

**THE POLITICS OF
NEW TECHNOLOGIES
IN LOCAL GOVERNMENT**

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ABSTRACT

New information and communication technologies (ICTs) are important not only because they provide the tools with which changes can be effected, but also because they influence broader policy making. New technologies shape and structure decisions by imposing both limitations and opportunities on the direction of change organisations can pursue. Understanding the ICT policy process is an essential prerequisite, therefore, for understanding broader changes occurring in British local government.

The extensive changes experienced by local authorities over the last two decades have led to an over-emphasis upon the service delivery role of local government to the detriment of the equally important roles of local democracy and public policy making. This is partly because ICT investments are directed almost exclusively at aspects of service delivery or management. This ICT bias can be explained by developing the policy network concept to analyse ICT policy making processes. The dominance of this network leads to an undue concentration on ICT investments which can demonstrate immediate benefits for the organisation and the rejection of those which can only offer more intangible or imprecise benefits for local government. This effectively inhibits the adoption of those technologies which might address shortcomings in the democratic or public policy making roles of local authorities.

These arguments are explored through a detailed empirical study of a metropolitan authority in the north-west of England. The study comprises both a quantitative analysis of the interactions between various actors in the ICT network and an iterative process of interviews with the same actors. Thus, it develops a comprehensive analysis of the ICT policy process and its outcomes in the case study authority.

The significance of the ICT policy network is that it exerts a significant but largely unseen influence over the broader structural and institutional reform occurring in local governance. This influence is dangerous for local government because it concentrates too much on functions which other agencies can perform with equal efficacy while not giving enough emphasis to the unique capacities of elected local government for enhancing democracy and leading public policy making at the local level.

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LIST OF ABBREVIATIONS

AIDS	Acquired Immune Deficiency Syndrome
CCT	Compulsory Competitive Tendering
CCTA	Central Computer and Telecommunications Agency
CINCOM	Cincinnati Computers
CIPFA	Chartered Institute of Public Finance and Accountancy
CLD	Commission for Local Democracy
CTAX	Council Tax (ICL proprietary software)
DDI	Digital Design Incorporated
DfEE	Department for Education and Employment
DILIS	Direct Labour Information System (ICL proprietary software)
DMT	Departmental Management Team
DSO	Direct Service Organisation
DSS	Department of Social Security
EC	European Community
EDF	Electricité de France
EIS	Executive Information System
Email	Electronic Mail
ESRC	Economic and Social Research Council
ETM	Electronic Town Meeting
FE	Further Education
FITLOG	Foundation for Information Technology in Local Government
FM	Facilities Management
GDN	Government Data Network
GDP	Gross Domestic Product
GLC	Greater London Council
GMS	Grant Maintained School
GOSIP	Government Open Systems Interconnection Profile
HAT	Housing Action Trust
HBIS	Housing Benefits Information System (ICL proprietary software)
IBM	International Business Machines
ICL	International Computers Limited
ICTs	Information and Communication Technologies
IS	Information Systems
ISDN	Integrated Services Digital Network
ISO	International Standards Organisation
ISS	Information Systems Strategy
IT	Information Technology
LAN	Local Area Network
LEA	Local Education Authority
LGC	Local government Commission (for England)
LGMB	Local Government Management Board
LMS	Local management of Schools
MDIS	McDonnell Douglas Information Systems
MIS	Management Information Systems
NHS	National Health Service
NPM	New Public Management
OMR	Optical Mark Reader
OSI	Open Systems Interconnection

OXCIS	Oxfordshire Community Information System
PA	Personal Assistant
PC	Personal Computer
QUANGO	Quasi-Autonomous Non-Governmental Organisation
SOCITM	Society of Information Technology Managers in Local Government
SOSCIS	Social Services Client Information Systems (ICL proprietary software)
SRB	Single Regeneration Budget
TEC	Training and Enterprise Council
UDC	Urban Development Corporation
VCR	Video Cassette Recorder
VCT	Voluntary Competitive Tendering
VEL	Vehicle Electrique
WAN	Wide Area Network

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At the conception of this work I laboured under the misunderstanding that a PhD was a highly personal and individual piece of work which emerged from several years of solitary research and writing activity. Nothing could be further from the truth. It is true that the tangible outputs of the thesis are all my own work and that the ideas expressed here-in have been developed through my own research and writing. But these activities did not occur in isolation - they are the product of innumerable interactions and discourse with a wide range of individuals, all of whom have helped in the process of developing this thesis. These individuals are too numerous to name here, though I am grateful to them all. There are, however, some who warrant special mention because of the assistance they have given me over the course of my research.

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1.

INTRODUCTION: NEW TECHNOLOGIES IN LOCAL GOVERNMENT

Bold visions heralding the rise of the information age, the information polity, the information superhighway, the digital society, virtual cities, electronic government, teledemocracy and the like have characterised the late twentieth century. The increasingly sophisticated integration of computing and telecommunications (telematics) and the various computing and telecommunication technologies that are closely or more distantly related to them, have brought about a language and rhetoric that is self-sustaining and ever-optimistic of the ability of science to deliver general improvements to the social, economic and political order - a rhetoric that the media, politicians and large corporations have all been keen to adopt and promote. But hidden amidst the hyperbole of the new technologies and their utopian promises are important issues concerning the relationships between new technologies, governments, information and society. There are fundamental changes occurring in these relationships which are, at the very least, made easier and more attractive by the introduction of new information and communication technologies (ICTs), and can be seen in some instances to be a direct or indirect product of the increasing prevalence of these technologies in every sphere of social, political and economic life.

Yet contemporary political science remains relatively hermetic to the significance of new and existing ICTs, dismissing most attempts to include the role of computing and telecommunication technologies within theoretical perspectives as inherently deterministic in their approach - for example, much of the literature on post-Fordism has been dismissed as being premised on technological determinism (Cochrane 1993). Instead, political science has focused on more conventional analyses of power, concentrating more or less exclusively upon political processes and their manifestations in various social and

economic contexts. Ignoring the prevalence of ICTs and their implications for changing political, economic and social relationships, however, is appearing increasingly naive and short-sighted. The new technologies are having an increasingly profound influence upon the very relationships and distributions of power which political science seeks to explain. Hence, the emergence of ICTs in the latter half of the twentieth century is intrinsically and inseparably related to wider political, economic and social change and *vice versa*. In order to understand changes that are occurring in one sphere it is also necessary to consider the changes that are occurring in other spheres of analysis, and more importantly, the interdependent relationships and connections between apparently separate changes.

This thesis draws explicit links between the emergence of new technologies and their relationship to political processes and wider socio-economic and political changes at the end of the millennium. It develops an analysis of change in UK government structures, processes and organisation that is explicitly linked to the emergence of new ICTs but which remains firmly embedded in political science. It concentrates upon the political processes that surround the development and adoption of new technologies in public administration and the implications of these processes for the evolution of both the technologies, and the structures and practices, which accompany the wider changes that are taking place.

More specifically the thesis is concerned with the impact of information technologies on contemporary local government in Britain, and especially with the political processes that influence the endorsement and adoption of some technologies and the dismissal or rejection of others. As a direct consequence it is inevitably concerned with the agenda of change in local government and the evolution of new structures, relationships and processes in local authorities. It is concerned with the ways in which the politics of ICTs in local government engenders particular technological infrastructures which in turn engenders particular political, organisational and economic changes.

The central hypothesis, therefore, comprises five core propositions:

1. Local government has experienced profound and enduring change over the last two decades. This process of change has challenged many of the traditional roles and responsibilities of elected local government and has led to the emergence of new structures and patterns of local governance in which elected local councils are only one of a number of actors (a more detailed discussion of the concept of 'governance', and its implications for elected local government, is undertaken in chapter three). The consequence has been a prolonged period of uncertainty and ambiguity for local authorities over both the roles which they should fulfil in the modern polity, and the ways in which their internal structures and processes should be organised to meet these roles.
2. Despite this uncertainty and ambiguity it is possible to identify three latent roles for elected local government: those of *local democracy, public policy making, and service delivery*. While none of these roles is new to local government their relative importance to one another has never been clearly articulated and is constantly changing. In the emerging patterns of local governance councils need to be more aware of the relative importance they attach to each role and the long term implications of giving greater emphasis to some roles rather than others.
3. New ICTs are heavily implicated in the process of change and in the ability of local authorities to fulfil their various roles. New ICTs are not only the instruments through which change is effected, they also shape and structure the direction of change, both facilitating change in some areas and inhibiting it in others. Within local government, ICT policy and investment has concentrated almost exclusively on the efficient and effective management of services to the relative exclusion of the other applications to which ICTs could be put. Consequently, ICTs (and ICT policy) have been a major contributory factor in developing a systemic bias in British local government which emphasises issues of service delivery and which largely ignores issues of local democracy or public policy making.

4. The systemic bias which emphasises the paramountcy of service delivery can be analysed by reference to a policy network focused around ICT professionals in local government. These professionals have extensive contacts with other ICT 'actors' and share the same values, appreciative systems and technological aspirations as their colleagues in other sectors of the economy. Consequently, they act as the technological gatekeepers for local government, developing and choosing technologies which reflect the dominant values of the ICT network. While these applications are not necessarily against the interests of individual local authorities they nonetheless miss many of the opportunities to develop the other potential roles of local government.

5. The existence of the ICT policy network, and the systemic bias which it fosters, has profound and far-reaching consequences for the future of local government in the UK. As the only institution beneath Parliament that is subject to direct periodic election under universal suffrage (although the referendum votes in favour of Scottish and Welsh assemblies in September 1997, and the legislation anticipated to enact them, will bring into being a new layer of government which may well challenge the democratic uniqueness of local government in Scotland and Wales), local government can claim a unique position as the focus of local democracy and as the legitimate centre for public policy making in the community. As the direct providers of services, however, local authorities are in direct competition with a wide range of single-purpose agencies which are often more specialised and better able to deliver services. If local authorities continue to ignore the potential of ICTs to enhance their democratic and public policy making roles, and concentrate ICT policy and investments almost exclusively on the management and delivery of services, then their role in the modern polity may diminish. Consequently, the ICT policy network and the policies it perpetuates may lead to the eventual demise of elected local government as an institution of the British polity.

The assumptions and arguments that underpin each of these propositions will be analysed in detail in subsequent chapters. Prior to this detailed analysis, however, it is useful to

set the context of these hypotheses, first by considering the agenda of change in local government, second by considering the significance of ICTs for modern local government, third by defining the object and scope of the analysis, and finally by outlining the method of analysis to be employed in subsequent chapters.

The agenda of change in local government

Change in the structure, organisation and management of the UK public sector since the mid 1970s has been widespread. Most conspicuously it has included extensive financial retrenchment, large-scale privatisation, organisational restructuring and the 'reinvention' of many government functions. Less conspicuously it has also included fundamental changes to the political and managerial cultures of the public sector leading to more profound changes in relationships within and between public organisations. Local government has been in the vanguard of much of this change, experiencing concomitant structural, organisational, financial, functional, managerial, political and cultural change: *structural change* has seen the institutional structure of local government frequently questioned and reorganised, most recently in the review of 'Shire' local government by the Local Government Commission for England under the initial direction of Sir John Banham (Wilson 1996), with separate arrangements for Scotland and Wales; *organisational change* has seen the internal restructuring of local authorities to cope with the changing organisational relations demanded by market based reforms such as compulsory competitive tendering (CCT) (Leach *et al* 1994), the general fragmentation of local government structures (Alexander and Orr 1993) and the development of the 'enabling authority'; *financial change* has seen several attempts to alter and refine the taxation base of local government, as well as attempts to change financial relationships between central and local government (Sanderson 1995); *functional change* has seen alterations in the functional responsibilities of local authorities with, for example, increasing responsibilities being given to local authorities under 'care in the community' but with power being devolved away from local authorities under the local management of schools (Stewart and Stoker 1989); *managerial change* has seen the introduction of new practices such as service level agreements and performance indicators as the primary means of managing

the resources of local authorities; *political change* has seen the democratic legitimacy of elected local government being challenged and replaced by other political mechanisms, most notably through the inexorable rise of local Quangos (Hogwood 1995, Wilson 1995) and the increased emphasis on market principles (see, for example, the Commission for Local Democracy 1995, Pratchett and Wilson 1996). In short, change has become an endemic feature of local government (Wilson and Game 1998).

The origins and causes of public sector change have been extensively analysed, offering a number of competing explanations for the evolution of public administration and government over the last fifteen to twenty years. Surprisingly, however, most of these analyses largely ignore the role and impact of ICTs in the change process, at best relegating them to the role of a peripheral and technical factor which bears no relationship to the main thrust of change and reform. Instead, analyses have tended to concentrate almost exclusively upon the political and economic origins of change and to explain emerging organisational, political, economic and social relations in these terms. For some, public sector change is directly and inseparably linked to the political and ideological agendas of successive Conservative governments since 1979 who aimed to 'roll back the frontiers of the state' and to introduce market disciplines into public bureaucracies (Mather 1989, Massey 1993). Whether directly associated with a neo-liberal ideological agenda or the more cynical perspective of 'statecraft' politics (Bulpitt 1986, 1989) such an argument has had strong normative and empirical appeal, especially when linked to the rhetoric of Conservative manifestos and the reality of the extensive legislation that has affected all areas of the public sector since 1979. For others public sector reform in the UK can be related more generally to broader changes in the patterns of governance occurring at a global level. These discussions recognise specific trends that amount to a 'hollowing out of the state' (Rhodes 1994) in particular nations, and more generally, the 'reinvention of government' (Osborne and Gaebler 1992). International comparisons certainly affirm the trends noted in the former while the latter concept has achieved widespread prescriptive popularity (a recommendation by the US President Clinton, while serving as a State Governor, bears testament to its prescriptive appeal to contemporary governments). For still others, more specific analyses have concentrated upon the extent to which recent changes are linked by a common set of managerially inspired reforms

described by Hood (1991) under the collective banner of new public management (NPM). Again, this literature offers a compelling account of international trends in the reform of public sector management (see for example Pollitt 1993), highlighting both the extent to which different types of reform are under way and the extent to which there is a convergence around particular managerial themes.

These approaches all have value in explaining emerging patterns of public administration in the UK and are as relevant to local government as they are to other areas of the public sector. But in ignoring or marginalising the importance of ICTs to contemporary government they not only overlook the significance of ICTs in enabling or sustaining particular reforms, they also, more importantly, ignore the politics of these technologies and the dynamic relationship that exists between the political processes that introduce specific technologies into organisations, and the wider intra- and inter-organisational relations that emerge as a consequence of them. In other words, ICTs do not arise in a political vacuum but are introduced into government through an inherently political process that sustains particular power structures, and undermines or alters others (Kraemer and King 1994). Consequently, an alternative perspective on public sector change is emerging around the concept of 'informatization' (Frissen 1992, Bellamy and Taylor 1992, 1994) and the parallel concepts of the 'information polity' (Taylor and Williams 1990, 1991) and the 'information economy' (Hepworth 1990). These concepts emphasise the importance of information in contemporary public administration and highlight the significance of the changing information flows and the changing relationships that are engendered by the introduction of ICTs into every sphere of government.

This thesis is concerned particularly with the perspective that the informatization approach offers. It analyses local government changes of the last two decades in relation to the ICTs that have emerged as an essential element of public administration and the new and altered information flows that they bring about. The informatization agenda highlights the impact of new technologies on public administration by providing an approach to organisational and political change that concentrates upon evolving information flows. It brings a unique perspective to local government reform by focusing attention on the ways in which the introduction of new technologies is able to structure and develop new

relationships along a number of dimensions: relationships between local government and individual citizens; relationships between local authorities and other public or private organisations; and internal relationships within authorities. It suggests that the introduction of new technologies affects the balance of power within and between organisations, providing some groups or individuals with increased access to information and influence, and reducing the autonomy and influence of others. Consequently the informatization agenda is an intrinsically political one which concentrates upon the political effects of new ICTs and the changing power relations they engender. It is also a particularly powerful tool for analysis which acknowledges the role of ICTs in acting as a catalyst for change but emphasises evolving information flows and aggregations as the principal focus of analysis. This study concentrates upon one aspect of the informatization agenda - the political processes and networks which frame the issues, define the infrastructure, and control the agenda for technological change and evolution. Thus, it draws upon the concept of policy networks (Rhodes 1986b, 1988; Marsh and Rhodes 1992) as a powerful theoretical construct for understanding the relationships and interactions which constitute the informatization agenda in local government.

In advocating the use of an informatization approach to analysing public sector change the issue is not whether local government is experiencing sustained and extensive change - this is taken as being part of the conventional wisdom of contemporary public administration (see, for example, Cochrane 1993, Gray 1994, Wilson and Game 1998, Stewart and Stoker 1995). Rather, the issue here is whether the informatization approach in general, and a focus upon the politics of ICTs in particular, is a useful way of characterising and analysing the changes that are taking place. It is a principal assertion of this thesis that the politics of ICTs are an essential, though under-analysed, element of the change process that provide an important route of articulation between the other agendas of change and the observable effects of new ICTs on government. In order to address this argument it is necessary to develop an understanding of the actual and potential significance of ICTs for modern local government.

The significance of ICTs for modern local government

Amidst all the hyperbole about the utopian and dystopian futures promised by the proliferation of ICTs throughout society it has become increasingly difficult to disentangle the more likely significance of ICTs for modern society from the wilder claims of technological rhetoric and science fiction (compare, for example, Burrows 1995, Mooney 1995, Jones 1995). As Coombs *et al* (1992) argue:

If it is easy to knock down apocalyptic visions of the 'effects' of ICT on society as naive technological determinism, it is not so easy to grasp and express the real nature and extent of the role of ICT in social and economic change (Coombs *et al* 1992, p53)

Whether pursuing apocalyptic or idealistic arguments, however, it is difficult to avoid accepting that ICTs are having a profound and sustained impact upon local government along a number of interdependent dimensions. New technologies have the dichotomous capacity to engender both the centralisation and the decentralisation of services; to both fragment services and to improve the aggregation of policy information; to increase individual and organisational autonomy while enhancing the surveillance and monitoring capacities of central organisations; to improve the transparency of selected policy outcomes while further obfuscating and obscuring policy processes; and to increase democratic access to information while further distancing and securing technocratic power bases. The significance of new ICTs cannot be determined, therefore, simply in terms of their general ability to improve or damage either specific features of local government, or the institution of elected local government in general. Instead, their significance is more complex and profound.

This leads to a tripartite assertion that the impact and significance of new ICTs is, at once, ambiguous, opaque and unexpected. Each element of this assertion requires further exposition. The impact of ICTs is ambiguous because, as suggested above, particular technologies can lead to dichotomous consequences for organisations and individuals. Technologies which are initially intended to support the decentralisation of bureaucratic structures through the creation of neighbourhood offices, one-stop-shops and so on, at the same time support the central aggregation of information and power, often leading to increasingly centralised decision-making structures. Systems which promise to give

greater autonomy to line managers by providing more localised information and allowing decisions to be taken at lower levels in the organisation also make the activities of the same managers more transparent, and consequently, more controllable. What new technologies offer with one hand, therefore, they take away with the other. This is effectively illustrated by David Lyon in his account of the Columbus (Ohio) 'Qube' experiments with electronic town meetings, in which he acknowledged the increased democratic participation that such meetings engendered, but expressed significant concerns over the privacy implications which digital footprints may hold (Lyon 1993). Consequently, ICTs are intrinsically ambiguous in their significance and impact.

This ambiguity is compounded by the often opaque impact of ICTs. By their very nature the consequences of these technologies are not confined to a technological policy arena but cut across other policy areas as well. Computing and communication technologies are becoming increasingly relevant to all aspects of local government activity, from the implementation of CCT policies (see for example, Steele and Pollock 1994) through to the imaginative use of telematics to engender local economic regeneration (Ducatel 1994, Carter 1995). The implementation of each system, whatever its intended role, has implications that extend far beyond the specified functional impacts anticipated of it. Each system also brings about more subtle changes in the working patterns and arrangements of individuals, in the hierarchical and vertical relationships within and between organisations, and in the balance of information and other resources between the bureaucracy and the citizen. In other words, the introduction of ICTs affects intra- and inter-organisational relations in sophisticated but unseen ways. The implementation of ICTs engenders hidden as well as overt consequences for both policy processes and the organisations associated with them.

Finally, the impact of ICTs are often unforeseen and unexpected. The subtle impact of ICTs on intra- and inter-organisational relations are not necessarily anticipated by those implementing systems (for example, Clegg and Dunkerley 1980, Coombs *et al* 1992). Attention is more often focused upon the anticipated benefits and problems of systems implementation and is less concerned with the more obscure or abstruse impacts which systems may have on organisations or individuals, especially where that impact may not

be direct or immediate. As a result, the gradual shifts in power that may follow the implementation of an ICT system are generally overshadowed by the apparent improvements in efficiency and effectiveness that are delivered by the system. For example, the implementation of open systems technologies in local government, while undoubtedly enabling much of the systems compatibility, enhancement, and user control that was intended, have also had the unanticipated consequence of further fragmenting departmental divisions and increasing the vulnerability of direct service organisations (Pratchett 1994).

At this stage it is important to note that the argument being developed here is not based exclusively in technological determinism. Rather, it combines elements of determinist and constructivist theories to offer a more sophisticated analysis of the relationship between politics and technology. It suggests that specific technologies do engender particular forms of politics, and do lead to particular processes and outcomes, and that to this extent they can be deemed to have a pre-determined political impact (for example, Winner 1986, Huigen 1993). A combination of the conscious and unconscious use of particular technological features leads to an implicit and covert form of determinism in which certain technologies come to symbolise certain types of political relationship (Pratchett 1995). At the same time, however, it also recognises that ICTs do not exist in a political vacuum, and that their impact is not a necessary or intrinsic feature of the technology. Consequently, the political processes that shape the development, implementation and use of technologies are as responsible for the impact of ICTs.

This brings the discussion to the central theme of the thesis. New ICTs are having profound and complex effects upon local government which are at once ambiguous, opaque and unexpected. But these impacts are not simply a product of the technology - they are also a consequence of the ways in which the technology is being deployed, and the political processes that shape the technology and its implementation in specific contexts. The principal hypothesis, therefore, and one which is of particular significance to the agenda of change in local government, is that these political processes are dominated by a closed network of actors who are focused specifically around ICT policy making in local government. In order to develop an understanding of change in local

government it is necessary to understand the significance of ICTs and their role in this change process - and to understand this significance, it is also necessary to understand the political processes and networks which bring about the adoption of some ICTs, and the rejection of others.

The object and scope of analysis

So far the discussion has provided a general overview of the significance of ICTs for contemporary government, and has indicated the relevance of this to the process of change and renewal that is occurring in local government. Before empirical or theoretical analysis of this subject can be effectively undertaken, however, it is necessary to offer more precise definitions of the technologies under analysis, and to identify the boundaries and scope of the argument. Such definitions are useful, not only to offer clarity to the discussion, but also to further emphasise the significance of ICTs to local government. It is only by delineating such boundaries that full conclusions can be drawn from the theoretical and empirical evidence that follows. Two separate clarifications are necessary: first, it is important to define the technologies that are the object of the analysis; and second, it is necessary to define more clearly the focus and scope of attention in relation to local government.

Defining the technologies

The term 'information and communication technologies' encompasses a wide array of complex and diverse artifacts that serve a number of disparate functions and which are based upon a number of distinct technological advances. At its broadest it can include advances in artificial intelligence and neural networks as well as such diverse artifacts as the silicon chip, magnetic media, fibre-optics and satellite technology. Any definition of ICTs that extends beyond a mundane description of specific hardware or software, therefore, is immediately problematic - defining ICTs becomes a matter of semantics, in which it is relatively easy to identify those technologies that clearly belong within the

definition, but considerably harder to delineate the boundaries and to state which technologies are excluded from the definition.

