRM can result in the development of successful information access policies, and this premise will now be examined in light of the case study findings.

To investigate the validity of the 'information access model', the case study findings were analysed to see if the employment of the two key areas of 'PLANNING' and 'IRM' had resulted in what could be seen as 'POSITIVE POLICY OUTCOMES'. To carry out this investigation the local authority questionnaire returns were examined, as this provided a useful case study through which this premise could be investigated. This was because the cluster analysis had already revealed a number of management styles being employed and a number of different policy outcomes. To analyse the relationships between planning, IRM

and positive policy outcomes, a number of variables were identified from the questionnaire research, as being indicative of these three things. These variables can be seen in Table 8.1

These variables were chosen as each was seen as being indicative of one of the three key issues. Planning was obviously indicative of planning, organisation of the registers, index, user guides and other information available were identified as being indicative of the various information management issues highlighted in the model and as a positive outcome to the policy could be seen as supporting information access, publicising the register, disseminating information, making information available electronically and allowing visitors to access the Pollution Inventory on the web were all identified as issues which showed a determination by a council to make information from the register easily available to the public.

Table 8.1   **Variables used to investigate the validity of the 'information access model'**

Issues	Variables
PLANNING	Planning
IRM	Organisation of the register Index User guides Other information made available
POSITIVE POLICY OUTCOMES	Publicise the register Dissemination of Information Make information available electronically Visitor access to the Pollution Inventory

To analyse the relationship between planning, IRM and successful policy outcomes, the nine variables highlighted above were examined and their relationships explored. In carrying out this examination, the issue of planning was quickly identified as being of central importance to successful implementation of information access policies, as local authorities who had carried out planning were much more likely to have introduced information management procedures and to have actively supported access to the register. These positive relationship between planning, IRM and information access could be seen by cross-tabulating the nine variables above, where those local authorities that had carried out planning were more likely to have organised their register,[18] were more likely to have developed indexes and user guides

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[18] As 96.9 per cent of council had organised their register, compared to 85.7 of councils who had not carried out any planning.

for their register[19] and were more likely to have made other information available,[20] than those local authorities that had not carried out any planning. In turn those councils who had carried out planning were also more likely to have encouraged access to information on the register by publicising the register,[21] by actively disseminating information from the register,[22] by making information from the register electronically[23] and by allowing visitors access to the pollution inventory.[24] Planning therefore appeared to be the key to the development of a successful information access policy as this meant that a wide variety of information management and information access issues were addressed and this in turn led to better access to the register, as people were able to access the information more easily and use it more effectively.

The link between rational planning and information resources management and the positive effects that this could have on information access was also highlighted by the local authority cluster analysis, which was examined in the previous section. In the local authority cluster analysis, three different management styles were identified; the first of these, highlighted in Cluster 1, showed relatively high levels of planning and a fairly strong grasp of the information management techniques that were used to manage the register and support users, Cluster 2 showed average levels of planning and a more piecemeal employment of management tools, while councils in Clusters 3 and 4 had carried out little planning and had few management tools in place to support the use and maintenance of the registers. Thus the cluster analysis also supported the premise that planning and information resources management led to the development of positive information access policy outcomes. However, the data which most strongly supported this view was from the Environment Agency case study findings, where the employment of a process of rational planning had led

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[19] 36.5 per cent of councils who had carried out planning had introduced indexes compared with 26.2 per cent who had not and 6.3 per cent of councils who carried out planning made user guides available compared to none of the councils who had not carried out any planning.

[20] 57.9 per cent of councils who carried out planning made additional information available for register users, compared with 40.5 per cent of councils who had not carried out any planning.

[21] With 39.6 per cent of councils who had carried out planning promoting their register, compared with 16.2 per cent of councils who had not.

[22] With 12.7 per cent of councils who had carried out planning actively disseminating information, compared to 7.1 per cent who had not.

[23] With 14.3 per cent of councils making information from the register available electronically, compared with just 4.7 per cent of councils who had not.