The reasons for this definitional problem are threefold. First, and most obviously, there is the diversity of technologies which potentially qualify for inclusion within the definition. These include, at the most obvious level, computer hardware and software, high speed digital telecommunications equipment, and digital (normally magnetic) information storage devices. But it can also include other 'hi-tech' artifacts such as cable and satellite television, video-cassette recorders (VCRs), virtual reality games (Schroeder 1995) and facsimile (Fax) machines (Street 1992). Furthermore, it may also include more traditional technologies such as telephones, and other forms of information collection, storage, processing, retrieval and transmission, especially where traditional and new technologies have been combined (for example, the advent of ISDN - Integrated Systems Digital Networks - combines traditional telephony applications with data and video capacities, by converting between conventional analogue signals and digital representations at the points of transmission and receipt). This diversity of both technologies and applications makes any definition inherently complex. While most would agree that computers are a fundamental form of ICT, there is less consensus over whether all applications of this technology fit within the definition: should computers that are designed specifically and exclusively for games be included within the general definition, and if not, on what grounds should they be excluded?

Second, the speed with which ICT developments are occurring brings into question any definition which is dependent upon specific artifacts, or which identifies some as being more significant than others (Abramson *et al* 1988). For example, despite the development of proprietary electronic mailing systems in the early 1980s (for example IBM's DISSOS), as Isaac-Henry (1993) demonstrates, the networking capacities of such technologies were considered largely inconsequential until the 1990s. Yet today the interactive capacities of the internet, and especially EMail (Electronic Mail) facilities that exist through the emergence of the 'information superhighway', are considered to be one of the most exciting and liberating features of contemporary ICTs (see, for example, McLennan Ward Research Ltd 1995; Percy-Smith 1995; Phillips 1995, Schalken 1997).

Similarly, technology which supports public information networks has only recently become of significance despite its existence for over a decade (Horrocks and Webb 1995). A further example of rapid technological and political change has been the sudden rise of surveillance technologies to combat crime and other social problems (Lyon 1993, Webster 1997). Rapid changes in both the capability and capacities of particular technologies, and in political and social attitudes towards them, makes existing technologies rapidly obsolete, and suggests that definitions which are dependent on artifacts will become increasingly anachronistic.

Third, and related to the previous reasons, definitions of ICTs are problematic because of the tendency of such technologies to become commodified, and thereby accepted into social, economic and political cultures. Technologies which at one point appeared to present radical, almost revolutionary advances for economic, social or political relations, rapidly become accepted and subsumed within the day to day activities of organisations and individuals, and so become the commodities of every day existence. Electronic calculators, video cassette recorders and Fax machines are all technologies which have at one point appeared to have a radical and transforming quality about them, but which have increasingly become accepted as part of the commodities of every day life. Once ICTs become commodified it is difficult to differentiate them as artifacts from other day to day technologies which would not fit within a traditional definition of ICTs (for example, commodified multi-media computers are sold alongside household appliances such as washing machines in many high-street stores).

The problem, therefore, is that in order to offer some clarity to discussions about ICTs it is necessary to be reasonably precise about the technologies under analysis, yet at the same time, general enough to encompass the wide range and rapid advancement in ICTs, and to take account of the changing economic, social and political environment in which they are emerging. This problem notwithstanding, a number of authors have offered working definitions of ICTs. Some offer deliberately superficial descriptions of generic technologies, while others focus more specifically upon the characteristics and applications of the technologies. A brief summary of each is useful in developing a definition that is more appropriate for the purposes of this thesis.

Superficial definitions of ICTs have been used by a number of authors to give a flavour of the technologies that they consider to be appropriate for inclusion, rather than to offer precise or exclusive boundaries. For example, the Trade and Industry Committee (1988) began its report on information technology (which implicitly included communications technology as well) by defining it as follows:

In broad terms, this [IT] means computers and communications. More precisely, information technology is concerned with systems which capture, transmit, process, store and retrieve information. Or, as one of our witnesses put it: "Information technology at its most simplistic marries the information processing power of the computer to the ability to disseminate the results widely through the use of telecommunications". (Trade and Industry Committee 1988, para 4).

Isaac-Henry (1993) adopts a similar definition for his summary of information technology management in the public sector:

The speed of change of its evolution makes it difficult to define but by IT we refer to the use of computers and telecommunications equipment to record, process, calculate and transfer information in the form of data, image and voice from one place to another and at great distances (Isaac-Henry 1993, p95).

Price Waterhouse, in their annual survey of information technology in various sectors, adopt a slogan approach to the definition which reflects their position as management consultants:

Information Technology is data processing; is automation; is communication; is recording; is knowledge; is artificial intelligence. Yesterday it was about managing experts. Today it is the very stuff of management. Tomorrow there may be little else that needs to be managed. (Price-Waterhouse 1993, p1)

Finally, the United States Congress Office of Technology Assessment provides what is probably the briefest definition of ICTs, before going on to make detailed recommendations on how these technologies can be used to enhance the delivery of federal government services. For them, information technology is: 'computers, advanced telecommunications, optical disks, and the like (*sic*)' (Office of Technology Assessment 1993, p1).

These definitions, while superficial in nature, do enable the identification of a number of common themes that distinguish ICTs. First, ICTs involve the effective combination of two very distinct technologies: computing and telecommunications. While this may

appear a somewhat banal observation, its significance should not be overlooked. The combination of two technologies which have traditionally developed in relative isolation from one another presents significant technical, as well as political difficulties. Add to this the fact that even within these two distinct categories there is a diverse range of technologies (for example, within computing there have been considerable parallel advances made in processor technologies, data storage devices, operating software and peripheral equipment) and it becomes evident that these definitions are acknowledging a complex and sophisticated fusion of previously disparate technologies. Second, each definition emphasises that they are specifically concerned with technologies that store, manipulate or transmit information, or accentuate the significance of information in other ways. The focus is on those technologies which deal with the less tangible resource of information, rather than those which affect the physical resources of organisations or individuals. Consequently, they are technologies which control, enhance, or otherwise alter the collection and distribution of information and knowledge throughout society. Finally, and more implicitly, these superficial definitions indicate that there is something 'new' about the technologies under analysis. Thus 'technology' is being used not to describe any artefact that has a computing or communications capacity, but is reserved to denote more exceptional, 'leading-edge' developments.

Within the limits of their purpose, therefore, these definitions attempt to capture the essence of the technologies, and to provide a clear indication of the types of technologies which meet the definition. What they do not do, however, is provide much assistance in defining the limits and boundaries of the definition, and hence, in indicating those technologies which exist on the borders of the definition and which may or may not qualify for inclusion. As a consequence they remain inherently ambiguous definitions.

An alternative approach to these superficial definitions of ICTs is to attempt to classify them into distinctive groupings of technologies. Laudon (1977) offered one of the earliest attempts at such a definition by identifying three 'families' of technologies which can be distinguished by their purpose rather than their configuration:

The basis of distinguishing among these technologies is largely social: each affords different kinds of people the opportunity to communicate with one another and, in general, to use information (Laudon 1977, p14).

His definition, therefore, goes on to distinguish between: **data-transformation technology** - computer technologies that are specifically aimed at 'the collection, storage, manipulation, and retrieval of very large information pools' (*ibid* p14); **mass participation technology** - broadcast and information dissemination technologies such as radio and television 'that function to transmit information from one central source to thousands or millions of people' (*ibid* p15); and **interactive technologies** - those technologies which allow a two-way or multi-directional flow of communication and information, and especially those which 'allow for horizontal communication flows among individuals and organized groups on a regular basis' (*ibid* p16). Laudon's classification is useful, not only because it focuses attention upon the purpose of ICTs rather than their technical configuration, but also because it draws clear boundaries around the types of technologies which are of interest. For example, the data-transformation family of technology clearly includes most forms of 'business computer', but excludes those that are devoted mainly to games - despite the fact that the two may be dependent upon the same physical equipment.

Another alternative approach is to concentrate upon the defining characteristics which distinguish ICTs from other technologies. In discussing a wide range of ICTs which they term 'the new media', Abramson *et al* (1988) justify a definition based around six characteristic properties:

...[R]ather than discuss the technologies one by one, we present readers with a workable set of generalizations about the cumulative impact of the new media environment as a whole; no single technology is crucial to the generalizations offered. ...six properties in particular are characteristic of the new media:

1. They explode all previous limits on the volume of information that can be exchanged.
2. They make it possible to exchange information without regard, for all practical purposes, to real time and space.
3. They increase the control consumers have over what messages are received and when.
4. They increase the control senders have over which audiences receive which messages.
5. They decentralize control over mass communications.
6. They bring novel two-way or interactive capacities to television.

(Abramson *et al* 1988, pp4-5)

This is a definition which has widespread appeal, because it gives an indication of what ICTs do, rather than restricting conceptualisation to sterile accounts of the complex configuration of technical components. It is of particular use here because it focuses attention on the impact of the technologies rather than their technical capacity, and has been adapted by a number of political science based analyses of ICTs (see for example, van de Donk and Tops 1992; Smith and Webster 1995). The problem with this definition is that it encompasses a broad range of computing and telecommunications artifacts, but does not acknowledge that some are of much greater significance than others.

This second group of definitions (those of Laudon, and of Abramson *et al*) offer a means of encompassing existing and future technologies in a framework that focuses upon their political context and effect, rather than the physical and technical components of extant ICTs. In particular, they can be used as a means of excluding artifacts from a definition, as well as including others, by offering a check-list of properties: if a given artefact does not meet with any of the specified properties then it clearly is not included within the definition: electronic calculators, virtual reality games, and so on, are implicitly excluded from the definition, despite sharing the same physical properties as other artifacts that are included. To this extent these definitions represent an advance on the more superficial definitions outlined above.

Drawing upon these classifications it is possible to arrive at a clearer definition of the technologies which form the focus of this thesis. The ICTs which are under analysis here are defined by two features. First, they are defined by their physical properties. Specifically they are the technological artifacts associated with computing and telecommunications which encompasses three discrete but related technologies. Most obviously this definition includes a full cross-section of computer technologies, from mainframe through to micro-computers, together with a range of peripheral devices attached to such platforms or associated with them: scanners, plotters, printers, controllers and other such technologies which assist in the capture, storage or retrieval of data, as well as those that enhance the security and integrity of that data. It also includes telecommunications technologies where they are linked either directly or indirectly to the information processing capacity of the organisation. Such systems may involve local and

wide area networks (LANs and WANs), and incorporate fixed-line, micro-wave or satellite transmission. The relevance of telecommunications to this definition is that they provide the link between dispersed computing resources. Thus, ISDN telephone networks are only included where they provide connections between computing facilities. Finally, the physical properties include the full range of software used in relation to the computing or telecommunication technologies of the organisation. This range covers operating systems, software development languages, and function specific systems whether they are standard packages or bespoke developments that are peculiar to the organisation. In short the focus of attention is on all aspects of computing and telecommunications which are employed by organisations to manipulate information. Importantly, all of these artifacts require an investment of resources that makes them recognisable organisational assets.

The second feature of this definition concerns the purpose to which such artifacts are put. Consequently, computing and telecommunication technologies are of interest only in so far as they capture, store, process, manipulate or transmit information as a direct function of the organisation. Such functions may include a range of organisational activities, from the relatively simple tasks of word-processing, through the more complex systems that control the operations of the organisation, to the sophisticated strategic management functions of the organisation. The defining characteristic here, however, is that the technologies are deployed to support or enhance existing functions of the organisation, or to engender new functional capacities. As a result the definition includes operational systems such as housing management systems or social service client information systems as well as the traditional computerised systems such as payroll and financial control, but also incorporates the more sophisticated applications which concentrate upon generating information for strategic purposes. While these more sophisticated applications may be a by-product of operational systems they are important because they focus attention upon the informatization capacities of particular artifacts. At the same time, however, the definition also excludes other artifacts which, although technologically sophisticated, do not directly support or enhance the functional capacity of the organisation. For example, computers devoted to energy management, building security and so on, are only of indirect relevance to the principal functions of local government, and hence, are excluded from the definition despite involving complex technologies for their operation.

The object of analysis, therefore, is those technologies which meet both features of this definition. The term 'information and communication technologies' (ICTs) will be reserved for those technologies that match both the physical properties and functional capacities of this definition.

The dual features of this definition are important not only for the technologies and applications that are included or excluded by it, but also because it implicitly draws attention to the politics of ICTs in organisations. It concentrates not only upon the physical properties of the technologies but also upon the purpose for which they are intended. Once it is accepted that technologies must be defined through their function as well as their physical characteristics then it becomes difficult to ignore the politics that influence their development and adoption in organisations. This definition, therefore, underpins this thesis in two ways. Its primary purpose is to assist in the determination of which technologies should be the subject of analysis. In addition, however, it acts as a further indication of the significance of the politics of ICTs in local government.

The scope of the analysis

The definition of ICTs developed above is a general one which could be applied across a range of organisations in the public sector and beyond. The scope of the analysis here, however, is more circumscribed. Two factors draw the boundaries of the analysis: the focus on British local government and the concentration upon information processing technologies as a sub-set of ICTs.

The focus on British local government is concerned with the principal units of elected local government in England, Scotland and Wales. That is, first and second tier local authorities in all rural and urban areas of Great Britain. In England this focus encompasses the 34 county councils, 238 non-metropolitan district councils, 36 metropolitan district councils, 33 London boroughs and the 46 new unitary authorities created by the Local Government Commission under the Local Government Act 1992, the last of which will come into operation in 1998 (Game 1997). In Scotland it encompasses

all 29 of the new unitary authorities created under the Local Government (Scotland) Act 1994 and the three continuing island councils which previously had been structured around 9 regional councils, 53 districts and 3 island councils. Similarly, in Wales it encompasses all 22 of the new unitary authorities created under the Local Government (Wales) Act 1994 which previously had been divided between 8 counties and 37 districts. Most of the empirical and analytical work undertaken in this thesis was conducted before the most recent reorganisations of local government in England, Scotland and Wales (1994-6). Nevertheless, the analytical focus and themes remain relevant to the new structures of local government, not least because the overall functional responsibilities and political issues facing local government in general remain largely unaffected by the reorganisation, although some functions have been moved to different tiers. All of these types of authority are included because they share a range of similarities in terms of constitutional status, size, division of responsibilities and overall structure. At the same time, however, it must also be acknowledged that there are important differences within and between types of authority which lead to a great deal of diversity in practices and customs (for a more detailed analysis of differences see Widdicombe 1986, ch 2). But for the purpose of analysing ICTs in local government it is evident that the similarities will provide for a common range of information needs and technological demands which outweigh the significance of any differences.

This focus also excludes a number of organisations which wider definitions may include within the system of local governance. The 9350 parish or community councils currently active in Great Britain (Wilson and Game 1998) are not the subject of analysis here, although there may well be value in analysing the impact of ICTs in this area of local governance as well. Similarly the growing number of non-elected public bodies at the local level (local quangos) are not included. Although it is acknowledged that there are significant problems in drawing clear boundaries around elected local government, especially where authorities have developed close links with other agencies for the delivery of services for which the council has responsibility, the primary focus of this thesis is around the central organisation of elected local government rather than those at the periphery or 'arms length'.

The focus upon information processing technologies as a sub-set of ICTs also requires explanation. To the extent that ICTs are the combination of two distinct technologies - computing and telecommunications - this thesis is concerned primarily with the computing elements of ICTs. Primary attention is upon those technologies that are used to manipulate information rather than those which facilitate its transmission. This focus does not deny the equal importance of the communications element of ICTs. Indeed, as much of the empirical and theoretical discussion which follows will demonstrate, it is becoming increasingly difficult to disaggregate the two elements of the technology as each is only of value in relation to the other. Rather, this narrowing of focus accepts the interdependence of the various technologies but concentrates upon information processing technologies as the main subject of analysis in order to enable a more detailed study of the influences on particular technologies to be undertaken. This analysis cannot and will not ignore the equal importance and increasing interdependence of other technologies in relation to computing resources. But it will use the concentration on information processing technologies as the primary focus for analysis around which a more detailed study of the influence on ICTs in local government can be developed.

The purpose of defining the scope of the analysis at this stage is to ensure that the focus on information processing technologies in elected local government is clearly articulated. This does not, of course, imply that the analysis will not draw upon sources from outside of this scope where they may inform the discussion. Neither does it imply that the analysis has exclusive relevance to those technologies and organisations that are defined within the scope of the study: much of the analysis may well be of wider relevance to other public sector organisations. But it does provide a focus for the study which enables more detailed empirical analysis to be undertaken in later chapters.

Finally, within the scope of analysis it is necessary to be clear about the political and ideological period in which this study is based. All theoretical, empirical and analytical development took place within the context of successive Conservative national governments since 1979 which had sought to radically alter the political and managerial landscape of local government, not least by emphasising the supremacy of market mechanisms over local democracy. The election of a Labour government on 1st May 1997

may place new emphases on the role and purpose of local government, and introduce new directions of change. This does not undermine the theoretical and analytical developments of the thesis, but it does require a line to be drawn at the end of April 1997 in relation to the application of empirical evidence.

The method of analysis

The chapters which follow this introduction further develop the hypotheses outlined above. That is, they develop the assertion that the future of local government is being inadvertently but irreversibly captured by a narrow group of actors - an ICT policy network - who define and determine ICT policies in individual authorities. Moreover, the development and implementation of these ICT policies, and the limited range of values and ambitions shared by the core actors in the ICT policy network, have profound consequences for local authorities. Most importantly, it places increasing emphasis on the service delivery capacity of local authorities and detracts from the other roles which they may fulfil in the emerging patterns of local governance. Ultimately, therefore, ICTs may serve to undermine the role and value of local government in a modern polity.

The following eight chapters address these hypotheses. Chapters 2, 3 and 4 develop the three principal arguments of the thesis. Chapter 2 provides an analysis of the relationship between political processes and new technologies by concentrating upon two converging perspectives. First it concentrates upon the main debates that surround the adoption of new technologies in organisations, and especially those that affect local government. This involves a broad cross-section of issues from a focus on the effect of technology on the organisation of work through to the broader relationship between technology and democracy. Second, the chapter focuses upon the emerging concepts of informatization and the information polity as a means of understanding the more complex relationships between new ICTs and extant political, economic and social institutions. The principal argument of this chapter is that ICTs have a complex array of implications for local government, and indeed for the broader UK polity, that are both profound and enduring. When placed in the specific organisational context of local government these implications

suggest a very different set of relations between extant organisations and emerging political and social institutions.

Chapter 3 is more concerned with the context of contemporary local government in Britain. It moves away from the direct focus on new ICTs to analyse six dimensions of change which have been directly experienced by local government over the last two decades: structural, organisational, functional, managerial, political and financial change. This typology of change not only demonstrates the extent and depth of change which has occurred, and continues to occur within local government, it also emphasises the extent to which change is extending beyond the conventional boundaries of local government and introducing a whole new pattern of local governance in which elected local government is but one element. The chapter argues, however, that there is no overarching strategy or 'grand design' for local government. Rather, there is a piecemeal and *ad hoc* process of reform in which ICTs are heavily implicated, and in which new technologies are inadvertently but inevitably shaping the opportunities for reform in the future.

Chapter 4 provides a synthesis of the previous two chapters by analysing the role and purpose of local government in relation to the extensive process of change and the effect of ICTs in this context. It argues that the traditional institutions of local government have the potential to fulfil three complementary roles connected with local democracy, public policy making and service delivery. The concern of this chapter is that although ICTs could be deployed to benefit all three, in the contemporary process of reform they are being used almost exclusively to support and enhance the service delivery functions of local authorities. In a political and economic climate which has favoured a diminishing role for local authorities in direct service delivery and encourages the development of partnerships through a wider concept of local governance, this is both short-sighted and ultimately dangerous for the future prospects of traditional local government. The chapter argues, therefore, that local government needs to examine more carefully the advantages and disadvantages of existing ICT policies and to consider the possibilities of finding radically different policies that support all three of its potential roles.

These three themes - the profound but complex significance of new ICTs to contemporary political, social and economic structures; the extent and range of changes occurring in elected local government and in the broader patterns of local governance; and the narrowing role and purpose of local government - set the context and provide the basis for a detailed empirical analysis of ICT policies in local government. Working from this foundation, chapter 5 begins the analysis of why ICT policies are emerging in the way that they are. It uses a policy networks approach to show how ICT policies are developed and constrained by a small group of actors who dominate the production and implementation of new technologies in local government. In developing a critique of the policy networks concept it acknowledges the limitations of the approach in order to provide a detailed analysis of how the general theory can be applied to the specific area of ICT policy making. The analytical framework developed in this chapter provides the principal subject of the empirical analysis which follows in subsequent chapters.

Having analysed in detail the context of ICTs in local government and established the analytical framework to be applied, chapter 6 develops a methodological framework which operationalises the principal propositions of the policy network concept. This involved a detailed case study of a metropolitan council in the north-west of England and the influence of the ICT network on its policies. Chapter 6 provides background information on the case study authority and details of the methodology applied: a combination of a quantitative 'interaction analysis' of the policy network and a more qualitative process of iterative and one-off interviews. It also offers a critique of the methodology by considering the extent to which the tools adopted enable effective analysis of the analytical framework, and by assessing the representativeness of the case study in relation to other local authorities in Britain. As a consequence this chapter provides the necessary detail to enable the experiences of the case study to be generalised, where appropriate, to the broader experiences of local government as a whole.

Chapters 7 and 8 apply the analytical and methodological frameworks to the case study authority. They analyse the findings from the case study across two levels. Chapter 7 concentrates upon the findings as they apply to the policy networks framework developed in chapter 5. It focuses first upon identifying the network actors and their attempts to

influence ICT policies. It then goes on to analyse the resource dependencies that exist between core actors and the ways in which these resources are exchanged in an interdependent but dynamic process of policy-making. Chapter 8 concentrates upon the findings as they apply to the policy outcomes of the ICT network. It centres the analysis around the formal IT Strategy review process of the case study authority and its impact upon hardware and software policies, in order to examine both the formal and informal policy outcomes of the ICT network. Consequently, the combination of these two chapters provides a wealth of empirical detail on both the structure and interdependencies of the ICT policy network, and its effect on policy outcomes in local government.

Finally, chapter 9 brings together the empirical analysis with the key themes developed in earlier chapters in order to reach a number of conclusions on the significance of the ICT policy network in local government. It returns the analysis to the main hypothesis: that the local government ICT network is having a profound but opaque effect upon local government which is both channelling ICT investments in support of service delivery but diverting attention away from other more complex, and ultimately, more important roles for local government. Drawing upon the empirical evidence analysed in earlier chapters it is able to infer a number of consequences for local government of the dominance of the ICT policy network over the strategic development of individual authorities. Thus, the final conclusions are able to demonstrate both the importance of the ICT network to local government and its consequences for the wider British polity.

THE POLITICS OF TECHNOLOGY

Introduction

In order to develop an analysis of the various influences on ICT policies and an understanding of the significance of these for local government it is first necessary to consider the broader relationship between politics and technology and to develop an appreciation of the importance of this relationship for social, economic and political change in general, and for public administration in particular. For most political scientists this relationship remains largely peripheral to the supposedly more important analysis of the distribution and exercise of power in particular socio-economic or organisational contexts (Horrocks and Pratchett 1995). As this chapter will show, however, such a marginalisation of the relationship between politics and technology is misguided. This relationship has profound implications for all aspects of social, economic and political development at local, national and international level. From the specific focus of this thesis the complex relationship between politics and technology also has important implications for the evolution of the institutions and processes which currently underpin local government. Technology both influences political processes and outcomes and, in turn, is affected by them. The two are intrinsically and inseparably bound together in an interdependent relationship.

The purpose of this chapter is to highlight the issues arising from a broader focus upon the political and organisational consequences of new ICTs in public administration, and hence, to provide a justification for analysing the rise of ICTs in local government. It will show that ICTs are not only important to the financial circumstances of individual local authorities, but that they also have significant implications for the organisational and political futures of local government. It will argue that the implementation of specific technologies requires inherently political, as well as technical, decisions and that these decisions can have far-reaching effects upon the management and organisation of local

authorities, and upon the broader political and social environment of local governance. The chapter will contend that the technologies currently being implemented will not only be influential in determining the future managerial and structural arrangements of local government, but will also have a significant influence over the very nature of democratic local government. The need to understand why and how particular ICTs emerge in local government is, the chapter argues, of fundamental importance.

From the outset it is important to recognise that this argument is not founded primarily upon contentions of technological determinism. It is not simply the case that there is an inescapable future towards which all technologies inevitably lead. There are choices to be made over the types of technologies to be used in society and the ways in which they are to be used. At the same time, however, technologies are not value free and do imply certain organisational, political and social futures. It is equally inadequate, therefore, to suggest that technologies are simply neutral or benign tools that can be used in a variety of ways for the political shaping of society (the arguments surrounding technological determinism, and alternative perspectives, will be considered in more detail in the following section). Politics and technology are inextricably linked.

This chapter explores the relationship between politics and technology by focusing upon two converging perspectives. The first reviews the general literature surrounding the politics of technologies. At this point, the analysis will not be limited to considerations of new ICTs, but will include more general theories of technologies and their relationship to social and political institution concentrating especially upon the key debates that inform an understanding of ICTs in local government. The second section moves on to a more specific consideration of ICTs as a unique form of technology with its own special and peculiar relationships to organisations and societies. It discusses the complementary themes of informatization and the information polity and their implications for extant organisational and political arrangements. The chapter moves, therefore, from the general discussion of technological politics to a more specific focus upon the issues raised by ICTs in public administration. In so doing it forms the basis of the more detailed analysis of ICTs in local government which follows in subsequent chapters.

Defining the relationship between politics and technology

The juxtaposition of technology and politics is not a recent phenomenon that has come about through the newly perceived importance of ICTs. A relationship between the two can be traced back to ancient Athens and Plato's desire to perfect the practical art of statecraft. According to Winner there exists a classic analogy, promulgated throughout history, which likens the construction of political institutions to other arts and crafts:

Much like architecture, weaving, shipbuilding, and other arts and crafts, politics is a field of practice that has its own distinctive knowledge, its own special skills. (Winner 1986, p46)

Plato argued that the skills and knowledge of political life were a 'techné' in their own right that demanded specialist abilities acquired through a heuristic view of citizenship. This led him to the conclusion that citizenship was a full time occupation that left no room for engagement in other crafts. Hence, 'he [Plato] excludes craftsmen from positions of citizenship, explaining that they already have an art that requires their full attention' (ibid, p41). While modern political theorists have rejected this limited definition of citizenship, the analogy of politics as a form of art or craft has persisted. Hence, the language of the practical arts has constantly been used to describe the evolution of political processes and systems. Metaphors drawn from science abound in the writings of political theorists such as Rousseau. Similarly, the founding fathers of the U.S. constitution considered themselves to be the 'architects' of a new and 'ingenious political/mechanical device' (ibid, p43). Even among contemporary political commentators the engineering metaphor holds good. Thus, in his discussion of the 'hollowing out of the state', Rhodes (1994) expresses concern over the future ability of governments to 'steer the system'. Indeed, the technological metaphor of 'steering' is at the heart of many discussions of contemporary political systems, especially in relation to the increased steering capacity that some new technologies facilitate (for example, Bekkers 1993, 1997).

On their own the use of engineering metaphors to describe political institutions and processes is unexceptional, and does little to define a real relationship between politics and technology. The real issue that emerges from such metaphorical descriptions, however, is that the language used is symptomatic of wider social and political cultures.

Stated simply, there is an extant socio-political system that is implicitly based upon a scientific/technical paradigm. This paradigm heralds all technologies as being politically neutral and considers them to be inherently benign and beneficent towards society. As Street argues:

It is not uncommon to find politicians who claim that the development of technology is crucial to securing economic growth and social well-being. It is not hard to see why this view carries some weight. At a superficial level, it accords with the way we often talk about the world, the way certain kinds of change seem 'inevitable', the way we embrace 'progress'. It also fits with the way we attribute 'responsibility' to technology. (Street 1992, p14)

The result of this paradigm is a society that believes in the triumph of technology over nature, and which makes an unequivocal commitment to technological advancement. This corresponds to Jacques Ellul's account of 'technique' as a mode of thought and action that is dominated by technological rationality. According to Ellul (1992) all human activities have now become dependent upon 'techniques' as part of a 'third age' which subordinates all social and political processes to the technical order. Fischer suggests that this paradigm is so deep-rooted in the history and practices of society that it forms a rationalist/neo-positivist epistemology that arrogantly claims to be the only basis of legitimate social wisdom:

The neo-positivist method is believed to be the only valid means of obtaining "true knowledge"... Not only is such knowledge seen to make possible the resolution of many of our economic and social problems, it also claims to facilitate the rational design of social systems in ways that enable us to better predict and manage, if not altogether eliminate, the persistent conflicts and crises that now plague modern society. (Fischer 1990, p42)

This epistemology does not deny the existence of political discourse, and acknowledges the possibility that some technological outcomes may attract substantial political interest. Its significance, however, is that it achieves a dominance over such discourse, limiting debate to those features that can be tested and proven through the positivist methodology. Fischer cites the example of political responses to the crisis over AIDS (Acquired Immune Deficiency Syndrome). The rationalist/neo-positivist response, he argues, is to pursue a 'technical fix' to the problem, rather than addressing its social and economic roots. Thus, governments invest in research to find a vaccine to the illness, rather than dealing with the more difficult social and human issues that may have caused and spread the epidemic.

The arguments of Ellul and Fischer may be somewhat overstated. While society may be formally structured around rationalist/neo-positivist principles, it is evident that, in practice, social and political activities often distort or ignore neo-positivist perspectives. Examples from organizational theory are among the best known: Simon's (1960) concept of 'satisficing' recognises the individual and organisational limits to rational decision-making, while Lindblom's (1959) account of 'the science of muddling through' represents an early (and extremely influential) demonstration of the extent to which individuals abandon positivist principles in favour of incrementalism (or 'successive limited comparisons'). More recently, within the world of ICTs, the rise of 'soft-systems methodologies' (Checkland 1981), and variations on it (for example, Hales 1991), have demonstrated the importance of discourse in relation to new technologies, and the need for more inductive approaches in the planning of technological advancements within organisations. Nevertheless, in accepting the argument that neo-positivism has formed the epistemological underpinning of modern social and political institutions, there exists a useful paradigm with which to consider the relationship between politics and technology. This paradigm suggests that where technology can enhance the rationality of decisions or strengthen 'technique' it will become increasingly important. New ICTs are particularly vulnerable to this neo-positivist paradigm, offering seemingly logical and rational solutions to previously incoherent and intractable policy problems. Indeed, Sclove (1992) argues that technologies exert a symbolic and cultural influence, as well as having a material impact upon society. It will be argued later that ICTs are particularly symbolic of this neo-positivist culture, and have great populist appeal because they offer greater rationality and improved 'technique'. The rationalist/neo-positivist epistemology, therefore, gives impetus to the technological cause, encouraging the adoption of technologies because of the rationality they bring to social or political processes.

While the rationalist/neo-positivist paradigm may help to account for society's infatuation with advances in technology, and its obsession with finding 'technological fixes' to social or political problems, it is of less value in helping to understand the impact which technology can have on social or political processes. In order to understand the relationship between technology and politics it is necessary to consider the various literatures that have attempted to understand technological change within the context of

the social and political processes in which it occurs. These literatures can be classified into three types: those which consider the impact of technological change at the level of the individual worker; those that consider, at a broader level, the arguments of technological determinism and social constructivism as competing perspectives on technological and socio-political change; and those which consider, at a still broader level, the rise of technocratic structures of government, and the significance of technocracy for the future of democracy. The remainder of this section will deal with each of these in turn.

Technology in the workplace

Historical concern over the relationship between technology and individuals in the workplace can be traced back, at the very least, to the industrial revolution, and the rise of steam-powered mechanisation in the new industrialised economy of the eighteenth and nineteenth centuries. The organised machine breaking of the 'Luddite revolution' in the early nineteenth century serves to highlight the fact that there was widespread disaffection for the new machinery, and a recognition that technology was having a profound effect upon their lives and livelihoods. For Marx, technology was fundamental to understanding class conflict, being something that workers should intrinsically despise because it provided the instruments through which capitalists could control the working class:

But machinery not only acts as a competitor who gets the better of a workman, and is constantly on the point of making him superfluous. It is also a power inimical to him, and as such capital proclaims it from the roof tops and as such makes use of it. It is the most powerful weapon for repressing strikes, those periodical revolts of the working-class against the autocracy of capital. (Marx 1984, p79)

These sentiments are echoed by Braverman (1974) who highlights the irony that machines enable humanity to better control their environments (a triumph over nature), but, within a capitalist economy at least, only at the cost of subjugating the vast majority of workers to the dictates and controls of machinery (and by implication, the individuals who control that machinery). Thus, Braverman argues that as machinery has developed there has been 'a step-by-step creation of a labor force in place of self-directed human labor' (ibid p194).

Consequently, technology is associated with the suppression and enslavement of workers, creating a consistent, homogenous and manipulable 'labour force' that contrasts with the varied, diverse and independent nature of work that preceded it. Technology is seen as increasingly abstracting workers from control over their own humanity.

The evolution of technology has not lessened such concerns in the late twentieth century. Zuboff (1988) provides one of the most detailed of contemporary analyses of the relationship between technologies and individuals in the workplace. Her account is firmly rooted in the traditional literatures on technology and employment, but her case studies concentrate upon the impact of new technologies in the modern work environment. Central to Zuboff's argument is the assertion that traditional work skills were based around a combination of physical effort and acquired knowledge (or know-how) that were not explicitly apparent to the individual worker, but were nevertheless the basis of the worker's expertise. She refers to such skills as sentient knowledge: a knowledge that can only be acquired through the suffering of physical effort and the conscious use of the senses to inform the skill of the worker. She contends that Taylorist principles of scientific management were designed to appropriate knowledge from workers and place it in the hands of management, thereby allowing management to control the skills of the individual. While such efforts have reduced the suffering of individuals in the workplace, she argues, they have also reduced the discretion and control of the worker over tasks, and have abstracted and isolated workers from the production process. Her case studies reveal a sense of loss and isolation among many of the workers interviewed. But, she argues, there has not been a general 'de-skilling' of the labour force. Instead, traditional skills based in sentient knowledge have been replaced by new 'intellective' skills. In the context of the pulp mills that she studied:

...the computerization process in these mills was undertaken in order to improve production control, process stability, and increase productivity. However, the new control technology had the parallel effect of informing the operators' task environment. Accomplishing work came to depend more upon thinking about and responding to an electronically presented symbolic medium than upon acting out know-how derived from sentient experience. (Zuboff 1988, p95)

Within manufacturing processes, therefore, Zuboff is able to reach some optimistic conclusions about the impact of new technologies on the worker. Workers are able to

replace sentient knowledge with intellectual skills. In relation to clerical and administrative work, however, her conclusions are less hopeful. In this type of employment, she observes, technology heightens the tension between managerial authority and the development of intellectual skills. The need for managers to retain authority, she argues, leads them to abandon attempts to use new technologies to enhance the inductive or deductive reasoning skills of the work force:

...the claims of authority can overwhelm the rational goals of implementation. Indeed, they can so inhibit thoughtful discussion and observation as to make it difficult to even recognize the technology's informing capacity and its related skill requirements. ...managerial authority, as it has developed over the past two centuries, appears to be inimical to the quality of organizational change implied by the cognitive and social-psychological conditions of wide-spread intellectual skill development. (Zuboff 1988, p217)

Whether Zuboff's case studies offer scope for optimism or pessimism is less relevant here, however, than her broader conclusion that the introduction of new technologies into all forms of organisation is having a profound and lasting effect upon individuals in the workplace, and is fundamentally transforming the ways in which individuals participate in, and contribute to, the organisations in which they are employed. Technologies are altering the skill base of workers, requiring not just different physical skills and abilities, but more importantly, different cognitive abilities based around intellectual rather than sentient knowledge. The informing qualities of many of these technologies means that the nature of hierarchical relations between managers and workers is also changing. The real message of Zuboff's analysis, therefore, is that new technologies are not simply leading economic and organisational transformation, they are also creating a deeply personal and individual ordeal that is being experienced in different ways across the whole of western society, and which strikes at the very heart of working life. Whether seen as good or bad, the consequences of new technologies for the worker are profound. This applies as much to the 2.2 million people employed in local government (Audit Commission 1995) as it does to other sectors of the economy.

Technological and socio-political change

Central to most discussions over the relationship between technology and politics has been the question of which influences the other. Does technological change define the boundaries and directions for social and political evolution, or is it the case that technology only has relevance within the social and political systems in which it is developed or placed? The crucial premise to be discussed here is the relevance of technological determinism as a means of explaining socio-political change, juxtaposed against models of rational choice made by society or by individual organisations.

Three perspectives are relevant in this context: that of technological determinism; the contrasting perspective of social, political or organisational choice (sometimes described as constructivism); and finally, the middle ground between the two that recognises the inter-relationship that exists between technological and socio-political change.

Technological determinism - At its crudest, technological determinism is the much discredited view that technology is largely autonomous of the social and political systems in which it emerges or is placed. As Street argues:

...technology acquires an independent momentum, which not only puts it beyond human control but which also allows it to order all human activity, including politics. ...Autonomous technical change occurs independently of outside influence. Technology appears to have a mind of its own, and as such is thought to be unstoppable. The direction of change is set by a logic, or rationale, which is peculiar to technology. (Street 1992, p23-24)

Following the writings of Jacques Ellul (1964) and Herbert Marcuse (1968), Street suggests that within this fundamentalist perspective on technological determinism the logic of technology is seen to pervade all aspects of society, reducing everything to the mastery of techniques through which social or political problems can be overcome. It suggests that such rationality is inevitable because of the predestined superiority of technology in being able to dominate and determine social and political structures. The determinist perspective argues that society in general, and organisations in particular, have no choice

but to restructure themselves around technology as it emerges. Scarborough and Corbett (1992), for example, illustrate this by pointing to the massive organisational arrangements that were required to run the first modern computer (ENIAC) for the US military. The introduction of mainframe computers to government in the early 1960s can be seen as having had a similar effect, requiring major organisational changes to accommodate the large new machinery that was installed. The key aspect of this deterministic fundamentalism, however, is that not only are individual organisations reshaped around emergent technologies, but also more general social and political processes, and most importantly, the policy outcomes of these processes. There is a causal relationship between the development of technology, the socio-political structures that emerge around this technology, and ultimately, the policy decisions that issue from these structures and processes.

Not all discussions of technological determinism adopt quite such a fundamentalist perspective. MacKenzie and Wajcman, for example, recognise that few would argue that technology is capable of determining all social and political outcomes:

It is usually admitted that we have options. We can, for example, choose between a society with greatly reduced working hours for everyone, and one with an elite in full-time work and a mass of permanently unemployed. But the range of options is limited, and limited by the new technology. It is the changes in technology that are bringing about the new 'leisure society', or 'post-industrial society'. Our human role is at best to choose the most civilised variant of this technologically determined new society. (MacKenzie and Wajcman 1985, p5)

In a similar vein, Street suggests the existence of a 'soft determinism', subscribed to by such authors as Bell (1973), in which technology sets the context and scope of political and social processes. In this perspective there remains a logic that demands technological progress, but which allows social and political choice within the limits of technological advancement.

Despite the emphasis upon 'soft', therefore, this version remains highly deterministic in its approach. It assumes that technology will set the context and boundaries for political decisions, defining the agenda and limiting the options. In Daniel Bell's vision of the

'post-industrial society', technocratic socio-political structures are the inevitable result of technological advancement:

The central point about the last third of the twentieth century, call it the post-industrial society, the knowledgeable society, the technetronic age, or the active society, is that it will require more societal guidance, more expertise. ...Inasmuch as knowledge and technology have become the central resource of the society, certain political decisions are inescapable. (Bell 1973, p263)

Consequently, while his vision does not deny the importance of political decisions (indeed, in the same section he argues that post-industrial society will engender more political decision-making), he sees these decisions as being framed and constrained by their technological context, and by the political and social structures that evolve from the development of technology.

From the perspective of the technological determinist, therefore, technology shapes, guides and determines politics. Winner (1986) has proposed an even 'softer' version of such determinism, that of 'technological somnambulism'. According to this sleep-walking view, technology is allowed to determine social and political processes and structures, because of the indifference which society pays towards the effects of technology. Society is aware of changes, but does not consider the consequences of these changes. Consequently, even in its 'softest' derivative the determinists believe that technology has an inexorable and ineluctable capacity to determine the structure and processes of social and political decision-making.

Constructivism and choice - The concept that societies or organisations choose rationally between different technologies according to the political effects that they require, is in direct contrast to the deterministic perspective. Unlike technological determinism, however, there is less consensus over the nature and consequences of choice perspectives. In their introductory essay, for example, MacKenzie and Wajcman (1985) do not bother to present alternatives to technological determinism, but satisfy themselves with presenting a critique of determinism which inevitably leads them to the conclusion that wider social, political and economic factors are of significance. Using technology in organisations as their point of departure, however, Scarborough and Corbett (1992) offer

'organisational choice' as a competing, but equally unsatisfactory perspective to technological determinism. Street (1992) prefers the term 'political choice' to highlight the fact that technology is largely anonymous and neutral, and is only given value by the social, political and economic context in which it is found. In this view, therefore, society makes choices about how it wishes to use technology based upon the effects that are anticipated of it. Although they all employ different terminology, the uniting feature of these perspectives is that they reject technological determinism, and offer an alternative view on the relationship between technology and politics.

Indeed, constructivist or choice perspectives appear to have emerged largely as a response to the over-emphasis that technological determinists gave to the inevitability of predestined social and political outcomes. Their aim appears to have been to redress the imbalance created by a concentration purely upon the deterministic qualities of technology. Consequently, at their most unrefined level, choice perspectives present a reverse argument to technological determinism: it is the social and political processes, and the economic context of these processes, that determines the use and development of technology. Employing the terminology 'the social determination of technology' Winner suggests that advocates of this perspective proclaim an obvious wisdom for it:

It serves as a needed corrective to those who focus uncritically upon such things as 'the computer and its social impacts' but who fail to look behind technical devices to see the social circumstances of their development, deployment and use. This view provides an antidote to naive technological determinism... Those who have not recognized the ways in which technologies are shaped by social and economic forces have not gotten very far. (Winner 1986, p21)

Whether based upon notions of social choice, political choice or organisational choice, therefore, this perspective can be seen more as a corrective to technological determinism than an alternative point of view to it.

Choice perspectives, of course, fit much more comfortably with the managerially dominated agenda of contemporary public administration. Within the objective, 'mission' orientated world of modern public administration, government departments or agencies choose between and utilise technologies strategically in order to achieve their goals (Audit

Commission 1990). The choice between policies is seen to be determined at a political level, while the methods by which they are to be delivered (and implicitly, therefore, the technologies through which they are to be implemented), are determined at a separate managerial level. Consequently, technology is seen as being inherently neutral and is only given value by the context in which it is used. Managerialist versions of the choice perspective, therefore, suggest that technology only becomes politicised when it fails to deliver the benefits anticipated from it (Willcocks 1992, 1994, Margetts and Willcocks 1993, Collingridge and Margetts 1994). In other words, it is only when policy is adversely affected by technological failure that it moves beyond the domain of organisational management and becomes of political interest.

Technological and socio-political determinism - It is clear that while both deterministic and choice perspectives possess elements of validity in their arguments, both are fundamentally flawed to the extent that they over-emphasise one or other factor as being the determinant of all technological and socio-political change. It comes as no surprise, therefore, to find that contemporary authors reject both in favour of eclectic perspectives that combine aspects of each. Scarborough and Corbett (1992) combine these aspects through a processual view, arguing that the relationship between technology and society emerges through the processes by which technologies are invented, exchanged and implemented. According to their framework, it is the interaction of society through different organisational and political structures at each level of the innovation process that both shapes technological evolution and is shaped by it. Hence, they argue that:

...through its inventions and combinations of knowledge, the technology process clearly does transform social relations and actions. It does so not directly through physical constraints, but by the creation of perceived utilities which induce its adoption and use. ...the useful aspects of technology are identified, defined and indeed contested, within specific social forms of organization, where economic criteria may be but one of a number of factors. (Scarborough and Corbett 1992, p7)

Writing from a predominantly organisational perspective, Scarborough and Corbett view the development of technologies, especially information related technologies, as being

intrinsically linked with wider organisational choices. Technology and politics become enmeshed through the different knowledges that are introduced into the technology process at different stages of its evolution.

This argument is similar to that of Michel Callon (1987). Callon's analysis of the development of the electric car in France centres upon 'actor networks', and their role in determining the problems to be addressed. He argues that in the development of the electric car (VEL) the engineers involved (from EDF - Electricité de France) made various sociological, historical and economic assumptions that took their development well beyond the realms of a merely technical remit:

EDF's engineers presented a plan for the VEL that determined not only the precise characteristics of the vehicle it wished to promote but also the social universe in which the vehicle would function. (Callon 1987, p84)

Thus, engineers made predictions about the changing nature of French society and anticipated (wrongly) a growing demand for such a vehicle. Their assumptions emerged from the various actor networks in which the engineers were involved, rather than being entirely driven by technological innovation. Callon's argument, therefore, rests on the assertion that technology does not develop in isolation from society, but carries with it the assumptions of the 'engineer-sociologists' who develop it. Like Scarborough and Corbett, he sees the evolution of technology as being an ongoing process among a variety of actors.

Street (1992) is also anxious to develop an eclectic view on technological and socio-political development that draws explicitly upon both determinist and choice perspectives. He argues that while many technologies may have their roots in the autonomous and independent laboratories of scientists, in order to be successful they need to achieve a wider social and political acceptance. Consequently, he argues for the notion of a 'feedback loop' in which the very existence of a new technology generates a need for it. He cites the example of the combustion engine which, he suggests, was not developed in response to any significant political or social demands, but once created, became a very dominant technology. In the context of ICTs, many technologies are introduced precisely

in order to encourage a demand for them. The introduction of government data networks in the UK and the USA is one example where the take-up of facilities has not been as high as initially expected, but which has nevertheless been justified on the basis of encouraging greater use of the technologies (Buckingham and Wyatt 1992). Consequently, social and political demand for particular technologies are important in both shaping them, and in establishing a momentum for them.

This discussion of determinist and choice perspectives on technological development provides an important underpinning to the arguments that will be developed in subsequent chapters. It will be argued later that ICT policy develops from the interaction of a number of interdependent actors who collectively form a highly integrated policy network focused around ICTs in local government. This policy networks argument rejects the extreme position of both determinism and choice theories, but accepts and acknowledges the contribution of each in developing an understanding of technological politics. Technological determinism, with its emphasis on the autonomy and independence of technological developments, emphasises the pervasive nature of new technologies, and highlights the largely unchallenged logic of technical advancement. This emphasis gives added impetus to the need to analyse the impact of all new technologies, especially ICTs. Its more extreme emphasis on the uncontrollable and irreversible nature of technology, however, is less useful. If technological development is proceeding down a predestined and inescapable path then there is little value in attempting to analyse the political and social processes that shape technology. It is only by acknowledging the importance of social, political and economic choices that progress can be made on understanding how and why technology emerges in specific ways, and has specific impacts. Choice perspectives, however, are equally limiting. In ignoring the momentum that builds up behind individual technologies, choice perspectives fail to acknowledge the implicit autonomy that technologies gain. A significant momentum can be identified in the more recent history of information and communication related technologies. The rapid expansion of the personal computer into every sphere of business life, and indeed into many areas of social life, is one example of a technology generating an increasing demand for more of itself, as is the recent explosion in the use of the internet. Winner's (1986) concept of technological somnambulism, therefore, provides a more appropriate metaphor

with which to understand the relationship between technology and politics. There are political choices to be made over technologies, but these are often taken in isolation from their broader context and impact, or dismissed as being inconsequential. It is this aspect of technological development that the policy networks framework will be employed to analyse and explain.