[24] With 8.8 per cent of councils allowing visitors access to the Pollution Inventory compared with none of the councils who had not carried out any planning.

to the development of a wide range of management tools and procedures, which were used to implement a register that was consistent across the Environment Agency regions, that was efficient for Environment Agency staff to manage and which provided effective access to the information.[25]

In carrying out this examination of the case study findings, substantial evidence has been found in relation to both the local authority and Environment Agency IPC registers, that the integration of rational planning and information resources management, as proposed by the 'information access model', can have significant impact on the achievement of positive policy outcomes. The validity of the 'information access model', as a prescriptive framework for the achievement of success information access policies, can therefore be seen to be supported by the empirical evidence gathered as part of this research.

The discussion and interpretation of the case study findings conducted in this Chapter, has highlighted the value of the 'information access model' in conducting information policy research. The 'information access model' was employed in this research to fulfil two functions. The first was to act as an investigative framework which could be used to organise the case study findings and the second, was to act as an evaluative tool which could be used to measure the success of information access policies. In the course of this research, the value of the 'information access model' in carrying out both these functions has been firmly established. As an investigative tool it was used to identify a number of management styles employed in the implementation of the IPC registers, ranging from the top-down, policy-based approach employed by the Environment Agency to the bottom-up, issue-led approach employed by most local authorities. The 'information access model' was then used to evaluate the success of these different management styles in creating an effective information access policy. In carrying out this evaluation, the 'information access model' was used to identify four issues which had been critical to the successful implementation of the IPC registers and these were then used to draw up a number of recommendations for public bodies in designing and delivering public information programmes.

The 'information access model' has therefore been successfully employed in this research to examine the implementation of information access policies and offers a number of benefits for information policy research. However, there are still a number of areas where further research is needed to advance this model and improve it use. This is because:

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[25] This was discussed in greater detail Section 8.3.1.

- the 'information access model' has only been employed in relation to a single case study and so the model needs to be employed in the evaluation of other information access policies to further underline its validity as a research tool.

- The 'information access model' was only employed in this research in relation to policy implementation and so needs to be examined in relation to the other stages of the policy process.

- The information life cycle stages employed in this model need further examination to make sure that they can be employed in relation to other information access policies.

- The relationship between individual information management issues to the successful implementation of information access policies were not comprehensive addressed in this research and so need to be further examined.

- The information access model' was only employed in relation to a paper-based information access policy and so its validity in relation to electronic information access policies needs to be investigated.

- The value of the model might have been further advanced if more formative evaluations had been carried out into some aspects of the research, such as the way in which individual information management procedures were implemented, rather than solely looking at what information management procedures were implemented.

Chapter 9.   Conclusions

9.1   Introduction

This chapter examines the limitations of this study, summarises the main research findings and identifies a number of directions for future research.

9.2   Limitations of the study

As with any research project, the findings highlighted in the previous three chapters are subject to a number of limitations. These derive from a number of sources including the literature review, the case study, the research methods employed and the 'information access model'.

Literature review

The failure of LIS literature to investigate the relationship between information access, policy implementation and information resources management in the past, has meant that no established research could be identified which could be used to validate the research findings or the use of the 'information access model'. In light of this, the conclusions drawn in this research would require further validation from other research before they can be used to make any generalisations about the subject area.

Case study limitations

There were a number of limitations with the particular case study employed in this research. Firstly, the case study itself, was restricted to those IPC registers that were located in England and Wales and so failed to investigate those found in Scotland and Northern Ireland. Secondly, the use of the IPC registers as the case study meant that the research conducted in this thesis only examined the implementation of a paper-based information access policy, which meant that electronic information access policies were not covered and there are obvious differences between the two that would require further examination.

Research methods limitations

The third set of limitations came out of the research methods employed. In particular, the small number of case study visits and interviews carried out in this research can be seen as a particular limitation of the research design, especially in relation to local authorities, where it would have been beneficial to carry out larger numbers of visits and interviews. In carrying out more visits and interviews, information from a wider geographical spread of local authorities and larger number of council types could have been gained, which could have been used to further validate the questionnaire data set.

'Information access model' limitations

Finally, there were a number of limitations with the employment of the 'information access model' in this research. As has previously been highlighted in carrying out the literature review for this research, no established research framework could be identified to examine the relationship between information access, policy implementation and information resources management. The 'information access model' has therefore only been employed in relation to the case study used in this research and so requires further validation before it can be confirmed as a useful model for the study of information access policies. A further limitation with the employment of the information access model in this research is that the study only examined its effects on the implementation of the IPC registers and so although beyond the scope of this case study, its validity in examining the other stages of the policy process would also need to be analysed.

9.3   Summary research findings

This section summarises the main research findings from Chapters 4 – 8.

1—Relationships identified from the literature

Through an examination of the literature the existence of a relationship between information access and information resources management, and policy implementation and information resources management could be identified from the literature. However, the failure of the literature to examine this area of information policy in significant detail meant that no established research frameworks could be identified. (Sections 4.6 and 4.7)

2—An analytical framework could be developed

In combining the policy process framework and the information life cycle concept a framework could be developed to examine the implementation of information access policies. (Section 4.8)

3—Local authority and Environment Agency questionnaire data sets reliable and valid

The analysis of the questionnaire data set highlighted no significant bias. (Sections 6.3 and 7.3)

4—Underlying structure identified in the local authority questionnaire data set

Through the use of multivariate techniques, including cluster and discriminant analysis, an underlying structure could be identified in the local authority data set, which indicated the employment of different information management styles by different local authorities. The Cluster analysis identified four main clusters within the data set. Six factors were identified from the factor or principal components analysis as being responsible for the variance in the data. (Section 6.4)

5—Scale of management identified as responsible for variance in local authority case study findings

The size of individual IPC registers appeared to have a direct effect on the way in which they were managed by councils. (Section 6.6.2)

6—Commitment to information access identified as responsible for variance in local authority case study findings

A commitment to information access, through issues such as promotion, electronic access and supporting users, led to differences in the way in which the registers were developed and used. (Section 6.6.3)

7—Commitment to management and users identified as responsible for variance in local authority case study findings

Information management identified as playing a crucial role in determining the way in which different IPC registers have developed. A number of issues were identified as being responsible for these differences in information management, in particular planning and the receipt of regular visits and enquiries. (Section 6.6.4)

8—Local authority characteristics identified as responsible for variance in local authority case study findings

Individual local authority characteristics such levels of urbanisation, industrialisation and council type could also be seen to have influenced the way in which different local authority IPC registers and been developed. (Section 6.6.5)

9—Location and policy issues identified as responsible for variance in local authority case study findings

The location of councils in different Environment Agency regions was also identified as affecting the way in which different registers developed, as councils in some regions were using different information management techniques to those found in other regions. (Section 6.6.6)

10—Costs identified as responsible for variance in local authority case study findings

Costs were responsible for variance in the local authority data largely because they were indicative of other issues occurring in relation to the register. Time costs maintaining the register and financial costs were indicative of the size of the registers, while time costs dealing with enquiries indicative of the number of visitors and enquiries. (Section 6.6.7)

11—Uniform implementation of the Environment Agency's IPC registers

In comparison to the local authority case study findings, the Environment Agency's implementation of the registers was far more uniform with various guidelines being used to implement the Environment Agency's management strategy. The Environment Agency had tried to make the registers easier to use and maintain and had introduced a number of procedures to ensure the standardisation of their registers across the country. (Section 7.5)

12—Environment Agency implementation mirrors top-down rational approach highlighted in the 'information access model'

When examined in light of the 'information access model' the Environment Agency's successful implementation of the IPC registers could be seen to be due to planning, procedures and control, all of which were highlighted in the 'information access model' as being necessary for the successful implementation of information access policies. The employment of these three things enabled the Environment Agency to achieve its policy goals of creating a consistent, efficient and effective IPC register. (Section 8.3.1)

13—Local authority implementation shows a number of different management styles when examined in light of the 'information access model'