Technology and democracy

Related to the foregoing discussion of technological determinism and political choice perspectives is concern over the extent to which technology enhances or diminishes democratic structures and processes. If, as will be argued, democracy is implicitly affected and influenced by technological developments, then this clearly has significance for the analysis of ICTs (as a specific form of technology) in democratic local government. It is only by examining the relationship between technology and democracy at a more general level, however, that the full effect of ICTs on democratic local government can be explored later.

There are two concomitant aspects to the debate over technology and democracy. The first concerns the juxtaposition of technocratic and democratic structures, and the widely held belief that one structure precludes the other. The concern in relation to local government ICT policy making is the extent to which ICT decisions are the product of technocratic or democratic structures and processes, or indeed, enhance technocratic processes and structures. The second issue developing from the first concerns the proposition that individual technologies contain intrinsic political properties and qualities that automatically define wider social and political structures (Winner 1985, 1986). In the context of local government ICT policy making this concern can be translated into an argument that the structural properties of new technologies can have a profound influence over both the organisational and democratic futures of local government. This section will deal with each of these issues in turn.

The technocracy/democracy debate arises from the increasing technological sophistication of all areas of social and political life, and the corresponding perception that traditional democratic structures are incapable of dealing adequately with the issues raised by such sophistication. It is closely related to the neo-positivist rationality described by Bell (1973) and Fischer (1990), and to the emphasis upon 'technique' described by Ellul (1964 and 1992). Consequently, technocratic arguments focus upon the logical importance of technological advancement and the inefficiencies and inconsistencies of democratic decisions. As Wartofsky states:

Technological development, especially of high technology - has become a question of national and international - or transnational - policy and decision. It has become a central if not yet the dominant question in national and global politics, affecting the basic issues of *power*: political, economic, military and social power -thereby directly affecting the lives and future of people on a mass scale. Control and direction of this technology has therefore become a matter of much greater complexity and scope than it has been in the past - one may say that it has become a qualitatively different question than it has been heretofore. (Wartofsky 1992, p16)

Technocratic arguments, therefore, highlight the inability of ordinary citizens to comprehend or take meaningful decisions on the complicated phenomena that impact upon their everyday lives. Just as Plato viewed statecraft as a distinct skill which could not be combined with other crafts, so technocratic arguments suggest that many decisions are too important to be left to the whims (and inconsistencies) of the democratic process. They argue that experts in particular fields are much better placed to take the necessary decisions.

Technocracy is the logical extension of neo-positivist 'techniques', applying rational methodology to political and economic problems. Although the principles of technocratic thought can be traced back directly to the positivist utopia conceived by Saint-Simon and Auguste Comte, it is an American engineer, William Henry Smyth, who is generally credited with coining the phrase (Fischer 1990). Stated simply, technocracy:

...refers to a system of governance in which technically trained experts rule by virtue of their specialized knowledge and position in dominant political and economic institutions. (Fischer 1990, p17)

It concerns the evolution of 'knowledge elites' who dominate the decision-making processes in specific economic or political contexts. Every sphere of governance attracts its own set of experts (or professionals) who claim a monopoly of knowledge about the subject area, who generate the collective wisdom on policy in that area, and who preclude other perspectives from emerging. A classic example of technocratic policy making in the UK, and its faults, is provided by Dunleavy (1981) in his analysis of the dominance of high-rise housing in the 1950s and 1960s. A central theme of technocracy, then, is the importance of specialised knowledge which is vertically differentiated between professions. As will be argued in later chapters, technocratic perspectives fit very comfortably with the policy networks framework in which local government ICT policies are to be analysed.

For those committed to this positivist paradigm (and subsequent neo-positivist variations to it), democracy is a product of a bygone era which leads to fragmented and incoherent policy outcomes, and is highly inefficient in its use of technological resources. Democratic politics is seen as creating problems rather than offering a process for solutions. The inconsistent and inefficient policy outcomes of democratic processes are compounded by the fact that most people do not understand the complexities of the policies which they are choosing between, and are indifferent to the democratic rights afforded to them. For example, in defending local democracy in the UK Phillips (1996) is forced to concede that most citizens are more concerned with their own day to day existence than they are with the political environment which shapes that existence.

For many authors, technocratic and democratic structures of government are diametrically opposed to one another (for example, Fischer 1990, Ellul 1992, Fielder 1992). Hickman (1992), for example, highlights the 1960s debate in the USA between Emmanuel Mesthene and John McDermott as representing the extremes of the contemporary argument between technocratic and democratic structures. Despite the polarity of their positions, however, he argues that each extreme must now make some concessions to the other. Because of the complexity of modern life even the most democratic of structures must make provision for expert testimony. Conversely, contemporary accounts of technocracy must now concede to the legitimacy of political representatives in the policy

making process. Hence, Fischer's (1990) account of technocracy distinguishes between three tiers in the USA polity: first, a top echelon of political/economic elites who derive their position through (semi-) democratic or economic processes. This tier sets the context and agenda for policy decisions. Second, a technocratic strata of experts who enjoy relative autonomy from political or economic domination and who occupy a privileged position in society. This strata provide the knowledge base upon which policies are formulated and developed, and provide the route through which they are eventually delivered. Finally, there exists the depoliticised mass public who have no power or influence over policy outcomes, except through the very limited medium of elections. Within modern accounts of technocracy, therefore, politics plays a very restricted role in legitimating the authority of technocratic structures. Democracy becomes a very impoverished concept.

At this stage it is necessary to distinguish between technocracy as a normative description of policy making and technocracy as a theoretical model of governance. The former is concerned with describing the actual methods through which policy decisions are made, and is acknowledged here to have some validity in the context of ICT policy making in local government. The latter is a more contentious proposition, and has received much criticism despite its traditional appeal to utopian authors such as Bell (1973). It is useful first to dismiss the theoretical propositions of the latter before emphasising in more detail the value of the descriptive account of the former.

Technocracy, as espoused by neo-positivists, is firmly rooted in utilitarian approaches to social and economic life. That is to say, it presumes that there is one best policy outcome that is most beneficial, and that it is possible to logically and rationally identify the most appropriate method for achieving this best policy outcome. The public interest, therefore, is best served by the efficient and effective use of scarce resources. This inevitably leads to a form of technological determinism, in which technocratic elites determine policies on the basis of those technologies that can offer the most efficient and effective delivery of a policy, regardless of its consequences on less tangible issues such as freedom or equality. Efficacy becomes the principal objective of the technocrats, and technology the determinant factor. It is this emphasis upon efficiency and effectiveness that lies at the

heart of the tension between technocracy and democracy. To technocratic theorists, therefore, democracy is seen to be highly inefficient in its use of resources. What is more, democratic processes can be notoriously unfair and lead to very unequal policy outcomes. Consequently, for technocratic theorists, democracy is not only inefficient but also leads to inconsistent and incongruous policies. This is because technocracy is more concerned with policy outcomes than it is with policy processes.

For those who attempt to defend democracy against the onset of technocratic propositions, and indeed to defend it against the uncontrollable evolution of technology, it is the process of democracy that is most important. Following the political philosophy of Kant and Rousseau, Sclove sees the process of democracy as being vital to the political and social values of society:

...democracy is a necessary background condition for enabling people to develop individual moral autonomy, and to debate and decide together whatever else, aside from democracy, should matter to them. Democracy is in this sense a highest-order shared human value, because it is fundamental - crucial to formulating and realizing other values. (Sclove 1992, p143)

For Sclove, therefore, even the most complex technological problems should be subject to the democratic process. No technological solution, no matter how efficient, should be allowed to subjugate any aspect of democracy. Consequently, he advocates a model of technological democracy that only accepts those technologies which substantively enhance democracy, and which ensures that all technological changes are procedurally determined through democratic means. For those opposed to technocratic structures in principle it is not the policy outcomes that are significant but the policy process. Democracy is seen to have an intrinsic moral value that encourages citizens to look beyond their own peculiar needs to the wider needs of society. Thus, it is the educative process of democracy that makes it so important. Technocracy, as a theory of governance is unacceptable to most commentators, therefore, not because it delivers less appropriate policy outcomes, but because it undermines the very foundations of a civilised, democratic society, and subjugates the public interest to a series of utilitarian measures of efficiency.

As a description of the policy process technocracy is a much more powerful concept. In offering a descriptive account of the policy process it does not ascribe any normative values to technocratic structures, but provides a useful critique of contemporary government and the dominance of professional groups in setting the agenda and directing policy. In particular, Fischer's (ibid) account of a technocratic strata that shares power with a political and economic elite to the exclusion of all others, offers a worthwhile parallel to the policy network literature that will be explored in subsequent chapters. The close association between technocracy and technology makes it a particularly helpful analytical device in relation to information and communication technologies. As Hickman (1992) suggests, technology and technocracy are self entrenching, mutually encouraging the expansion or extension of the other. The more that technology is developed and implemented through technocratic processes, the more structurally embedded technocracy becomes: this fosters further technological innovation in support of technocratic structures. As a descriptive tool, therefore, technocracy suggests that ICT policies in local government will be determined by a technocratic elite and will support the long term interests of this technocracy. It further suggests that new ICTs are unlikely to enhance the democratic process in any substantive way.

The technocratic nature of technological policy making leads to concern over the second issue of this section, the structural nature of technology in relation to politics and democracy. This is based particularly in the arguments of Langdon Winner (1986), and concerns the extent to which technological artifacts engender specific forms of social or political organisation. Winner is concerned with the power and authority that derives from the deployment of technologies and the ways in which technology can lead to inherently authoritarian or democratic socio-political structures. His concern is the extent to which technologies are flexible enough to allow society to choose between various social and political consequences (an argument implicitly based in choice perspectives) and conversely, the extent to which they lead inevitably to particular forms of political organisation. He distinguishes, therefore, between two ways in which technological artifacts can have political qualities.

Firstly, he argues that apparently neutral technologies can be manipulated to achieve particular social or political outcomes. This is an argument founded implicitly in technological choice perspectives, and is based upon the assumption that technologies are flexible and multifarious in their impact. For this category of technology, its impact is dependent upon the social, economic and political context in which it is employed. Societies choose between technologies according to the types of social and political structures that currently exist, and the types of structural organisation that they desire. As Winner states, societies use technologies as tools for controlling and developing their socio-political structures:

The things we call 'technologies' are ways of building order in our world. Many technical devices and systems important in everyday life contain possibilities for many different ways of ordering human activity. Consciously or unconsciously, deliberately or inadvertently, societies choose structures for technologies that influence how people are going to work, communicate, travel, consume and so forth for a very long time. (Winner 1986, p28)

His argument is that technologies can be used to enhance the power, authority or privilege that some sections of society have over others. He uses a number of examples to illustrate the point that technologies can have variable effects according to the political purposes to which they are put. Hence, he cites the New York architect, Robert Moses, as a strong example of someone who consciously employed technology as a tool in social engineering. He demonstrates that Moses deliberately designed bridges that were exceptionally low in order to exclude public transport, especially buses, from parts of New York. In so doing, he was able to use the technology of the bridge, and the complex of other transportation technologies, in order to effect his own class and race biases. As a direct consequence of his bridges, only car-owning middle/upper class people were able to gain easy access to the parts of the city favoured by Moses. Winner acknowledges, however, that many technologies represent only sub-conscious political choices. He cites the example of agricultural technology, and its impact upon rural communities (especially rural employment), to illustrate the unconscious political choices that are often made by societies. In a similar vein, Sclove (1992) highlights the substantial social transformation that occurred in a small Spanish village (Ibieca) as a result of the installation of running water in the 1970s. He argues that these non-focal consequences have important structural

implications for social and political order that extend well beyond the immediate benefits secured by employing technology.

In paraphrasing Winner's first proposition here, his argument appears somewhat naive and idealistic in its use of choice perspectives. In reality, this is not the case. Winner explicitly acknowledges the fact that technological choices are constrained and inhibited by the choices that came before. At a more sophisticated level, therefore, his argument can be placed within the foregoing discussion of technocracy, accepting that technology both shapes and is shaped by its socio-political environment. It then becomes difficult to avoid the conclusion that although technologies may be inherently flexible, they will inevitably be used both implicitly and explicitly to enhance and reinforce the social and political cleavages that already exist (Ellul 1992, Durbin 1992).

The second way in which technological artifacts can have political qualities is much more firmly rooted in a version of technological determinism. Winner argues that certain technologies necessarily and unavoidably require particular social and political structures. He is particularly concerned to distinguish authoritarian technologies (i.e. those that engender a centralisation of technocratic or elitist power) from democratic technologies (i.e. those that allow a sharing of power throughout society). The classic example of an authoritarian technology, Winner argues, is the development of nuclear energy. In order to control this technology and prevent major ecological disasters, and indeed to protect against terrorist attack, a highly centralised and authoritarian command structure is required. In accepting nuclear technology, therefore, society must also accept the inevitability of an authoritarian political structure. Examples of inherently authoritarian technologies are not restricted to such controversial 'high technologies' as nuclear energy. Winner suggests that many widely accepted technologies such as railways and ships also require a centralised, hierarchical and authoritarian command structure in order to operate safely and efficiently. He moderates this version of technological determinism by arguing that technologies do not absolutely require particular political structures, but that they are nonetheless highly compatible with, and encourage the adoption of, centralised and hierarchical forms of political life. Authoritarian political structures are necessary if society wants to gain the full utilitarian benefits expected of technology:

In many instances, to say that some technologies are inherently political is to say that certain widely accepted reasons of practical necessity - especially the need to maintain crucial technological systems as smoothly working entities - have tended to eclipse other sorts of moral and political reasoning. (Winner 1986, p36)

The crucial issue at stake here is the flexibility and malleability of particular technologies. Winner argues that within a complex technological system, such as a communications system, some components of it will be more flexible than others. Indeed, few technologies, if any, exist in isolation. The problem is that those component technologies that do offer greater flexibility and social choice are over-shadowed by the more intractable and inflexible technologies that require an authoritarian political structure. The concern for Winner is that the authoritarian political structures of particular technologies cross over into the overall polity, inevitably leading to an anti-democratic, technologically directed society. This returns the argument again to concerns over the development of technocratic structures.

This distinction between types of technological politics - on the one hand social engineering, and on the other, inherent political structures - has great significance for the analysis of ICT policies in local government. It asks questions of the real purpose and impact of ICTs in government. Are information technologies the flexible tools which many claim them to be, or are they inherently inflexible, especially in the context of large-scale government projects? For example, Collingridge and Margetts (1994) demonstrate how the implementation of the Department of Social Security's (DSS) Operational Strategy exhibited many of the features of inflexible technologies despite the fact that it was based upon supposedly flexible information systems. The implication (although not explicitly referred to by the authors) is that the inflexibility of the DSS Operational Strategy inadvertently but inevitably recreated the centralised, hierarchical and bureaucratic nature of the DSS, and did little to deliver the utilitarian benefits of the whole person concept (the aim of uniting all benefit claims through one system). Elsewhere, however, others have shown that information technologies can be used to deliberately shape political and social relations. In a study of sheltered work places in the Netherlands, Bekkers (1993, 1997) offers an account of organisational steering through ICTs, in which central government have consciously used the implementation of new information systems to

enhance their control over the inputs and outputs of the work places, thus reducing the autonomy of individual centres. At a specifically organisational level Taylor and Williams (1993) examine the role of ICTs in assisting 'business process re-engineering', a further example of overt attempts to use technology to alter social and political relations (see also Taylor, Snellen and Zuurmond 1997 for other examples). In their comparative case studies of UK and USA telecommunications companies, however, they suggest that the ability of organisations to use technology in such a way is limited, and that the most successful use of information systems for business process re-engineering occurs where companies restrict their shaping activities to evolutionary rather than revolutionary change. The implication here is that the flexibility of ICTs has uncertain and ambiguous effects upon organisational and political relations, and that this uncertainty is best managed through smaller more focused projects within organisations. For the study of ICT policy making in local government, therefore, the issue to be addressed is the extent to which those shaping policy can use ICTs to effect particular democratic or authoritarian outcomes, and the extent to which the technologies chosen engender a particular political structure. It is possible that technologies aimed at enhancing local democracy, (for example, those information systems designed to decentralise services) are inherently authoritarian in nature, and can only militate against the democratic objectives of the policy (Pratchett 1995). New technologies, particularly ICTs, may have a profound effect upon local government at a deeply structural level that will inadvertently but irreversibly undermine the democratic foundations of local government. It is vital, therefore, that the processes through which ICT policies emerge are more clearly analysed, and are placed within the broader framework of technological politics.

Informatization and the information polity

The discussion so far has concentrated upon the political qualities of technology at a very general level and has highlighted the main issues that arise from an analysis of the relationship between technology and politics. Although this discussion has raised some important questions about the impact of technology upon democratic structures and the rise of technocratic politics, its scope is too broad to make all issues of direct relevance

to the study of ICTs in local government. Is it sensible to include examples from nuclear energy alongside examples of personal computing? Certainly there are some features that can be applied generally across all technologies, but at the same time, it is also necessary to acknowledge that ICTs have distinctive features that are not readily apparent in other technologies. New ICTs are fundamentally different from other technologies because they affect the process of communication and interaction between actors, and the flow of information throughout society (Van de Donk and Tops 1992). They are considered to be inherently flexible in their application being of equal relevance in a number of very different economic and social contexts. What is more, advances in the processing capabilities of computers and the extent and speed of modern telecommunication systems have the effect of radically altering traditional spatial or time constraints (Taylor 1994). Consequently, it is now necessary to narrow the focus and concentrate more specifically upon ICTs as a distinctive form of technology, and particularly within the context of British local government.

Information and communication technologies offer a wide range of applications in the context of local government. In their most simple form they offer specific applications to enhance the efficacy of particular government functions (Fitton and Tomkins 1990, Isaac-Henry 1993). It is here that most ICT investment occurs in local government, and where most policy network interest is concentrated. In advanced versions of these applications, such as OXCIS (the Oxfordshire Community Information System), they are also being used to improve the information flow to the consumers of local government services (Local Government Chronicle, 19 November 1993). In more adventurous projects ICTs are also being used by local authorities to take a more proactive stance on economic development by creating low-cost integrated telematics infrastructures for business and community groups in their areas. The Manchester and Kirklees host systems are among the leaders of such innovative applications (Ducatel and Halfpenny 1993, Ducatel 1994). Finally, ICTs are being used to actually increase the access of citizens to the democratic processes of local government and to increase citizen participation in local decision-making. These initiatives are concentrated around the concepts of teledemocracy and electronic town meetings (ETMs), although within the UK such initiatives are highly restricted (Bellamy, Horrocks and Webb 1994, Horrocks and Webb 1994).

The purpose of this section is not to concentrate upon these initiatives individually, as these have been extensively reviewed elsewhere (e.g. Laudon 1977, Danziger, Dutton, Kling and Kraemer 1982, Arterton 1987, McLean 1989, Van de Donk and Tops 1992, Bellamy, Horrocks and Webb 1994, Horrocks and Webb 1994) and are dealt with in more detail in chapter 4. Of more relevance here are the different agendas that are driving or repressing such initiatives, and the consequences of these agendas for democratic local government. Two such agendas will be considered. First, the managerialist agenda, which, it will be argued, is the wisdom that has hitherto dominated ICT policy in local government. Second, the contrasting agenda of informatization which is developing as an alternative theme in public administration (Bellamy and Taylor 1992). The issues emerging from these two different agendas will then be brought together through the emerging and overarching concept of the information polity (Taylor and Williams 1991, Bellamy and Taylor 1994), which places the emphasis firmly upon the importance of the information emerging from ICTs and the political significance of that information.

The managerialist agenda of ICT policy-making

The managerialist agenda of ICT policy in local government reflects broader changes that are occurring in the public sector in the UK and other countries (Pollitt 1990). In particular, the generic term 'New Public Management' (NPM) has been used to describe the various features of the managerialism that now pervades all aspects of public administration (Hood 1991). As Hood points out, NPM is not a coherent set of theoretical principles, but is more a set of broadly convergent administrative doctrines drawn from an amalgamation of public choice theories of bureaucracy, and business-type 'managerialism' based in Taylorist concepts of scientific management. Thus, NPM includes such doctrines as:

- A focus on 'hands on' professional management in the public sector, with managers being given greater discretion and freedom to manage, within explicit targets and performance measures.

- A disaggregation of public bureaucracies into semi-autonomous 'arms-length' agencies, with the complementary focus on input/output measures of organisational performance.
- An emphasis upon private sector management styles as the proven model of successful organisation, and the corresponding rebuffal of traditional concepts of public service.
- A stress upon efficiency and cost-effectiveness as the major ethos of the organisation.
- An emphasis upon the contracting-out of public services wherever possible, and the introduction of competition and quasi-markets wherever this is not feasible.

Despite its absence of coherence, NPM has attracted considerable attention in the UK.

As Rhodes points out:

This pot-pourri of ideas is here to stay for the foreseeable future because (and it is a significant feature of the new public management) it has a strong practitioner base. In Britain its exegesis lies not in the academic literature but in government publications and consultants' reports. (Rhodes 1991, p548)

Consequently, it is possible to identify its impact in every sphere of UK public administration. The 'Next Steps' initiative in central government, and the introduction of purchaser/provider splits in the NHS are examples of the disaggregation of services into agencies and the introduction of market principles into public services. Similarly, the Citizen's Charter initiative provides for a stronger concentration upon performance measurement, and a focus upon inputs and outputs. At an international level Osborne and Gaebler (1993) offer 36 service delivery options that are based in the doctrines of NPM, although their proposals have been treated with much scepticism by contemporary commentators (see, for example, Rhodes 1994). Examples of NPM also abound in local government, some driven explicitly by the ideological doctrines of central government (e.g. the local management of schools), but others clearly demonstrating the much broader managerial culture that now pervades local administration. The emergence of management development programmes as a major feature of local government training (e.g. Conway and Willcocks 1993) provides a good example of administrative developments that are

founded in NPM doctrines, but which cannot be traced directly to political ideology at either central or local levels. Indeed, the whole thrust of the enabling authority (Stewart and Stoker 1989) and the 'more business like approach' proposed in the 'Competing for Quality' white paper (Cm 1730) are based as much in a commitment to NPM doctrines as they are in the neo-liberal ideologies of recent Conservative governments (at least in so far as the two doctrines can be separated - Hood, for example, suggests that advocates of NPM claim that it is politically neutral). In terms of both the ways in which services are delivered and the ways in which they are managed, therefore, NPM has had a major impact.

Within the doctrinal framework of NPM, ICTs have flourished in local government. The rapid increase in ICT spending has been directed almost exclusively at achieving specific policies that emerge from NPM. New software systems have been justified on the basis of the efficiency savings that they can achieve (especially through the use of cost/benefit analyses) and much of the managerial restructuring that has occurred in local government has implicitly required ICTs. In particular, the contracting-out of services has required new contract monitoring systems. The local management of schools has seen major investments in ICTs to support the decentralisation programme. In Social Services departments Care in the Community has led to major new client information systems. In the implementation of the Community Charge, and subsequently the Council Tax, ICTs were seen as being so critical to the success of the projects that central government was prepared to subsidise ICT investments. Indeed, when viewed from the perspective of NPM, every area of local government is seen to benefit from the introduction of ICTs to enhance efficiency and competitiveness and to improve the quality of services to customers. New ICTs are proposed for functions as varied as general office automation (Grimshaw and Kemp 1989) and specific expert systems for the provision of welfare benefit advice (Dawson, Buckland and Gilbert 1990). In this respect ICTs are the tool for delivering the competitive, efficient and disaggregated services envisaged by the advocates of NPM. New public management acts as a catalyst for ICT investment, both encouraging investment in order to achieve managerialist goals, and directing it away from those functions where the benefits (judged on NPM criteria) do not match the costs.

At the same time, NPM can also be seen to be influencing the direction and scope of ICT investments and to be framing the shape of ICT policy more generally. Doctrines of NPM can be applied with as much vigour to ICT policy areas, as they can to more traditional areas of public administration. Consequently, considerable emphasis has been placed upon the development of ICT strategies in local government (Abbatt 1989, Audit Commission 1990, Hurford 1991). Local authorities have also been encouraged to 'outsource' much of their information systems provision - 'that is subcontracting IT activities, such as data centre operations or systems development, to third parties' (Earl 1991, p17) - a concept that gained further impetus as a result of the proposals for white collar CCT (compulsory competitive tendering) and the aim to put IT services out to tender early in this process (Cm 1730). Consequently, the provision of ICT functions and the development of ICT policies are themselves being subject to the doctrine of NPM.

The agenda of new public management, therefore, is important for the analysis of ICTs because it provides the foundations of the managerialist ethos that pervades all aspects of local government, not least the management and deployment of ICTs. Consequently, the ICT policy agenda is, itself, dominated by the wisdom of new public management. It emphasises the strategic importance of ICTs and the need for efficient and effective use of ICT resources. Consequently, within the NPM agenda, ICTs are deployed to improve the efficiency or competitiveness of an organisation - they are not seen to have a wider political or organisational impact. The development of ICT policies in local government is dominated by the doctrines of NPM. Furthermore, new public management provides the ICT policy network with a powerful source of legitimation for advancing its own interests. Because ICTs have in the past offered quicker and often cheaper means of administering functions, particularly in the processing of large clerical functions such as payroll facilities, ICTs are held up as being the principal means of achieving greater efficiency. Indeed, the Audit Commission has even suggested that local authorities can gain 'competitive advantage' through the effective use of ICTs (Hurford 1990). Actors in the ICT network, therefore, are able to use the doctrines of NPM to justify the continued expansion of ICTs in local government. From this perspective the managerialist agenda of NPM both underpins the value systems of ICT champions, and provides a powerful source of legitimation for their activities and investments.

The managerialist agenda is of limited value in the context of local government, however, because it fails to deal with many of the issues raised in the foregoing discussion of the politics of technology. It is based inherently within the neo-positivist epistemology described by Fischer (1990), and rejects the political resolution of problems in favour of the logic of rationality and competitiveness. It concentrates upon improving the methods by which functions and services are delivered to the exclusion of other factors. In other words, it concentrates upon what Ellul (1992) describes as 'technique'. Consequently, ICTs are seen by advocates of NPM as being the 'technical fix' for the inefficiencies of traditional bureaucratic structures. More importantly, however, NPM pays little attention to the three key issues raised by a discussion of the politics of technology. First, in the context of technology in the workplace, NPM is unequivocal: the sole purpose of ICTs is to improve efficiency and effectiveness. Any unintended consequences upon the individual worker are irrelevant to advocates of NPM, provided the overall efficacy of the organisation is enhanced. Second, in terms of the tension between deterministic and choice models of technological development, NPM falls decidedly on the side of choice models, assuming that ICTs can be rationally selected to achieve desired organisational outcomes. It assumes that competition between disaggregated agencies in both the public and private sectors will automatically encourage the efficient use of the most appropriate technologies. For NPM, therefore, the market place is the determinant of ICTs. Third, in relation to the very real concerns over technology and democracy, NPM has very little response. If anything, it implicitly enhances the technocratic nature of policy making by arguing that policy decisions should be made by organisations, and be mediated through the market place. Advocates of NPM would defend democracy by arguing that a competitive market place provides the best mechanism for determining the needs of consumers, regardless of the commodity that they are receiving. Most importantly, therefore, advocates of NPM have a view of democracy that does not correspond to the more developed definitions of democracy that most critics of technocracy work with.

The Informatization Agenda

Informatization offers an alternative, and increasingly important agenda for conceptualising the increase and impact of ICTs in public administration to that provided by NPM (Bellamy and Taylor 1992, 1994). To begin with, it is more explicitly focused upon information flows within and between organisations, and the technologies that support or vary these information flows. Of equal importance, it also shifts the focus away from individual and isolated ICT initiatives, and takes a much broader perspective. It concentrates upon the wider and more qualitative impacts of ICTs on intra- and inter-organisational relations, and indeed, upon the political and social impacts of the changing information flows that emerge from the informatization process. Informatization, therefore, offers a powerful alternative agenda to new public management.

Informatization refers to the increasing importance of information to organisations, especially government, and the processes by which information is given meaning in a social, political or organisational context. As Bellamy and Taylor argue:

The term 'informatisation' is used in the recognition that public services organisations - and thus the administrative apparatus of the state - are becoming strategically and centrally dependent upon the changing flows of informational resources which are made possible by the powerful combinations of information and communications technologies. (Bellamy and Taylor 1992, p29)

Central to the informatization process is the rearrangement of information flows between various actors. Consequently, this process covers a wide range of factors, from an interest in the individual technologies that collect, store, retrieve, process or transmit information, through to a broad concern with their impact on organisational or social structures and cultures. A major product of the informatization focus, therefore, is an awareness of, and a concern for, the shifts in power that occur as a result of changes in information flows. While not entirely discounting the role of NPM perspectives on the management of ICTs, the informatization debate leads the agenda away from the restricted scope of technological choice, and offers a much more qualitative consideration of the broader issues that emerge from a focus upon the changing role of information in government.

Informatization is a term that is being used increasingly in discussions of contemporary government processes, but is rarely defined in any detail (e.g. Muid 1992, Hood and Margetts 1993). Frissen (1992) offers one of the few detailed definitions, based upon the work of the influential Tilburg-Rotterdam research program on 'Informatization in Public Administration'. He describes informatization as 'a complex of phenomena related to the introduction of information technology in (government) organizations' (1992, p3). His definition distinguishes between five elements that collectively summarise the informatization agenda:

- a. The introduction of information technology to shape or take care of the information retrieval process by means of automated information systems...
- b. The (re)arrangement of information flows and information relationships on behalf of the administrative or management information process...
- c. The adjustment or change of the organizational structure in which information technology is introduced...
- d. The development of information policies as a differentiated area of decision making in the organization...
- e. The introduction of specific expertise in the field of information technology through functionaries or consultants with specific tasks in this field.

(Frissen 1992, pp3-4)

For Frissen, all of these elements are of equal significance, and contribute equally to the informatization agenda. New ICTs are important because they shape and influence the information flows and relationships, leading to new intra-and inter-organisational forms, and radically influencing the relative power of actors. While it is necessary to acknowledge the relevance of all elements of informatization, however, it is the last two elements of his definition that are of particular interest here, particularly in the context of the foregoing discussion on technological politics.

The informatization agenda is concerned particularly with distinguishing information as a policy area in its own right. To some extent this echoes the NPM agenda which recognises the strategic importance of information and calls for information systems (IS) strategies as a means of maximising the information resource. But here the similarity ends. Informatization is not simply calling for a recognition of the strategic importance of information, it is also highlighting the impact which changing information flows can have on power within and between organisations. While managerialist frameworks

presume that this impact can be rationally directed according to the strategic plans of the organisation, informatization acknowledges much more explicitly the indirect consequences of new information systems in shifting the balance of power between actors. Informatization offers a perspective with which to analyse the full importance of information and the non-focal (Sclove 1992) impacts of new technologies. Hence, Pratchett (1994b) has shown how, in the field of education, ICTs have been at the heart of central government initiatives to shift power away from local education authorities (LEAs), and to focus it much more in the hands of the DfEE (Department for Education and Employment). New ICTs have been used to change the flow of information from its traditional tripartite basis (between school, LEA and DfEE) to one based solely on school-DfEE links, effectively marginalising the information role of LEAs in the education policy area. The informatization agenda identifies information policy within and between organisations as a critical factor in understanding contemporary government. In so doing, it automatically brings technology to the fore, and raises questions about the impact of ICTs on democracy.

The final element of Frissen's definition concerns the role of expertise in influencing the technologies that process and disseminate information, especially in the form of 'functionaries or consultants' (ibid). This expertise is closely associated with the world of ICTs, and consists of analysts, programmers and a range of other technical staff, combined with consultants, who collectively control the technological means for collecting, processing and distributing information. As Frissen argues:

This expertise is related to a specific set of professional and scientific values and norms which do not always correspond with the organization's dominant values and norms. (Frissen 1992, p4)

In other words, these experts are dominated by the neo-positivist epistemology which encourages a relentless pursuit in favour of increased technological efficiency, and by a technological paradigm, in which their future in the organisation (and presumably their careers generally) depends upon the continued dominance of new technologies in the information process. An important feature of this element, which is not articulated by Frissen, is that the very position of such experts in relation to organisational information

means that these 'functionaries' not only control existing flows of information, but also dominate the information future of the organisation, both internally and externally. The determinism of this technological paradigm may not necessarily fit very comfortably with the wider purposes of organisations, especially government organisations, but the dominance of these experts over ICTs, and hence over information policy, means that such tensions are pushed off the agenda. Informatization provides the opportunity for exploring and analysing the tension between the information experts and wider organisational goals. The argument that will be developed in later chapters focuses very much on this feature of informatization. It will argue that there is a closed network of actors who dominate the information policy process through their control of technological policies in local government.

A distinctive feature of informatization, therefore, is that it views the relationship between technology and politics as a process. It does not see the introduction of new ICTs into organisations as discrete events which have discrete and manageable consequences, but offers a multi-dimensional perspective which allows for both intended and unintended consequences to be considered as they emerge over time. It accepts that achievements in one dimension may well create tensions along other dimensions, and provides a framework in which all dimensions are given equal status. As regards the increase of ICTs in local government it accepts the validity of the managerialist agenda which is driving technological change, but highlights the very serious political consequences of such change that emerge from analysis along the other dimensions of informatization. It draws attention to the consequences of new or rearranged information flows, and the changing power structures that emerge from such change, and it highlights the significance of a technocratic elite that shapes the flow of information within and between organisations.

Unlike NPM, therefore, the informatization agenda does not attach any predetermined values to ICTs, and does not prescribe their application. The informatization agenda recognises the increasing importance of information flows within and between organisations, and the significance of the technologies that shape and influence these flows. It provides a framework with which to consider the broader political, social and

organisational impacts of new ICTs and the changing flows of information that emerge from them. It does not attempt to recommend the best solutions to information problems, nor indeed to successfully identify those problems in the first place. Instead, it offers an analysis which is focused explicitly around the importance of information, and especially the changing flows of information, and which encompasses a complex of phenomena, from individual organisational behaviour (for example, Henderson 1993) through to broad models of public administration (for example, Hood and Margetts 1993). The value of the informatization agenda is that it provides an analytical framework for studying the emergence of ICTs in local government, rather than a prescription for their deployment.

Local Government in the information polity

Although not directly related to the informatization agenda, the concept of an 'information polity' (Taylor and Williams 1990 and 1991, Bellamy and Taylor 1994) has emerged as a complementary theme. In common with the informatization agenda, the concept of the information polity again stresses the overarching significance of information to contemporary society, and the importance of ICTs in shaping and delivering that information. It recognises the fundamental importance of ICTs to contemporary government, and the flows of information that emerge as a consequence of their deployment. Thus, in introducing the concept of the 'information polity', Taylor and Williams argue:

More profoundly still, computer networking is beginning to provide a set of new technological and informational infrastructures as a consequence of which long-established organizational structures and processes are being challenged. A new public administration is being forged and new information flows, and the computer networks which facilitate and mediate them, are fundamental to that innovation process. (Taylor and Williams 1991 pp171-2)

In its very use of the term 'polity', the concept also recognises the political significance of information, and the political, social and economic consequences of technologies that radically alter the flow of information. In the information polity, information, and hence the technology that advances it, is inherently political. Like informatization, therefore, the

information polity accepts a multi-dimensional perspective of ICT development, and the tensions that may emerge as a consequence of their deployment.

Consequently, the information polity is to be distinguished from informatization, not so much by its content as by the level of analysis that it focuses upon. As Bellamy and Taylor argue:

Whilst the informatization perspective has as its primary focus the development and use of information in public services, the concept of the information polity emphasizes the role of information in the changing system of relationships which is emerging in and around government in the information age. (Bellamy and Taylor 1994, p2)

Informatization focuses particularly upon ICTs and the importance of information at the level of organisations. While it recognises the significance of broader inter-organisational impacts, its main concerns remain at the level of individual organisations. By contrast, the information polity inverts this focus, and concentrates particularly on the broad structural impacts of new technologies and information flows, and is concerned much more with the wider effects of the informatization process in and between various organisations. As Bellamy and Taylor (op cit) argue:

New information resources and new information flows are profoundly implicated in the changes which are beginning to give definition to the emergent 'information polity': changing horizontal and vertical relationships within government; changing inter-governmental relationships; changing relationships between managements, suppliers and customers; and changing relationships between citizens, politicians and the state. (Bellamy and Taylor 1994, p2)

The information polity, therefore, stresses the broader structural impacts of the informatization process, and concentrates upon the changing political and social configurations that emerge as a consequence of them. It is concerned with broad patterns of social and political relationships, and the implications of change for the distribution of power between groups, rather than in the minutiae of individual organisational impacts.

Unlike informatization, the concept of the information polity also emphasises the role of government in relation to the development of information systems at an organisational,

national, and indeed, international level. Informatization is equally relevant in both the public and private sector: Zuboff's (1988) analysis is concentrated in a number of privately managed organizations; the Tilburg-Rotterdam project, however, is focused exclusively upon informatization in public administration (Frissen 1992). By contrast, the information polity is explicitly centred around the political and social implications of the 'information age', and automatically raises questions about the role of governments within the polity. Hence themes such as globalization (Clarke 1993), trans-national data protection (Raab and Bennett 1994), and the development of a European Nervous System (Ridge 1994), all call into question the role of governments in controlling, regulating, and indeed contributing to, the development of the technological and political environment of the information polity. Consequently, the rapid emergence of an increasingly complex and influential information polity is demanding that governments give due consideration to their role within it. In the UK, central government's response has been limited (see, for example, CCTA 1994), but in the USA, a much more thorough analysis of the opportunities is underway (see, for example, Office of Technology Assessment 1993) although many of the dangers continue to be ignored.

The emergence of a political system centred around information, and the communication of that information between organisations, governments, economic sectors, and nation states, raises questions about the role and impact of the information polity in relation to local government: do the institutions of local government have a role to play in the new information polity, and conversely, what is the impact of the information polity on local government? These questions warrant some attention here.

The ability of local authorities to contribute to, and participate in, the information polity derives from their unique access to and control of a wide range of information about their own locality. This includes both discrete data sets such as the electoral register or property information contained in the Council Tax register, and more interpretive information provided from the main functions of local government. For example, through the information held on social services client information systems, local authorities have the potential to generate a unique picture of the social (and economic) composition of large parts of the local population. Similarly, through educational records, local

authorities have the potential to profile the future economic, social and political possibilities of their localities. On their own, such information collections are of limited value, but when combined and integrated through the informatization process, they become of disproportionate value to the local authority. Hence, Hepworth (1990) has talked of the 'information capital' owned but not realised by local government, and has speculated on the potential for a 'municipal information economy' (Hepworth 1992), in which local authorities participate in local economies by selling their information services.

Hepworth's propositions contain great potential for local authorities to contribute to the information polity, but only in a very narrow way. Hepworth's concepts of 'information capital' and 'information economy' are based explicitly in the public choice theory of new public management (see particularly Hepworth 1992) discussed earlier. Such accounts place too much emphasis upon the efficacy of local administration, and pay insufficient attention to the democratic role of local government. If local authorities are to participate effectively in the information polity as the democratic institutions of their localities, their role must extend beyond that of economic transactions to one of providing and governing the information infrastructure of their locality. Their role is not simply one of collecting and marketing information services. Local authorities must also consider the social and economic consequences of the information polity, and use their informational resources as a new means of government in the public interest. This could involve such schemes as the redistribution of information between groups (e.g. Horrocks and Webb 1994).

This, of course, highlights the other side of the question posed earlier, that of the impact of the information polity on democratic local government. The issue here is that 'information' is not a homogeneous entity. Information can encompass entities as disparate as the national housing situation and the performance of staff in an individual housing office of a local authority. The NPM agenda places emphasis upon performance measurement, and plays down the more qualitative information analysis that local authorities could engage in. The danger of this for local government is that it will become more transparent to other government agencies, and less capable of controlling its own participation in the information polity. Under the NPM agenda, the information polity has the impact of diminishing the scope and role of local government.

The implications of the information polity for local government is uncertain. Whether optimistic or pessimistic, however, there are two key issues to emerge from this discussion. First, because of their unique access to, and control of, local information, local authorities do possess the potential to participate actively in the information polity, especially (although not exclusively) in relation to their own localities. Second, and emerging from this first issue, the technologies through which local authorities participate in the information polity will be vital to their emergent role within it. If local authorities remain within the NPM agenda, and concentrate ICT investments on delivering administrative efficiency to the exclusion of all other factors, then their role within the information polity is likely to diminish. The challenge for local government, therefore, is to find ways of using new ICTs to enhance their participation in the information polity. This brings into fresh relief the issue of who determines the ICT policies of local government, because those who control ICT policy will effectively control the role of local government in the information polity. Hence, the principal assertion here is that ICT policy has a profound affect upon the participation of local government in the information polity, and that this in turn, will have long term implications for the democratic future of local government.

Conclusions

This chapter has reviewed a large literature on technological politics. It has progressed from a broad discussion of the relationship between politics and technology, to a concentration upon the information polity and the role of local government within it. In following this route the main purpose has been to show that technology generally, and ICTs in particular, have profound implications for extant social and political institutions, especially local government. Thus, it has shown that technologies are fundamental to the shaping of social and political structures, and that developments in one are inextricably linked with changes in the other.

In following this route it has touched upon a number of important issues which demonstrate that ICTs are important in local government for reasons other than merely

financial, and which will underpin much of the case study analysis to be undertaken in subsequent chapters. First, it has shown that technology has a great impact upon the experiences of individuals in the work place. The impacts of different ICTs on public administration are not only changing the ways in which citizens interact with public organisations, they are also having a significant effect upon the experiences of individual workers, profoundly changing the way in which they relate to their work. This may ultimately undermine the sense of 'public service ethos' that is commonly thought to underpin the values and belief systems of those working in local government (Pratchett and Wingfield 1994 and 1996) and other public sector institutions, and which provides the necessary cohesive force between disparate services in a functionally differentiated polity (Smith 1991, Plowden 1994). Consequently, it is important to analyse ICT policy making in local government, in order to further the understanding of the changing nature of local government service.

Second, this chapter has shown that technological and socio-political change are inextricably linked, and that it is not possible to consider the development or change of one without the other. It has rejected crude models of technological determinism and socio-political choice in favour of the more sophisticated 'process' related models of contemporary authors. At the same time, however, it has also acknowledged the problem that technological decisions, especially those related to ICTs, are often taken in isolation from broader social or political objectives. Consequently, Winner's (1986) metaphor of 'technological somnambulism' has been employed to explain the ways in which ICTs have achieved an inexorable and relentless momentum that is having profound but largely ignored social and political consequences. Hence, distracted by the dreams (or nightmares) of NPM and the quest for the ever-increasing administrative efficiency expected of ICTs, local government policy makers sleep-walk through the broader consequences of their technological decisions, oblivious to the irreversible social and political change that may greet them when they eventually awake. Within this metaphor, analysis of ICT policy making is more than simply Freudian dream analysis. It is an attempt to awaken the somnambulist before the damage of sleep-walking becomes irreversible.

Third, the tensions between democratic and technocratic political structures have been highlighted. The argument presented here is that technologies, especially ICTs, engender and support technocratic and authoritarian polities. The neo-positivist basis of technocratic elites encourages the development and implementation of ICTs that reinforce the social and political cleavages that already exist, further undermining the democratic process. Consequently, some ICTs are seen as having inherently political consequences which automatically determine their application in social or political contexts. For those concerned with the technocracy/democracy debate, therefore, a different technological agenda is required if democracy is to be rescued from the technocrats. The implications for the case study to be pursued later are twofold. On the one hand the local government ICT policy network can be seen as a blatantly technocratic policy making structure, which is shaping and influencing (if not entirely capturing) the future of local government. On the other hand it is necessary to analyse the decision-making processes of this technocracy if alternative and more democratic possibilities for ICT policy making are to be considered. In other words, attempts to use ICTs to recover local democracy (e.g. Bellamy, Horrocks and Webb 1994) must explicitly address the inherently technocratic nature of ICT policy making if they are to enjoy any measure of success.

Fourth, ICT policy making in UK local government is being implicitly shaped by the neo-positivist principles of the NPM agenda. The managerialist perspective, which subjugates local authorities to the role of service providers and administrators, neglects the democratic role of local government. Although the activities of NPM include many aspects of informatization (for example, in combining previously differentiated data sets), its agenda is very different, and it ignores many of the issues that are central to that of informatization. The implications of the technologically led transformation that is currently occurring in local government can only be properly understood, it is argued, within the broader context of informatization, which stresses the political and social consequences of changing information flows. In relation to the local government ICT policy network, the issue here is whether the policy process is being driven by a predominantly managerial or informatization agenda. It is a supposition here that it is the NPM agenda that predominates.

Finally, within the context of the discussion over managerialist and informatization agenda, the concept of the information polity has developed. The key issue to emerge from this is that local government does have a significant contribution to make to the information polity, but its ability to participate will depend upon the use to which it puts its extensive and exclusive information resources. This, in turn, is dependent upon the ways in which local government makes use of ICTs in relation to the other governmental and extra-governmental agencies that participate in the information polity. Consequently, the argument returns again to the factors that shape ICT policy in local government, and particularly the ICT policy network. It also raises questions over the role of the ICT policy network in the information polity.

This chapter has made the case for analysing the factors that influence local government ICT policy making by demonstrating the pervasive and profound significance of these technologies not only to local government, but also to wider social and political structures. It has reviewed the key themes that surround debates over technological development, and has provided a base from which to engage in more detailed analysis of local government ICT policies. But so far the discussion has been largely concentrated at an abstract level of analysis. The following two chapters, therefore, relate this general discussion of politics and technology to a more specific analysis of ICTs in local government. Chapter 3 considers the context of contemporary local government by developing a typology of change which takes explicit account of the effect of new technologies on organisational structures, processes and relations. Chapter 4 builds upon this typology of change to consider the ways in which ICTs may be supporting the evolution of local government in some directions and preventing its development in other directions. In particular, it argues that ICTs are being used to support one vision of local government as service provider to the exclusion of other potential roles. In providing a broad analysis of the politics of technology, therefore, this chapter has developed some core themes which underpin the more specific analysis of ICT policy making in local government which follows. From this position it is now possible to move on to the more direct analysis of change in local government and the role of ICTs in effecting and inhibiting such change.

3.