When examined in relation to the 'information access model' three different management styles could be identified from the local authority case study findings. Local authorities that had carried out planning to address the different management and access issues raised by registers could be seen to have set up registers that were on the whole well managed and supported user access. This management style was seen in Cluster 1, identified as a result of the hierarchical cluster analysis. The second management style was made up of councils who had carried out more piecemeal implementation of the registers and this had led to some access and management issues being addressed but not all. This was indicated by the councils in Cluster 2. The final management style was highlighted by Cluster 3, which was made up of councils that had carried out little planning and as a result of this had led to the creation of registers which did little to support user access. (Section 8.3.2)

14—Four key areas identified as being responsible for successful policy implementation

Four issues were identified, primarily from the evaluation of the Environment Agency case study findings in light of the information access model', which were seen as being critical in the successful implementation of information access policies. These were: the approach to the policy problem, including the choice of policy solution and the setting of policy goals; the execution of a rational planning programme that addresses the information management issues highlighted in the information life cycle in light of policy goals; the introduction of procedures and guidelines to address information management issues which again are designed to achieve the policy goals and finally, control of the policy to make sure that all the procedures are implemented and are carried out at the right time. (Section 8.3.3)

15—'Information access model' validated by the empirical evidence

The key premise of the 'information access model', that the integration of rational planning and information resources management could lead to positive policy outcomes for information access, was validated by the empirical evidence collected as part of this research and in light of this, the 'information access model' could be seen as a useful investigative and evaluative tool for information policy research.

9.4   Directions for further research

In Section 9.2 a number of limitations were laid out in relation to this study and to overcome many of these, further research is needed. One of the key areas highlighted in this study as

requiring further research is information access and in particular, information access policies. This research has highlighted the tendency of the Information Science field in the past to carry out descriptive rather than evaluative studies into information access policies which has led to an absence firstly, of research frameworks which could be used to investigate the relationship between information access, policy implementation and information resources management and secondly, an absence of research findings which could be used to validate the case study findings of this research. More detailed investigation of information access policies is therefore a key area for further research. This future research into information access policies is necessary firstly, to validate the research findings into the relationship between information access, policy implementation and information resources management highlighted in this research and secondly, to address the impact of political, economic, organisational and technological issues which were also identified in Section 4.3.4 as affecting information access policies.

One of the benefits of carrying out further research into information access policies is that there are currently a plethora of possible case studies that could be used to investigate this issue. These are the UK's Freedom of Information Act, which is set to be implemented by 2005, the UN ECE 'Aarhus' Convention highlighted in Chapter 2, the changes which are currently being made to the IPC registers, which will result in them being made available electronically, and the implementation of the new IPPC register which is set to take over from the IPC register in 2007. All of these issues would prove to be useful case studies for the further examination of information access policies and would have the additional benefit to this study, of being implemented at the moment which would allow more formative evaluations to be carried out and further insights into the implementation process to be gained.

The second area where further research is needed, is into the 'information access model' which has been employed in this research as an investigative and evaluative tool through which to examine information access policies. As was highlighted in the previous section, the evidence collected as part of this research was able to validate the basic premise of the 'information access model' that the integration of rational planning and IRM can result in positive policy outcomes. However, as the information access model has only been employed in relation to the single case study it requires further investigation before it can be completely validated as a research tool. This research would need to examine its validity in relation to other stages of the policy process, would need to carry out further examination of the information life cycle stages employed to make sure that these could be applied to all information access policies and would need to look at the relationship between individual

information management issues and policy implementation. In addition to this the validity of the 'information access model' also needs to be examined in relation to electronic information access policies which as was highlighted in Footnote 98 of Chapter 4 do contain important differences to paper-based information access policies.

Finally, on a more general note further research is required into the theoretical foundations of information policy, which as was highlighted by Rowlands (Rowlands: 1996) and Browne (Browne: 1997a 1997b) in Section 4.4.3 is still lacking both the intellectual base and range of methodological frameworks necessary for it to be integrated into mainstream policy research.

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