THE CONTEXT OF CONTEMPORARY LOCAL GOVERNMENT

Introduction

The context of contemporary local government is one which is dominated by extensive and unrelenting change. Most, if not all accounts of local government over the last two decades, and especially since the election of a radical Conservative government in 1979, have concentrated upon the endemic nature of change and its likely consequences for the political and organisational context of local governance in the near future (compare, for example, Stoker 1991, Cochrane 1993, Leach *et al* 1994, Stewart and Stoker 1995, *inter alia*). The reasons given for such an extensive and prolonged period of change vary greatly, from assertions that there has been a coherent 'new right' assault on local government (for example, Moon 1993, 1994) through to arguments that reject political ideology in favour of more structural explanations of change such as that offered by post-Fordism (see, for example, Stoker 1989, Stoker and Mossberger 1995). Not all change has been externally driven, of course. Many local authorities have worked within the constraints of central government legislation to find highly innovative ways of developing, managing and delivering services. The fact that every local authority is a unique political entity in its own right (Stanyer 1976) means that a great deal of political, managerial and organisational diversity remains across local government. This diversity is reflected in the different ways in which changes have been implemented and in the different organisational structures that have emerged within local government. Consequently, claims concerning the eventual outcome of change vary greatly, from accounts that foresee the gradual demise of local government (Money 1996) through to pronouncements of the emergence of a renewed and revitalised local democracy in which traditional local government forms the centre of a new system of community governance (Stewart 1995). But despite widespread disagreement over both the causes and the consequences of recent

changes there exists a broad consensus that the political and organisational context of local government is being radically reshaped.

On its own this consensus is of little value to the analysis of ICTs in local government beyond accepting that various technologies may, in some way, be part of the process of change. To understand the full significance of ICTs to the extensive process of change it is necessary to look in more detail at both the range of dimensions in which change is occurring, and to analyse them in the context of the underlying values and purpose of local government in modern society. It is only by clarifying these issues that the relevance of ICTs to the various dimensions of change, and indeed to the overall process of change, can be properly understood.

This chapter argues that there has not been a coherent pattern of change in local government over the last two decades: rather, there has been a wide range of changes which emerge from different ideological and political agendas and which address different perceived problems. On its own this assertion is neither exceptional nor particularly revealing (see, for example, Marsh and Rhodes 1992, Leach *et al* 1994, Stewart and Stoker 1995). But the obverse of a coherent process of reform is an *ad hoc* and thereby disjointed set of changes which is liable to introduce tensions and conflicts. This chapter develops a typology of change which examines the different types of change affecting local government and considers the tensions and opportunities which they create. It argues that the disconnected nature of local government change has important implications for the development of its institutions, and for the role of ICTs within it.

The need to find some coherence in the disparate patterns of change and reform endured by local government over the last two decades has led to the increasing use of the term 'local governance' to describe and analyse the emergent structures of sub-central government. But governance has ambiguous and imprecise meanings in different contexts (Rhodes 1996). For some, 'local governance' is used in an empirical sense to distinguish the organisationally fragmented structures of agencies that now populate the world of local service provision from the previously homogenous structures of traditional local government (Wilson 1998). It should be noted, however, that local service provision has

never been the sole preserve of elected local government - Local quangos, voluntary organisations and private sector companies have always played a part in local service provision (see for example, Stanyer 1996). The empirical difference that makes the term 'local governance' currently attractive is the extent to which it is now perceived as being the main organising principle for many services. For example, Stoker (1997) draws upon the collected work of the ESRC Local Governance Programme to argue that governance involves multi-agency partnerships, a blurring of responsibilities between public and non-public sectors, a power dependence relationship between organisations involved in collective action, the emergence of self-governing networks and the development of new governmental tasks and tools. This approach uses 'local governance' to emphasise the different ways in which services are now organised, the different actors that are now involved, and the different steering mechanisms that need to be employed to govern local communities. Others, however, use 'local governance' as an analytical device to highlight the patterns of association and structural links that provide for coherence and coordination between different organisations and agencies in the same policy area. Rhodes, for example, argues that 'governance defined as self-organising interorganisational networks does help us to understand change in British government' (Rhodes 1996, p666). By using governance as an analytical tool, he suggests, it enables policy makers to focus upon the ways in which such networks should be controlled and steered. Similarly, Lowndes and Skelcher (1997) use the term 'local governance' to analyse the different modes of governance that may be employed to manage multi-organisational partnerships and the different implications of these for individual and organisational behaviour in partnerships. This approach, therefore, sees governance as a heuristic device for understanding the complexity of specific policy areas rather than as an empirical observation of changing organisational structures. Finally, it is necessary to acknowledge that 'local governance' can also have normative connotations, being associated with the capacity of particular organisations or political entities to govern effectively in their localities. Much of the literature on urban regime theory adopts such a normative approach in so far as it seeks to analyse and explain the conditions in which political and economic coalitions can most effectively govern (see for example, Elkin 1987, Stone 1993, Harding 1994). Thus, there is a normative distinction to be drawn between good and bad governance.

Each of these three approaches to the concept of 'local governance' is useful in so far as it illuminates particular features of the changes that are occurring, the processes and structures which are emerging, or the value systems that underpin them. If the term is to be effectively used, however, then it is necessary to be clear about the different meanings that it conveys and the context in which it is being applied. This thesis employs the term 'local governance' in its empirical sense: that is, as a means of contrasting the emerging structures and processes of multi-organisational partnerships and collaborations with the conventional institutions which dominated traditional accounts of local government. To the extent that conventional accounts concentrated upon the internal structures, processes and mechanisms of local government, so the use of the term 'local governance' is used here-in to emphasise those structures and processes which require the collaboration of several fragmented agencies to effect a particular policy.

Although the concept of local governance provides a useful frame of reference with which to make sense of the full range of changes that have occurred in local government, it has the danger of imposing too much coherence and structure on what was a disjointed and highly differentiated process of change. This chapter reasserts the argument that there has been an absence of coherence in the change process which has been compounded by the lack of an over-arching vision for the role and purpose of elected local government in the modern polity. It concentrates upon the six dimensions identified in chapter 1 to develop a typology of change which is capable of emphasising both the scope of change and the role which ICTs have played in facilitating, steering or confounding it. By concentrating upon each of the dimensions in turn - structural, organisational, functional, managerial, political and financial change - it is possible to analyse both the links between various types of change and the tensions and contradictions which they introduce.

Structural change

Of all the changes affecting local government, structural reorganisation has been one of the most recurrent but least radical of dimensions. Far from resolving the structural inadequacies of local government, the 1974 reorganisation (under the Local Government

Act 1972) attracted immediate criticism for being too remote and centralised, and the two-tier system which it perpetuated was felt by many to be confusing and complex to administer (Byrne 1983, Chandler 1988, Leach 1993). Subsequent attempts at partial restructuring have been similarly problematic. As a consequence, structural change has never really left the local government agenda and it is little surprise, therefore, that restructuring has been a recurrent theme for all major political parties, ranging from the 1974-9 Labour Government's proposals for organic change (Cmnd 7457), through to the 1983-7 Conservative Government's abolition of the GLC and Metropolitan Counties in 1986 (Leach and Game 1991, Hebbert and Travers 1988) and the most recent reorganisation of local government in Scotland (Local Government (Scotland) Act 1994), Wales (Local Government (Wales) Act 1994), and non-metropolitan England (the Local Government Commission created by the Local Government Act 1992). The more or less continuous restructuring of local government has prompted some more cynical observers to observe that structural reform is a means of deflecting attention away from the more pressing needs of local government, especially in the aftermath of the poll tax (community charge) debacle (Butler *et al* 1994).

Three key observations emerge from this dimension of change. First, structural change has been largely conservative in its approach. Restructuring have not sought to change the fundamental nature of local authorities or their underlying ethos. Rather, they have sought to achieve marginal gains by redefining boundaries and redistributing functions and responsibilities between tiers. Indeed, it is possible to identify strong elements of continuity in the incremental process of recent restructuring initiatives. For example, despite the detailed and extensive reviews carried out by the Local Government Commission, large parts of rural England remain largely unaffected by the review while major cities such as Leicester and Bristol regained the unitary status which they lost in 1974. Second, despite the conservative and incremental approach of structural change all reorganisations have been largely unsuccessful in their outcome. The most recent reviews have been particularly unpopular (see for example, Leach 1994, Wilson 1996) and although no political party has yet pledged to engage in another review it is clear that the latest structures are unlikely to remain unchanged for too long. In other words, structural change is likely to remain a significant item on the local government agenda for the

foreseeable future, despite the inability of governments to arrive at a successful formula for determining a suitable structure. Finally, and most significantly in the context of this thesis, the value of ICTs in facilitating more radical structural change has been neglected or overlooked by all reorganisations of local government, including the most recent ones. Despite an early acknowledgement by Sir John Banham (then chair of the Local Government Commission) of the potential for ICTs to overcome existing temporal and geographical constraints in the governance of localities the Commission appears to have paid little attention to them in making its final recommendations. In Leicestershire, for example, the Commission's final recommendations (Local Government Commission 1994) only refer to ICTs in relation to their contribution to the overall indirect costs of the councils covered, and not to their potential to facilitate change. Indeed, the costs associated with implementing new ICTs, and in transferring existing systems between old and newly created authorities, appears to have encouraged an incremental and conservative approach to restructuring rather than to have facilitated a more radical overhaul of local government structure. New computer systems were estimated as being among the biggest transitional cost for authorities, second only to staffing costs (Blundell *et al* 1994). Structural change, therefore, does not make effective use of new ICTs. Rather, such technologies appear to provide additional constraints on the process of reorganisation.

Organisational change

While structural change is concerned with the external shape of local government organisational change is concerned with the internal structure of authorities and especially with the attempts of successive Conservative governments since 1979 to introduce market disciplines into local government. From a narrow focus organisational change is concerned with the introduction of competition, especially through the use of compulsory competitive tendering (CCT). Beginning with highways and buildings maintenance in 1980 (Local Government, Planning and Land Act 1980) CCT has been gradually expanded to encompass a full range of local government functions which since the Local Government Act 1992 has included white collar services. Running in parallel to the increasing development of CCT (and to a more limited extent voluntary competitive

tendering - VCT) has been the broader concept of the enabling authority and the emergence of new structures of local governance. Although initially associated with the minimalist and residual models of local government advocated by the new right (Ridley 1988, Mather 1989), the enabling concept has rapidly developed to encompass more expansive models of enabling which define a more complex and sophisticated role for local government as community governance (Brooke 1991, Stewart 1995). As a result, enabling is seen to lie at the heart of the strategic choices now facing local authorities (LGMB 1993, Leach *et al* 1994).

The implications of CCT and the enabling concept for the internal organisation of local government are substantial. As Greenwood and Wilson note:

the development of CCT has had a major impact on the internal management of local authorities, leading to reorganisation of both departmental and committee systems to distinguish the client and contractor roles. ...some of those authorities at the forefront of contracting, such as Berkshire and Westminster, have also experienced some of the most radical reorganisations of internal management structure. (Greenwood and Wilson 1994, p412)

As well as introducing a number of operational changes (for example, the separation of client and contractor roles in most services, the increasing dependence upon service specification and contracts, and so on) CCT has also brought a number of new actors into the world of local government. By November 1993 one third of contracts in England and Wales were let to external contractors although these accounted for 82 per cent of the contracts by value (LGMB 1993). Furthermore, the general trend is away from direct service provision. By 1996 this had grown to 40 per cent of all contracts, accounting for 25 per cent of contracts by value (Wilson and Game 1998). In other words, an increasing number of local government functions are being undertaken by actors outside of the political influence of local government, in the private or voluntary sector. There is no reason to assume that this position is likely to change greatly in the near future. Organisational change, therefore, has had a profound effect not only upon the internal structures of local authorities, but also upon the actors that populate those structures.

The ICT implications of organisational change are potentially immense. At one level ICTs have been vital for the implementation of CCT by allowing an effective division of client and contractor through information systems which enable both day to day operations to be undertaken (for example, the issuing of job tickets from client to contractor) and for the detailed monitoring of contract performance (Audit Commission 1994). All aspects of CCT have information systems associated with them (Greenwood 1994). Indeed, competitive tendering has been one of the top three 'issues affecting IS/IT policy' in every SOCITM (Society of Information Technology Managers in Local Government) survey since 1987, although the focus has shifted somewhat in recent years away from supporting CCT in other departments and towards the imminent implementation of CCT within IT. Thus the 1995 SOCITM report points to competition as being the biggest single issue concerning IS/IT managers at present, identified by 41 per cent of their respondents. Furthermore, it is also likely that the innovative use of ICTs to implement client/contractor systems may be at least partly responsible for the 6 per cent efficiency savings accredited to CCT by Walsh (1991), although there is no empirical evidence to substantiate such claims. Finally, the changing demography of direct services bought about through competition introduces new actors who may make different technological demands, and who may bring with them different assumptions about the role of ICTs in the management of organisations. In short, among other effects, CCT introduces potential new influences on the local government ICT agenda.

At a broader level ICTs are more intrinsically bound up in the emergence of the enabling concept, especially for the more expansive models associated with the community-oriented roles (see Leach *et al* 1994, Stewart 1995). The community-oriented role requires local authorities to develop at least three types of information system to support their more extensive and pro-active role in the community. The first involves the creation of formal system links with other public, voluntary and private agencies to enable efficient and effective information exchange with them. Without such links the capacity of local government to act as the coordinator of disparate community activities would be significantly compromised. The second involves the development of broader information systems which will facilitate the community focus of the council, through both the collection of information relevant to this role (for example, economic statistics) and its

subsequent dissemination to various groups and individuals through such technologies as citizen information systems (Bellamy *et al* 1995). The third entails the adoption of technologies which will involve citizens more directly in local affairs by developing a more participatory form of local democracy (FITLOG 1994, Horrocks and Pratchett 1995). Although few local authorities are actively pursuing any of these technologies they are vital if local authorities are to achieve a role that is anything more than the residual one prescribed by Ridley. This is a theme that will be returned to in the next chapter.

Functional change

Functional change is closely related to the organisational change associated with CCT and the advent of the enabling authority. Alongside the formal and strategic changes occurring in the organisation of authorities have been changes to the functions and responsibilities of local government. Some changes have led to a diminution of local government powers and responsibilities, the most radical of which have occurred in education. Among other features the Education Reform Act 1988 devolved powers to individual schools through the local management of schools (LMS), enhanced the authority of boards of governors, created the opportunity for individual schools to 'opt-out' of LEA control by offering grant maintained status (GMS), and introduced a national curriculum (Ranson and Thomas 1989). Although the most radical features of these reforms have been somewhat blunted in the last couple of years - for example, fewer parents than the government hoped for have opted for grant maintained status for their children's school (only 1180 schools by 1997) despite strong incentives to do so, and the recent review of the national curriculum by Ron Dearing reduced the number of core subjects and returned greater discretion to schools over subject content (Ranson 1995) - they have nonetheless had a profound impact upon the functions and responsibilities of LEAs. The devolution of financial controls to individual schools coupled with the increased powers of boards of governors over school policies and activities, has fundamentally altered the relationship of LEAs with individual schools. In particular, the quasi-democratic nature of governing bodies provides an alternative source of legitimacy for schools which challenges the traditional dominance of LEAs and reduces their role to that of offering support services to schools.

This diminution of local government functions and responsibilities in relation to education is important because this area traditionally accounted for the largest single portion of local government expenditure. For example, in 1980 education accounted for 41 per cent of local government revenue expenditure (Byrne 1983). Although education still accounts for 38 per cent of local authority revenue expenditure (Sanderson 1995) local authorities have lost the ability to determine how most of this is spent. This has 'knock-on' effects for all central services, including ICT developments. Furthermore, the decline of local government influence over education has been compounded by reforms to the post-16 education system. The establishment of Training and Enterprise Councils (TECs), and the removal of polytechnics and colleges of further education from direct local authority control have all further reduced the powers of local government in relation to education. It is difficult to escape the conclusion, therefore, that under the Conservatives the functions and responsibilities of local education authorities declined.

Not all functional changes, however, have had the effect of removing powers or responsibilities from local government. Indeed, some reforms have enhanced the responsibilities of local authorities, although these have normally involved significant changes to local authority functions in the process. The most notable of these have been in the provision of personal social services where the 'Care in the Community' initiative (primarily the National Health Service and Community Care Act 1990) has increased local authority responsibilities for the elderly, mentally ill and handicapped. Similarly the Children Act 1989 increased the functional responsibilities of local authorities for children. At the same time strong incentives have been created to reduce direct provision of services by local authorities and to encourage voluntary and private organisations to become more involved in these functions. Consequently, the responsibilities of local authorities for aspects of the personal social services have increased significantly, but their functional involvement in them has diminished.

Two competing, though not necessarily incompatible, trends emerge from the functional changes being experienced by local government. The first is one of fragmentation (Alexander and Orr 1993, Alexander 1991). As Alexander observes:

The change that has taken place is from the provision of services through a vertically integrated hierarchy to their delivery by a series of more or less autonomous agencies loosely linked in a local network of service provision. (Alexander 1991, p69)

This new local network, he argues, differs from the traditional local authority in three ways:

First, the network is a complex organizational form in which there is an equality of autonomy among its various elements... Second, decision making and service delivery are increasingly dependent upon the exercise of influence and the use of negotiating skills... Third, decisions and services emerge from a series of separate and largely independent bilateral relationships and there may be no obvious or naturally occurring opportunity for comprehensive needs assessment and inter-service co-ordination and integration. (Alexander 1991, p70)

The implication of such fragmentation, therefore, is that the capacity of local government to co-ordinate local services is diminishing as it becomes increasingly dependent upon a myriad of contractual relations with external agencies (and internal contracting arms) for the provision of services.

The second trend, however, is one of partnership in which the multi-agency delivery of services becomes an accepted feature of the community oriented enabling authority. As Leach *et al* (1996) demonstrate, although there remain considerable tensions between the fragmentary forces of recent legislation and the integratory objectives of community oriented local authorities, the apparent fragmentation offers new opportunities for local authorities to adopt a more central role in local communities. By developing effective partnerships local authorities are able to take advantage of new resources and to influence external agencies in new ways. At the same time, however, this also requires the development of new skills among both officers and members.

The ICT implications of functional change are similar to those necessary at the informal level of organisational change. The need is for more sophisticated systems that provide operational links within partnerships in order to facilitate functional efficiency. The opportunity exists for local authorities to invest in technologies which would make them the fulcrum of local service provision by providing the necessary co-ordination between

disparate agencies. Much of the residual role of LEAs has concentrated around such functions, for example, by co-ordinating school bus services. For this potential to be properly developed, however, local authorities need to become more aware of the importance of the information which they collect, and to seek new ways of exploiting it to ensure that they are at the centre of community activities rather than the periphery.

Managerial change

The rise of the new public management (NPM) over the last two decades complements the organisational and functional changes discussed above by providing a set of organising principles in keeping with the broad thrust of other reforms. Unlike other types of change, however, it has not been ushered in by hotly contested legislation, and has not been strongly opposed by either politicians or officers. Nevertheless, the changes heralded by NPM have been of a comparable scale to organisational and functional reforms, and have had an equally radical impact upon local government. Thus, NPM represents a new orthodoxy which provides an underpinning managerial ethos for the more visible types of changes occurring throughout the public sector.

The ICT implications of managerial change are to some degree linked to those of organisational and functional change. Indeed, to the extent that CCT and other changes are dependent upon a complementary change in managerial ethos and practice it is difficult to disentangle managerial change from the other more visible categories. Nevertheless, it is possible to identify a number of ways in which ICTs support and enhance the move towards NPM, most importantly, through the development of increasingly sophisticated management information systems (MIS) and executive information systems (EIS) (see, for example, Hooks 1995). Such systems concentrate upon enhancing vertical information flows to ensure that managers at all levels of the organisation have the necessary information to manage effectively. Operational systems are increasingly designed to provide for both the functional administration of services and the aggregation of managerial information at various levels of the organisation. New ICTs are particularly useful in providing the types of quantitative measures of performance that

emerge from the application of NPM in a variety of functions. These range from simple measures of customer contact (for example, time taken to deal with an enquiry, number of enquiries dealt with and so on) through to the more complex quantification of service performance (for example, number of building repairs completed within agreed time scales, costs per type of repair and so on). The 'hard' data required for such measures is easily extracted from operational systems and makes ICTs an invaluable tool for NPM.

Political change

Political change is concerned with the changing political legitimacy of the institutions of elected local government in relation to the advent of local governance. In particular, it is concerned with the rise of local Quangos and the 'new magistracy' which challenge the authority of traditional multi-purpose local government in specific functional areas, and the parallel emergence of alternative forms of accountability that challenge the conventional mechanisms of representative democracy. Thus, it is concerned with the changing nature of elected local government as the institutional location of local democracy (Pratchett and Wilson 1997). This is not to deny that other issues in local politics remain important. The intensification of political partisanship since 1974 (Gyford and James 1982), the changing patterns of party control (Game and Leach 1996) and the enduring tendency towards hung councils in which no single party is able to exercise overall control (Leach and Pratchett 1996), all raise important issues for contemporary local government. But while significant they are of secondary importance in an environment in which the political and constitutional legitimacy of elected local government is being collectively challenged by alternative agencies which exercise autonomous power in spheres which have traditionally been the domain of elected councils.

The key concern here is that elected authorities are no longer the sole, or even the prime locus of political activity at the local level. There are of course arguments that local government has never played a central role in sub-national politics (Chandler 1988), but these caveats notwithstanding it is evident that the inexorable rise of local quangos has

significant implications for local authorities. Although there remain significant, even insurmountable difficulties in defining what constitutes a quango, and therefore, corresponding difficulties in measuring their apparent growth (see for example, Hogwood 1995), it is nonetheless the case that an expanding range of autonomous extra-governmental organisations now exercise influence over areas traditionally controlled by local government - by 1995 over 5200 local quangos existed (Hall and Weir 1996). As the earlier discussion of functional change highlighted a number of other actors are now able to influence education policy, ranging from boards of governors in schools through to TECs and the now autonomous FE colleges. Each of these may have contrasting, even competing objectives for their organisations, which may challenge the LEA and its policies. The creation of urban development corporations (UDCs) to provide economic regeneration in the most disadvantaged inner city areas has been designed to generally circumvent elected local government in those areas. The principal justification for this circumvention is that UDCs provide an extra-governmental means of regenerating areas which would be impossible to achieve through traditional local authorities (Sorensen 1995). In a similar vein the single regeneration budget (SRB) requires the establishment of 'partnerships' to receive funding for specific projects: 'the Department of the Environment has made it clear that "bids from individual organisations will have little chance of success"' (Hogwood 1995, p16). The emphasis, therefore, is on involving organisations from outside of local government, or indeed, in circumventing it altogether. In social housing as well, a number of moves are distancing local authorities from the direct control of housing policy, both through the 'right to buy' scheme which has reduced the number of tenants dependent upon public housing, and through a number of programmes aimed at increasing the involvement of housing associations and reducing direct ownership by local authorities (Spencer 1995). The creation of Housing Action Trusts (HATs) to alleviate poor housing and related socio-economic problems in urban areas has continued this trend (Chumrow 1995).

Although they all adopt different approaches the common thread between these disparate areas of local governance is that they all explicitly involve external agencies (both public and private) in providing services that were traditionally the domain of elected local government. In so doing they create a different political climate for local government:

schools can legitimately challenge LEA policies; private interests become the overriding concern in urban regeneration initiatives, even where they contradict municipal policies; social housing becomes subject to a differentiated array of housing associations all serving distinct client groups; and so on. The rise of extra-governmental organisations not only reduces the capacity of local authorities to directly implement policies across service areas through hierarchical mechanisms, it also creates significant challenges to the traditional role of local government in controlling and co-ordinating policies. As Stoker argues:

In the past the range of responsibilities and legitimacy held by local authorities made them relatively dominant within the overall system, even though there were other agencies involved in providing local services. The multiplicity of agencies, along with the weakening of the relative position of local authorities, represents a fragmentation within the overall system. (Stoker 1996, p2)

Thus, elected councils have become one among many potential locations of local political legitimacy. Political change has profoundly altered the inter-organisational politics of local governance by enhancing the authority and legitimacy of extra-governmental organisations across a range of areas.

The implications of this political change for ICT policy in local government are ambiguous. On the one hand it implies an even greater need for authorities to concentrate upon those systems which will enable them to become more involved as the focus of community governance. That is, those ICTs which facilitate partnerships with other agencies through the rapid and timely exchange of information; those ICTs that enable local authorities to co-ordinate policy amongst disparate agencies by aggregating information across geographical and functional areas; and those that engender closer links with citizens in general, and consumers of services in particular, in order to foster greater political legitimacy as representatives of the people. To this extent the implications are similar to the organisational, functional and managerial changes discussed earlier. But on the other hand, the dwindling authority of elected councils in many policy areas makes such initiatives potentially irrelevant. As local government loses not only its constitutional authority to determine policy in particular areas but also its political legitimacy to participate in, or even scrutinise, those areas, so the value of it attempting to develop ICT systems that extend its role in those areas diminishes. Already local authorities have lost

their (admittedly limited) capacity to directly influence health care policy as elected members are no longer appointed to boards of health authorities and NHS Trusts (Hunt 1995). There seems little value, therefore, in local authorities developing systems that monitor health care trends within their communities unless they can influence policy in this area. As with many other areas of local government, however, this particular policy area is closely linked to broader social, economic and environmental factors that have traditionally been the prime concern of municipal authorities. The loss of political legitimacy in such key policy areas, therefore, acts as an inertia against the development of informatization strategies that will support the overview necessary for local authorities to fulfil their potential as the focus of public policy making for local communities.

Financial change

The financial changes of the last two decades have been among the most dramatic of all of those affecting local government. Although the fiscal crisis of local government can be traced back to the economic crisis of the mid-1970s and the then Labour government's attempts to control public expenditure from 1976 onwards (Goldsmith 1986), it is the financial reforms of successive Thatcher governments since 1979 which have attracted most attention. These have included successive changes to the calculation of the block grant, various attempts at capping overall local government expenditure, major controls over capital expenditure and the complete restructuring of local government's taxation system (twice). It is not necessary to review the major features of financial change here as these have been well documented elsewhere (see, for example, Sanderson 1995 for a concise overview of the major changes). Rather, it is useful to highlight two key trends that emerge from financial change which have implications for ICT policy in local government.

First, the last two decades have placed increasing fiscal pressure upon local authorities, encouraging them to become more economic and efficient in the use of their resources. This has led to a general perception of financial retrenchment, both in specific services and in local government more generally, although the reality of such retrenchment is less

severe than some commentators suggest. Measured as a proportion of overall public expenditure local government has reduced from 28 per cent in 1979 to 24 per cent in 1993, while as a proportion of the gross domestic product (GDP) local government expenditure has shown a gradual decline over the last decade from 16 per cent in 1984 to 11.3 per cent in 1993 (Central Statistics Office 1996). The most severe cut-backs on local government expenditure, however, have occurred since 1992. The Central Statistics Office (1996) show that measured at 1990 prices local government expenditure in 1994 was only 96 per cent of its 1991 value, despite the fact that central government expenditure over the same period had increased to 106 per cent. Local government capital expenditure has suffered particularly during this period, placing increasing pressure upon individual authorities to find innovative methods of financing capital projects from revenue budgets. Consequently, although there are dangers in over-stating the extent to which financial retrenchment has occurred in local government it is nonetheless apparent that the broad thrust of financial reforms has been to force local authorities to do more with less, especially in recent years. Financial contraction and retrenchment is a distinctive theme which runs through all of the recent financial changes affecting local government.

Second, a number of observers have noted the inherent centralism that has been a characteristic feature of financial change. In assuming ever closer control of local government finances central government has been seen to undermine a central pillar of local autonomy, making local authorities increasingly dependent upon central grants. Most significantly, the poll tax fiasco and the subsequent reintroduction of a new property based taxation system for local government drastically reduced the proportion of revenue raised locally, particularly as non-domestic rates have remained centrally controlled. In 1980 local authorities raised 40 per cent of their income through locally determined taxation: that is, domestic and non-domestic rates (Wilson and Game 1998). By 1994 only 15 per cent of revenue was raised through the new Council Tax (Sanderson 1995). As Loughlin argues:

The community charge scheme all but destroyed the integrity of the local tax system and has made any attempt to restore the taxing capacity of local government an uphill struggle. Furthermore, given the high gearing effect as a result of 80 per cent of local authority expenditure being centrally provided, local authority budgets are increasingly being effectively determined by central government Standard Spending Assessments... This seems thus to be leading to a system in which local authorities assume a degree of formal responsibility out of all proportion to their ability actually to control services. (Loughlin 1996, p48)

This theme is echoed by Stoker when he summarises the implications of this centralisation of local government finances:

The heavy reliance on non-local revenue creates a substantial opportunity for central government to dictate the level of local spending in aggregate terms. In addition it is able to influence the spending decisions of individual authorities... In short, the traditional concept of a local government system guaranteed a degree of autonomy through locally controlled powers of taxation would appear to be almost fatally undermined by the restructuring since the early 1980s. (Stoker 1996, pp2-3)

Consequently, the financial changes imposed on local government can be seen to be a major factor in the apparent decline of local democracy: a factor which reinforces the debilitating influence of the other changes and which militates against the regeneration of local autonomy.

The combination of financial retrenchment and the centralisation of funding has significant, though potentially contradictory, implications for ICT policies. Three distinct implications emerge. First, financial change has created substantial pressure for ICT systems to deliver administrative savings. New ICTs are often central to efficiency schemes. The rationalisation of public administration has conventionally relied upon computer based systems to reduce staffing levels for particular tasks as an important means of enhancing efficiency. Despite rhetoric to the contrary this conventional wisdom prevails: investment in ICTs is always expected to be rewarded with quantifiable savings in the medium term (Audit Commission 1995). Furthermore, the dominance of this conventional wisdom has the effect of inhibiting the adoption of ICTs which cannot demonstrate such quantifiable saving within a four or five year timescale, however worthwhile such systems might be in enhancing other qualities of local government. As

subsequent chapters will show, this immutable association between cost-savings and ICTs has significant and damaging implications for ICT agendas which may constrain the long term potential for informatization in local government.

Second, even where ICTs have met the criterion of offering quantifiable savings over a specified timescale, financial changes have had a significant impact upon the ways in which ICT projects can be funded. Many ICT systems require substantial one-off investments in infrastructure, traditionally for funding mainframe hardware and software, but more recently, also for creating sustainable high speed and high density communication systems. The implementation of integrated digital networks linked to a number of distributed high capacity processing facilities requires substantial capital outlay. Development of appropriate software which can take advantage of such infrastructures adds significantly to such costs. New ICTs, therefore, are in direct competition with service departments for scarce capital funding. Computing and communication companies such as ICL and IBM have been quick to offer solutions to this problem by offering lease-hire schemes which enable local authorities to transfer such capital outlays to their revenue budgets over a number of years. By making such schemes flexible these companies are also able to offer continuous upgrade paths for authorities. While providing an effective short-term solution for the financing of ICTs, however, such arrangements have important longer-term implications for ICT policies. Not only do they generate or reinforce the legacy factor that is a consequence of all such investments in technology, they also have the more subtle effect of tying individual authorities to the products of particular manufacturers over an extended period. An unintended consequence of financial change, therefore, has been to strengthen dependence upon particular ICT companies, thus further limiting choice and restricting the potential ICT agenda in local government.

Finally, financial changes have had a direct impact upon ICT policies by acting as a major source of diversion for ICT investments. Among other factors the increasing complexity of managing local government finances has required substantial investment in financial management and budgeting systems in local government over the last decade (Fitton and Tomkins 1990). But the biggest distraction has been that caused by the need to

implement the Community Charge (poll tax) and then its replacement, the Council Tax, in extremely short timescales. In simple financial terms Community Charge systems cost over £200 million to implement (SOCITM 1988) and had annual running costs of over £166 million including the transitional relief scheme (SOCITM 1990). The introduction of the Council Tax in 1993 cost local authorities a further £70 million to implement and have annual running costs in excess of £170 million (SOCITM 1993). While a proportion of these costs were met by central government it is nonetheless inevitable that implementing these systems will have been a major distraction for those authorities that were directly involved. As well as concentrating financial investments on taxation systems the cumulative impact of the Community Charge and the Council Tax will have been to distract ICT policy away from other systems and focus attention almost exclusively upon revenue systems. Indeed, between 1988 and 1993 SOCITM report revenue systems as being one of the most important issues mentioned by IT managers in each of their annual surveys. As well as generating a parsimonious climate which placed considerable constraints upon the types of ICT investments that authorities were likely to make, therefore, financial changes also created a major diversion from other ICT investments by requiring authorities to concentrate their efforts on developing and implementing new taxation systems. This distraction had significant implications for the ICT agenda in local government in late 1980s and early 1990s.

Conclusions

The above typology demonstrates extensive changes that reach beyond the traditional boundaries of local government and which have had profound effects upon the broader political and organisational structures of local governance. It illustrates the fundamental nature of the transformation occurring in local governance which sees a changing role for the traditional institutions of local government, the fragmentation of functions and responsibilities across agencies, and emphasis on partnerships in service provision and the participation of a wide range of new actors in the governance of localities. In the context of this thesis the typology highlights three conclusions which are relevant to the argument developed in subsequent chapters.

First, the process of change is complex, confused and incoherent. There has been no overarching plan to guide the various reforms and although some changes are inter-related there remain major contrasts and inconsistencies between them. This is most clearly illustrated by the competing rationale that has guided the structural and organisational changes to local government. The recent Local Government Commission for England placed great emphasis upon finding natural communities around which to draw structural boundaries, the explicit assumption being that authorities would be most effective and responsive where their boundaries were coterminous with such communities. The structural recommendations of the Commission, therefore, have sought to bring the political nature of local government closer to local communities. By contrast organisational change has emphasised consumer choice and market forces as the overriding rationale for reform, thereby seeking to replace political accountability with more contractual mechanisms. Organisational change has played down the role of politics in local administration. Similar contrasts and inconsistencies exist between financial and managerial changes where the inexorable centralisation of the former has limited and undermined the supposed decentralisation and discretion facilitated by the latter. Consequently, the absence of a clear definition of the role and purpose of local government has led to a disjointed and incoherent process of reform that is characterised by inconsistency and ambiguity. Reforms appear at once to undermine the foundations of traditional local government while at the same time sustaining it. Despite the very real problems that this inconsistency and ambiguity creates for local governance there is little indication that the situation will be clarified or resolved.

Second, although the process of local government change is characterised primarily by its incoherence it is nevertheless possible to identify a number of underlying themes which are important in its continued evolution. Stoker (1996) points to three features which capture the essence of these themes: the changing institutional map of local governance; the extension of central control; and the rise of managerialism in all aspects of government. The changing institutional map refers to the 'increasingly differentiated range of agencies and organisations that have responsibilities for strategic decision-making and service delivering within localities' (p2). The key feature here is the plurality of actors that not only directly challenge conventional vested interests in local government but also

increase the number of individuals responsible for decision-taking in localities: when the estimated 50,000 'quangocrats' (Greer and Hoggett 1996) are added to the 23,000 currently serving elected members it is evident that the number of individuals who directly participate in local decisions has grown significantly over the last two decades - considerably more than the 43,000 councillors estimated by the Maud Committee in 1967. The extension of central control refers to the centralising tendencies of many aspects of the typology. Centralisation has been a feature not only of financial reforms but also of organisational, functional and managerial changes, all of which have encouraged an ethos of centrally imposed standards and conventions which severely constrain local discretion and autonomy. This loss of local autonomy is relevant not only to elected local government but also to the 'new magistracy' which is assuming increasing responsibility for local services, but only within the rigid boundaries of nationally prescribed criteria. Finally, the rise of managerialism emphasises consumer-responsiveness and contractual accountability as preferable to the tradition of electoral responsiveness and hierarchical bureaucracy. In particular it denounces local politics as having a denigrating influence on efficient and effective local service provision. As Mather (1989, p234) argues, 'the onus will be on the elected politicians to show that they are necessary'. Managerialism questions and contradicts much of the traditional ethos of public service and introduces new values and cultures to local government (Pratchett and Wingfield 1994). Although primarily a feature of managerial reform the principles and values of managerialism cut across other categories of the typology. Thus, the contractual approach of organisational change; the consumerist focus of functional change; and the market-driven interests of political change are all underpinned by the managerialist agenda in public administration.

Third, the typology shows that ICT policies are profoundly and inextricably implicated in various aspects of change in local government. These technologies both contribute to the process of change by enabling or facilitating particular reforms (as is the case with much organisational change) and are in turn affected by broader changes which give primacy to some features of ICTs and restrict the value of others (as is the case with managerial change). The relationship between ICTs and local government change, therefore, is sophisticated and elaborate. Tracing the genesis of particular reforms and the continuous influences of one over the other is at best difficult and at worst impossible.

It is also largely unnecessary. Rather, the central issue here is the broader consequences of this intricate relationship: extant ICT policies simultaneously both sustain and constrain the process of local government reform. On the one hand investment in new ICTs enables or engenders particular reforms. But of equal importance such investments endow longer term legacies upon local government by developing a momentum which propels change in particular directions and restricts the opportunities for change along other routes. In effect, the interplay between ICT policies and the broader reform process creates an impetus for change which supports the three themes identified above and which closes off other avenues of reform. As the following chapter will show this momentum largely ignores the democratic and public policy roles of local government in favour of its role as service deliverer in specific contexts. Consequently, ICT policies, and those who directly or indirectly influence them, are inadvertently but effectively capturing the broader agenda of local government change.

THE ROLE AND PURPOSE OF CONTEMPORARY LOCAL GOVERNMENT

Introduction

The typology of change developed in the previous chapter shows a disjointed and inconsistent process which has ambiguous, if not contradictory implications for the future role and purpose of local government. The danger of such incoherence is not simply that it leaves local government without a clear sense of direction, although this in itself is problematic, especially where there is an absence of consensus over the value of particular reforms. More than this, it leaves the potential role and purpose of local government open to capture by a range of influences and interests. A principal argument of this thesis is that ICTs, and the policy network that has evolved around their development and implementation in local government, provide a particularly powerful set of influences that are effectively structuring institutions and processes in ways which benefit their own interests rather than those of local government. This argument does not claim that there is a deliberate conspiracy on the part of individual actors to subvert the natural development of elected local government, or to undermine its role and purpose. But it does maintain that ICT decisions which are made in support of particular changes are creating powerful legacies which help to shape and constrain the future possibilities for change. In order to develop this argument further it is necessary first to be clear about the potential role and purpose of local government in the modern polity. Only then can the influence of the ICT policy network be effectively analysed.

This chapter analyses the underlying values and purpose of local government in relation to the typology of change developed previously and the effect of ICTs on this process. It is organised around two main sections. The first section develops a threefold definition

of the role and purpose of local government by combining elements of the traditional values of local government with a more pragmatic approach which considers its contemporary context. It argues that contemporary local government has the potential to fulfil three complementary roles - those of local democracy, public policy making and service delivery - though much of this potential remains latent and under-developed. The second section considers the potential contribution of ICTs in relation to each of these three latent roles by analysing the types of changes which could be effected through the innovative use of new technologies. It compares these to the reality of ICT use in each of the three defined roles and argues that the over-concentration of ICT resources on service delivery is placing significant constraints upon the ability of local authorities to develop their other two roles.

Defining role and purpose: a normative approach

The normative assumptions and principles upon which the institutions of local government are founded have always been ill-defined and open to question. There has always been a degree of uncertainty and ambiguity over the role which local government should play in the British polity, so much so that this ambiguity has become an enduring feature of the British constitution. To an extent it is reflected in the continuous crises that have supposedly afflicted local government throughout the twentieth century (Robson 1966, Pratchett and Wilson 1996). The recurrent debate on central-local relations which was subjected to rigorous and extensive analysis during the early 1980s (see for example Goldsmith 1986) but which nevertheless continues to feature on political agendas (for example, House of Lords 1996) is also indicative of the endemic nature of this ambiguity. Consequently, inconsistencies between contemporary reforms and conventional activities do not occur because the traditional values of local government are out of step with current trends. Rather, they highlight the tensions and ambiguities that have developed in local government throughout the past century. If these are more apparent now than previously it is because the scope of recent changes is so broad that it gives renewed emphasis to the incompatibility of competing values and functions in the traditional institutions of local government and the wider institutions of local governance.

Debate over the distinctive values and role of local government can be traced back at least as far as the early nineteenth century and the utilitarian and romantic traditions of Chadwick and Toulmin-Smith (Hill 1974). These traditions emphasised on the one hand the importance of efficiency in local administration and on the other the ideal of parish communities and the individual liberty which such 'localness' could bestow. In many respects the contradictions between the bureaucratic centralism of the utilitarians and the responsibility of self development which the romantics (Toulmin-Smith in particular) considered to be best fostered through the traditional parishes, lies at the heart of the continuing ambiguity and uncertainty over the values and purposes of contemporary local government. Although today couched in terms of local autonomy *versus* national equality, tensions in central-local relations still centre around issues concerning the efficacy of local administration and the need for the centre to intervene to ensure minimum, nationally determined, standards. Furthermore, those who oppose such interventions by the centre defend the autonomy of localities and the importance of locally determined priorities as a prerequisite for democracy (cf. Sharpe 1970; Jones and Stewart 1985; Waldegrave 1993; CLD 1995).

Developing from these traditions, and especially from a critique of utilitarianism (Magnusson 1986), John Stuart Mill produced his seminal work on representative government which advanced a strong justification for democratic local government based on two propositions. First, he argued that where issues were purely local in character they should be the concern only of those living in the locality. Indeed, he further argued that national governments lacked the capacity to involve themselves in such issues even if they so desired. Second, he held that democratic local government had a vital role to play in educating citizens in the practice of politics and government:

I have dwelt in strong language - hardly any language is strong enough to express the strength of my conviction - on the importance of that portion of the operation of free institutions which may be called the public education of the citizen. Now, of this operation the local administrative institutions are the chief instrument (Mill 1861, p365).

Despite the contestability of these propositions (see Sharpe 1970 for a detailed critique) they are important because they form the first attempt to define and justify the value and purpose of local government. As Sancton (1976) argues, Mill's justification for local

government formed the inspiration behind the Fabian vision of municipal socialism in which 'working people must combine together (and with other sympathisers) to work for representation and social reform' (Hill 1974, p30).

The widespread acceptance of these arguments as the normative justification for representative government at the local level, therefore, provides a traditional orthodoxy which permeates the contemporary institutions of local government. It is based around three core arguments:

First, local government provided an opportunity for political participation. Second, it helped to ensure efficient service delivery. Third, it expressed a tradition of opposition to an overly centralised government (Stoker 1996, p6).

Despite a recurrent debate over the relevance of these principles - for example, the debate between Langrod and Panter-Brick in the 1950s (see Sharpe 1970, Hill 1974 *inter alia*) - they remain the key values which define the role of local government. Thus, in its attempts to define the role and purpose of local government the Widdicombe Committee (1986) identified three attributes that contribute to its core values: pluralism, participation and responsiveness. **Pluralism** was important, they argued, because 'power should not be concentrated in one organ of state but should be dispersed, thereby providing political checks and balances, and a restraint on arbitrary government and absolutism' (Widdicombe 1986, para 3.13). This equates to the orthodox position of local government as a bulwark against central tyranny. **Participation** was important to the committee not only for the 'value of local self government as raising the political capacities of the people' (*op cit* para 3.19) but also because '[L]ocal government offers two kinds of participation; participation in the expression of community views and participation in the actual delivery of services' (*op cit* para 3.20). This developmental view of local participation draws directly from the orthodox perspective initially advocated by Mill but is supported by a host of subsequent theorists (Sharpe 1970). Finally, **responsiveness** was important to the committee in so far as local government 'is an *effective* means of delivering services because it has the ability, unlike a non-elected system of local administration, to be responsive to local needs' (*op cit* para 3.26 - original emphasis). In this respect Widdicombe perpetuates the orthodox concern with the utilitarian position on local government as the suitable mechanism for efficient service delivery.

Although the justifications and values of local government have become more sophisticated (cf. Sharpe 1970, Beetham 1996), contemporary discussions continue to draw upon these principles as the foundations of the debate. The one exception to this is King and Stoker's (1996) attempt at 'rethinking local democracy'. In offering a critique of the conventional orthodoxy Stoker (p14) argues that 'it is struggling to provide a solid support and clear vision for local government in the context of the fragmentation, centralisation and managerialism associated with Britain's emerging system of local governance'. His critique identifies flaws in all aspects of the traditional orthodoxy but his most damning criticism is saved for the allocative efficiency of local government: a justification which he suggests has been wholly undermined by public choice theorists who have implemented market mechanisms as a more effective means than representative democracy of ensuring efficient service delivery. As Stoker (p19) puts it:

If a case for local government in the 1990s is to be rebuilt, the critical thrust of the public choice challenge needs to be met. The public choice view goes to the heart of the orthodox claims about local government's special qualities as a service provider. In particular, Sharpe's (1970) arguments about responding to demand are challenged flatly; as is the claim that local government is a consumer champion against producer and professional interests (Stoker 1996, p19).

His principal concern is to begin to reconstruct the case for local democracy around 'a broader conception of local government as a political unit' (p21). Thus, he places particular emphasis upon 'the distinctiveness of the political realm as a focus for collective decision-making' (*op cit*) and argues for 'the value of a local democratic polity rather than a particular preference for local representative government' (p22). In other words Stoker's argument is in praise of the essentially political nature of local government - a value which previous theorists have tended to neglect or down-play.

Although this reconstruction of the case for local government is far from complete it provides a valuable additional dimension to the traditional orthodoxy which is essential to understanding the role and purpose of contemporary local government. By combining the debates and critiques of the traditional orthodoxy with the new politics espoused by Stoker and others (see King and Stoker 1996) it is possible to perceive the modern institutions of local government as having the potential to fulfil three complementary purposes: those related to local democracy; those related to public policy making in local

communities; and those related to the delivery of public services. These three purposes provide a framework with which to analyse the influence of both ICT policies and the more general agenda of change on the underlying values of local government. Figure 4.1 provides a summary of this framework.

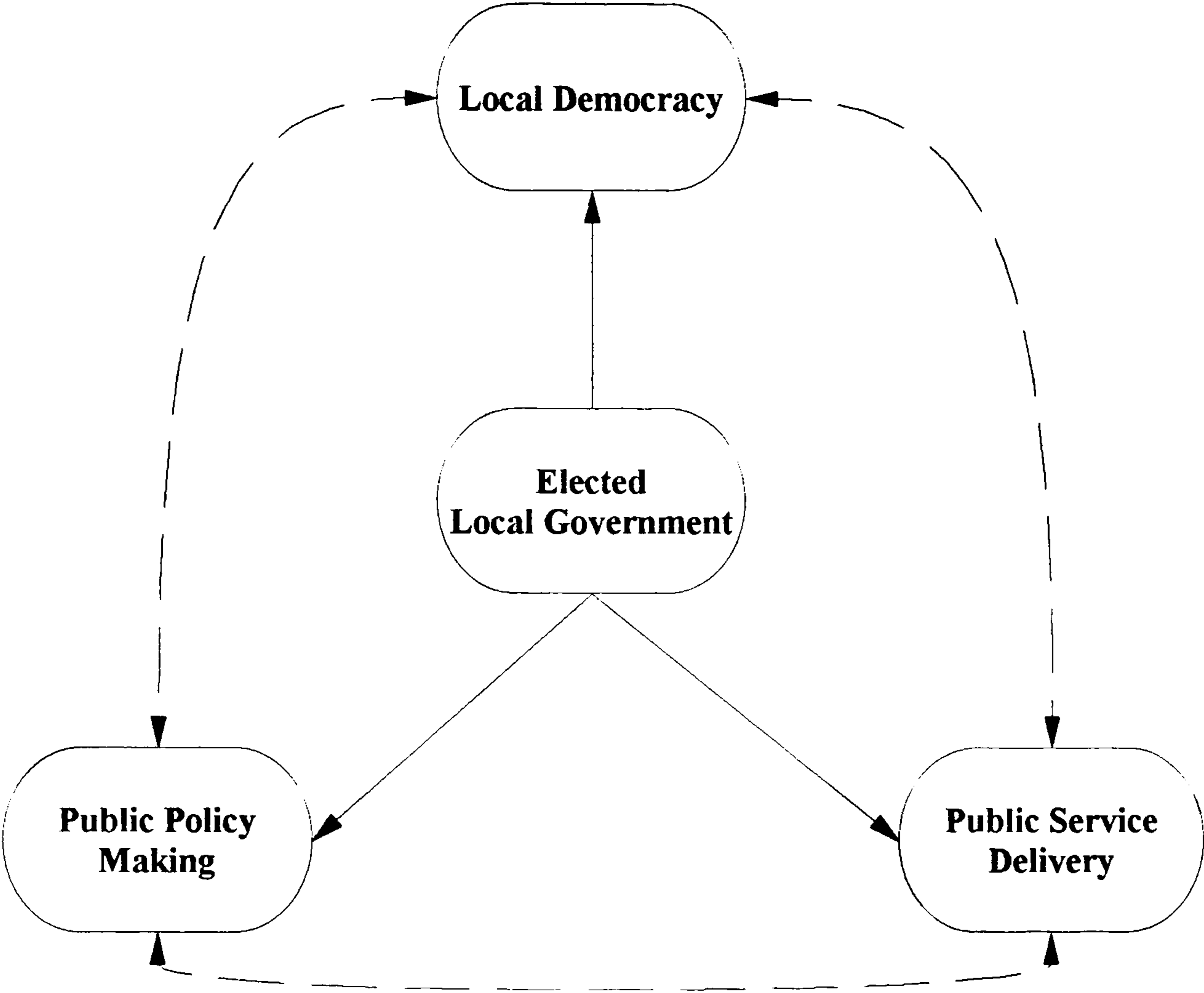


Figure 4.1
Three potential roles for local government

Local democracy

The relationship between local democracy and local government is a long-standing and crucial feature of local government in Britain. Outside Parliament local councils are the only governmental institutions in Britain which have traditionally been subject to direct periodic universal election (Loughlin 1996). Even though MEPs are now directly elected, and some other official positions such as school governorships are also filled through a quasi-democratic process, local government remains distinctive from other agencies at both the national and local levels because it is the only formal institutional location of democracy beneath central government. This accords it a degree of constitutional and political legitimacy not found in other organisations at the local level (Pratchett and Wilson 1997). The role of local government as the institutional setting for local democracy, therefore, is part of the conventional wisdom and normative assumptions which underpin its current existence.

Yet as both a feature of contemporary local government and as a primary reason for its existence, the democratic purpose is sadly neglected in both the analytical accounts of recent changes and in the practical activities of local government. The concern here is not that traditional democratic practices are being abandoned or distorted by the activities of local authorities, or even that recent analyses of change have argued that any such dissipation of traditional democracy is occurring, although both of these feature in the accounts of some authors (see for example, Jenkins 1995). Rather, the concern is that local authorities accept their role as the focus for local democracy in a largely passive and unassertive manner. Councils retain all of the vestiges of democracy which they inherited from the Victorians and which have been enhanced throughout most of the twentieth century: periodic elections for all members (since the abolition of aldermen in 1972); equality of participation among all council members (notwithstanding the restrictions imposed by party groups); collective responsibility for decisions; the support of an impartial bureaucracy (but see Pratchett and Wingfield 1996); and an independent right to raise taxes (although these rights have been heavily curtailed in recent years - see Sanderson 1995), among a range of other democratic features. Indeed, the recommendations of the Widdicombe report (1986) and its subsequent legislation (mainly

the Local Government Act 1988) were aimed primarily at improving the traditional democratic structures and practices of local government, and the recent focus of the Nolan committee on local government (the Committee on Standards in Public Life - Cmnd 3702-I), its third area of inquiry, must be seen to have a similar aim. The assumption is that the processes and institutions inherited from the Victorian conception of local government deliver an acceptable measure of democracy which can endure significant economic, social and political changes. But this interpretation of local democracy is an impoverished view of what were already a limited set of processes.

The Commission for Local Democracy (CLD 1995) represents the only attempt to date to break out of the conventional wisdom. Although many of the Commission's proposals concentrate on strengthening the internal and external processes of local government, thereby reinforcing the conventional values of local democracy, it balances these with more radical proposals aimed at enhancing the principles of active citizenship and intensifying political activity. These include proposals to require all local authorities to produce an annual 'Democracy Plan' and for introducing citizenship as a core component of the national curriculum (CLD 1995). While superficially these proposals may appear to have a largely benign effect upon the powerful institutions of local governance, in reality they suggest profound changes in the relationship between the state and its citizens: changes to the democratic culture of citizens which could extend well beyond the conventional boundaries of local government (Pratchett and Wilson 1996). Most importantly, the CLD's proposals highlight the need to think about local democracy beyond the confines of traditional local government without abandoning its central role in sustaining and championing democratic practices.

It is necessary, therefore, to move beyond the limitations of the conventional perspective in order to argue for the full democratic potential of local government. The value of elected local government is that it can contribute to democracy in at least three ways.

First, local government contributes to democracy by creating a plurality of channels for political influence. This encompasses the argument that local government encourages a diffusion of political power among a range of sources and provides a broader means of

interest articulation and representation than a wholly centralised state. Thus, local government as a legitimate focus of politics provides a significant bulwark against central tyranny. Despite the centralising reforms of successive Conservative governments since 1979 (Stoker 1996) the argument of plurality remains an important justification for the perpetuation of a form of democratic government beneath the central level (see Beetham 1996). These arguments and their limitations have been explored in detail elsewhere (see especially Sharpe 1970, Hill 1974) and need not be further developed here.

Second, it is necessary to acknowledge the importance of the traditional institutions of local government as the principal locus of representative democracy. Beetham (1996, p32) claims that for representative government to meet the criteria of representative democracy it must meet the four criteria of being 'popularly authorised, accountable, responsive and representative'. Elected local government, he argues, is the only institution beneath Parliament that can meet all of these criteria. He acknowledges existing deficiencies in the contemporary organisation of local government but argues that these are practical problems rather than intrinsic deficiencies. His argument for the 'democratisation of local government', therefore, involves the enhancement of existing institutions rather than their replacement. Furthermore, in developing these existing institutions he argues that central government is incapable of delivering democracy without some form of representative democracy at the local level. Thus he concludes:

Taken together, the democratic case for elected local government, on grounds of accountability, responsiveness and representativeness alike, must be judged to be a strong one, when compared with the alternative of a local system of administration that is accountable upwards to a nationally elected parliament, and downwards to individual 'consumers' through an ombudsman, citizens' charter or the like. The limits to the possible democratisation of the latter model are quickly reached. They are constituted, on the one hand, by the practical limits to a pyramidal structure of upwards accountability, where the base of the pyramid comprises a multitude of decisions taken in hundreds of different localities; and, on the other, by the conceptual limits to a model of downward accountability based upon individual redress alone (Beetham 1996, p40).

Consequently, the institutions of local government perform an important role in providing an essential level of democracy beneath the centre. The argument here is that the first and most important contribution of local government to democracy is that its institutions are intrinsically democratic: a feature that is absent from other public agencies that are active

at the local level. Reform of local government, therefore, should ensure that such features are retained or enhanced, both internally through the democratic procedures that authorities follow, and externally through the ways in which elections and other factors influencing local government are performed.

Finally, local government has a developmental role to play in a modern democracy. To an extent this involves J. S. Mill's argument that democratic local government is desirable because it widens the opportunities for participation and educates citizens in the practice of politics and government (Phillips 1996, Stoker 1996 *inter alia*). This developmental role is particularly important when the greater involvement of ethnic minorities and women in local government is acknowledged (Phillips 1995), although there remain dangers in exaggerating the degree to which this involvement can be perceived as representative of particular ethnic or gender divides (Wilson and Game 1998). Despite the declining number of elected members and the increasing prevalence of party politics in UK local government, it still provides an important means of political participation, articulation and education which could not be achieved solely at a national level.

But all of this is a largely passive form of democracy which depends upon individual involvement for its development. Local government has the potential for a much more proactive involvement in developing democracy: a potential that is unique to its own institutional characteristics. Local councils are overtly and explicitly political in their nature. Hence, they have both the organisational processes and the institutional legitimacy to engage in community-wide cross-functional strategic decision-making. Other organisations at the local level (for example health authorities, TECs etc) have considerable power and influence within their own specialised areas of service provision, but lack both the mechanisms for citizen responsiveness and the political legitimacy accorded by a democratic election process. Although a measure of public consultation can be introduced into these organisations such activities are often a largely contrived means of legitimating existing or proposed policies, rather than a genuine process of involving citizens in the decisions affecting them. Consequently, they are add-ons rather than an intrinsic feature of the institutional framework. In contrast, local authorities by their very nature have the institutional processes and mechanisms to involve all citizens in decision-

making, and the political legitimacy to put those decisions into effect. There are, of course, practical limitations to these claims for political legitimacy. Much of the public choice literature has questioned the responsiveness of large producer-led bureaucracies and has argued instead that market based processes are much more responsive to individual preferences (see for example, Dowding 1996, Dunleavy 1991). Furthermore, persistently low election turn-outs call into question the extent to which elected members can claim to be representative of their communities (Rallings *et al* 1996). In this respect, high profile single-purpose agencies can claim to have much greater legitimacy for their programmes than some elected authorities. But these practical limitations should not be allowed to obscure the underlying legitimacy that democratic process accords local government. Elected local government retains a set of characteristics which sets it apart from the other agencies active at the local level.

The uniquely political nature of local government makes it more than simply a vehicle of institutionalised democracy and endows it with the potential to contribute to the development of a broader democratic polity. Local government can be the catalyst that engenders the discourse and participation that are the essence of vibrant politics across communities: that is, councils have the capacity to enhance participation through more than the conventional channels of politics. Some local authorities have already experimented with extra-political mechanisms for enhancing participation through such devices as citizens juries (for example, Lewisham and Norwich), neighbourhood forums (Islington) and other methods of involving citizens in both strategic and day to day management (see Burns *et al* 1994). Others have concentrated on extending the information available to the public through viewdata or multi-media based citizen information systems (for example, Oxfordshire, Cornwall, Bradford) working from the premise that by extending access to information both individuals and groups will have greater ability to participate effectively in a pluralist democracy (Guthrie and Dutton 1992, Horrocks and Webb 1994). This premise is given even greater impetus by the increasing use made of the internet by local authorities - by March 1997 more than 200 local authorities had a presence on the world wide web, with some such as the London Borough of Brent beginning to use the internet for public consultations. But such initiatives are still in their infancy and form part of a latent capacity for enhancing democracy rather

than an active demonstration of local government's willingness to take-on such a proactive role. Furthermore, the ability of individuals and groups to make effective use of these initiatives, especially where they involve the sophisticated use of new technologies, is extremely limited. Consequently there remains a latent capacity for local authorities to be a major catalyst in the development of local democracy, both by finding ways of encouraging direct participation in local politics, and more generally by improving the flow of information to individuals and groups outside of the immediate political realm which is necessary for an informed discourse on local issues.

Local authorities also have a vital role to play in acting as the principal focus of politics within localities and as the central agent of democracy. Among other responsibilities this role involves local authorities in engendering public debate about the activities of other agencies in their communities and the monitoring of the activities and performance of such organisations. This responsibility is more than just the 'Quangowatch' activities of authorities like Kirklees which concentrates on quantifying the activities of quangos in their area, and involves local authorities taking on the role of democratic leadership in relation to all local activities (Stott 1995, Hirst 1995). Ultimately it may involve local authorities assuming some legitimate authority to hold such agencies to account, though this would require a degree of constitutional reform which is not currently anticipated. The key point, however, is that local authorities not only have a traditional role to play in supporting and developing democracy. There is also a largely undeveloped and latent democratic role for them to play in the emerging structures of local governance.

Public policy making

Local government's role as the focus for public policy making in local communities has been given new prominence by the fragmentation of service delivery and the emergence of new structures and processes of governance. When local authorities were largely the monopoly providers of services the public policy making role was an implicit function of their day to day activities. As such broad community-wide policies were rarely separated from the specific policies of individual services within departments - the two were seen

as being coterminous. It is only over the last decade that the full potential of local government as a policy maker for local communities has come to be realised as academics and practitioners have sought to justify the continued existence of local authorities in the context of local governance (see for example, Leach *et al* 1994, Wilson and Game 1998, Stewart and Stoker 1995, King and Stoker 1996, *inter alia*). The principal argument is that as a consequence of their diminishing functional and organisational responsibility for many services local authorities are now better placed to assume a much more strategic role in the community: one which enables them to transcend the minutiae of detailed administration in order to achieve an overarching perspective on the needs of the community.

Local governance, however, is very much an emergent paradigm which reflects contemporary trends in the distribution of functional responsibilities across a range of extra-governmental organisations, rather than a predetermined structure of inter-organisational service provision. The potential for local government to assume a central role within this emerging framework is as much a factor of its own strategic vision as that of either destiny or central government intervention (see for example, LGMB 1993, Leach *et al* 1994). Given their democratic legitimacy local authorities have the latent capacity to undertake at least three separate but related activities that would enhance their role as public policy makers.

First, local government has the capacity to enhance its traditional role as the co-ordinator of disparate agencies and policies. As Sharpe recognised over twenty-five years ago, one of local government's strongest justifications is that it has the ability to provide, at the level of the community, the lateral integration of a range of vertically differentiated services:

there must be some compendious, horizontal co-ordinating agency which can gather together the separate vertical services coming down from the centre and adjust their content and character to the particular needs of each community; to determine the particular mixture of services for each community. In short, the social and economic unity of each locality should be matched by an equally unified service providing agency (Sharpe 1970, p167).

Thus he asserts that 'if it did not exist something very much like it would have to be created in its place' (*ibid*, p166). To this extent local government has always fulfilled the role of public policy maker in localities by adapting national standards and policies to meet local needs and demands. But the increasing fragmentation of service delivery (Alexander 1991), the diversification of agency responsibilities and the growing complexity of accountability arrangements (Beetham 1996) further increases the need for a co-ordinating agency at the centre of communities. Local authorities have the capacity and legitimacy to oversee the activities of a disparate range of extra-governmental organisations whose boundaries may or may not be coterminous with those of the elected council. As direct responsibility for service provision diminishes so both the need and the potential for local authorities to assume an ever more central role in coordinating differentiated services increases. Local authorities already possess much of the machinery for undertaking such coordination through member and officer participation on various management boards, steering committees, school governing bodies and so on, but their ability to put these networks to good effect is often extremely limited (Leach and Pratchett 1996). But these limitations should not obscure the opportunities which are available for local authorities to develop a capacity as the focus of local governance.

Second, local authorities have an opportunity to develop broader social and economic policies for their communities which reflect the interests and preferences of their own citizens. This broader public policy role involves more than just the incentive systems devised by authorities in the 1970s and 1980s to encourage economic development in particular areas. It involves the creation of broad policies that reflect realistic social and economic aspirations of communities, and the development of partnerships with other public, voluntary and private agencies to implement such policies. Thus it requires a much more strategic, dynamic and proactive involvement of local authorities in all of the social and economic features of their communities.

Finally, the public policy making role requires local authorities to develop their potential as representatives and advocates of their communities. Again this has always been a traditional though largely under-developed role of local authorities. Faced with a proliferation of agencies in their localities that are only distantly accountable to their

communities local authorities have an increasing incentive to develop their potential as the representatives of the community's interests. Some authorities already engage in such activities. For example, Sheffield City Council took effective action in 1994 to engender public debate when the local health authority proposed the closure of one of the city's two accident and emergency centres. The council was successful in seeking a review of the health authority's policy, not because members censured it in committee meetings, but because they were able to mobilise public opinion and engage health authority members and professionals in public debate through the local media. Such examples of community representation and leadership are limited to a few high-profile cases but there is a clear potential for local authorities to become much more involved in representing the interests of their communities to local and national bodies. Whether the creation of European offices in Brussels by a number of authorities is a further example of this representational role is open to question. What is clear, however, is that the democratic basis of local government provides it with the legitimacy to fulfil the community leadership role: a legitimacy that no other agency at the local level has. The onus is on local authorities to develop this potential.

Service delivery

The delivery of a growing number of public services has been the defining feature of local government for most of the twentieth century. As Stoker argues:

The structure of local government may have been relatively stable in the early decades of the twentieth century but there was considerable change and development in the functions undertaken by local authorities.... As new responsibilities were taken on by the state, so many of these were placed in the hands of local authorities (Stoker 1988, p4).

Thus, in the first four decades of the twentieth century local government expenditure increased nearly four-fold in real terms (Dunleavy 1984). In the decades following the second world war this general trend continued. Although some important services were removed from direct local authority control, most notably health care and water supply, local government continued to grow as the prime provider of services, especially those associated with welfare, in many areas.

The significance of local government as a service provider is evident at both the practical and theoretical levels. At the practical level, and in keeping with the recommendations of the Bains Report (1972), local authorities continue to be organised both managerially and politically around the major services they provide. Contemporary text books on local government still categorise authorities according to the different service functions of each (cf. Seeley 1978; Byrne 1992; Wilson and Game 1998). Many professions are still predominantly, if not exclusively, employed by local authorities, such as school teachers and social workers (Laffin 1986). Local government still directly employs some 2.2 million full and part-time workers (Audit Commission 1995) to fulfil its functional responsibilities. Consequently, service provision dominates the operational activities of most local authorities.

This significance is supported at the theoretical level by analyses of central-local relations which compare the types of services provided by each. Many contemporary theories such as the dual-polity (Bulpitt 1989), policy networks (Rhodes 1988) and public choice models (Dunleavy 1991) are all concerned to a significant extent with the ways in which services are organised, managed or delivered (see Stoker 1995), and their effect on central-local relations. Most notably, the dual-state thesis (Cawson and Saunders 1983, Saunders 1984, 1986) identifies inherent tensions between central and local government which emerge from their service focus. According to Saunders (1984, 1986) central government is primarily concerned with sustaining the capacity for industrial production while local government is more concerned with developing welfare consumption. As a consequence there is an irreconcilable tension between the underlying functions of central and local government which contemporary reforms can do little to remedy. Although the dual-state thesis has been greatly criticised, not least for its inability to distinguish sufficiently the apparently unique production focus of central government from the supposedly unique concentration of local government on welfare consumption (see Saunders 1986), it is nonetheless useful in so far as it highlights the significance of service delivery to the underlying function of local government in the contemporary polity. To the extent that local government concentrates upon enhancing welfare consumption through such services as education, housing and social services, so it can be seen to be both empirically and theoretically structured around service delivery. Service delivery has become part of the

systemic values which underpin normative accounts of local government (cf. LGMB 1993, Leach *et al* 1994, CLD 1995). It has been, and continues to be, a major feature of local government in the UK, despite recent reforms which have apparently sought to move aspects of service delivery away from direct local authority control (see chapter 3). Any attempt to define the role and purpose of contemporary local government must take this into account.

The traditional emphasis on service delivery has three important implications for the development of the role and purpose of local government: it creates an institutional legacy which defines much of its contemporary context. This legacy includes the formal organisational and managerial structures which reflect the service orientation of local authorities: service departments with paid heads of service matched by service committees and committee 'chairs'; political manifestos which concentrate policy commitments on particular services; and budgetary processes which emphasise the service implications of policy initiatives. It also includes the more informal institutions which give meaning to the day to day activities of bureaucrats and politicians, and confirm that processes occur in the way in which they are supposed to (March and Olsen 1984, 1989; Lowndes 1996). Such 'new institutions' vary from the managerial practices and customs which have developed in particular local authorities through to the broader concept of the public service ethos which defines the overarching values and principles of officers, and sets the context for individual behaviour in specific service areas (Pratchett and Wingfield 1996). Although the 'new institutions' are the subject of some controversy (see Pratchett and Wingfield 1995, Lowndes 1996) the point here is that local government's emphasis upon providing services has had a profound and sustaining impact upon the formal and informal structures around which it is based. Developing from the service orientation this legacy endows local authorities with particular customs, practices and structures which are inherently linked to its desire and ability to deliver particular services, either as the sole supplier or as an integral component of a wider system. Reforms which weaken local authority control over these services, or completely remove them from such control, strike to the very heart of the institutional framework of local government.

The dominance of particular services in local government brings with it a concomitant dominance of particular professional groups: what Sharpe (1970, p174) refers to as 'the danger of incipient syndicalism'. These professional groups, operate within their own cognitive and normative accounts to both codify and mystify their own professional competencies, thereby seeking to perpetuate or enhance their own power in local government (Laffin 1986). While the relationship between particular professions and local government is complex and wide-ranging (see for example, Laffin and Young 1990) for the purposes of this analysis it can be summarised as being two-fold. On the one hand, the dominance of professions provides an explanation for the enduring concentration of elected local government on the provision of particular services. The existence of professional officers with highly specific service concerns makes it almost inevitable that the agenda of local politics should be dominated by the concerns raised by such groups. As well as underpinning many policy decisions professional discourse often frames the agenda to which local politicians react. The professions have a vested interest in keeping local government's attention focused upon service delivery, especially during periods of fiscal restraint when service budgets are in danger of being reduced. On the other hand, the dominance of professions also deflects attention away from the democratic and public policy making roles of local government. This occurs both by default - because professional groups see matters of service as being more pressing than any other issues - and by design, in so far as professional groups have a vested interest in preserving their own technocratic power in relation to the direct threats of democracy or the more general threats of public policy making. Greater democracy may be seen to undermine professional autonomy while a stronger focus on public policy making may reduce the impact of particular professions to that of a sub-component in a broader programme. The existence and dominance of the professions in local government, therefore, both sustains the focus on service delivery and militates against the development of the other roles outlined in this chapter.

Local government's emphasis on welfare services places it in a particularly vulnerable position in relation to extant political and economic trends at national, international and global levels. Although local government has traditionally provided a broad cross-section of services its main focus has been on the provision of welfare services. Whether viewed

from the functionalist perspective of marxist state theorists (see for example Cockburn 1977) or from the more pluralist traditions of urban political theory (see for example Judge *et al* 1995), the importance of local government in creating the conditions for welfare consumption, either as a function of capitalism or as by-product and reaction to it, is a fundamental theme. Indeed, much of local government's development during the twentieth century has been concentrated upon improving the delivery of welfare services in areas such as education and housing, and in caring for children, the elderly and those with disabilities. But the post-war consensus which supported the gradual expansion of welfare services has been dissipated over the last two decades in the face of widespread economic retrenchment and a political ideology grounded in neo-liberal concepts. Alongside a broad attack on the bureaucratic organisations of the state has been a specific aim to reduce the state's involvement in welfare provision, at both national and local levels. This phenomenon is not unique to Britain: similar experiences are recorded in many other western economies, most notably the USA and New Zealand. Such international, if not global trends, imply a diminishing role for those agencies involved primarily in the delivery of welfare services. For British local government the implications are profound: in concentrating their role and purpose in the delivery of welfare services local authorities are particularly vulnerable to the general retrenchment of those services. In so far as local authorities have allied their existence to the importance of welfare services, so a reform and retrenchment of the welfare state implies a similar fate for the institutions of local government.

As a role for contemporary local government, therefore, service delivery is potentially the most complex and ambiguous of the three elements proposed here. On the one hand local authorities have a strong tradition of service delivery which brings with it a host of other institutional legacies which the predominance of professional bodies seek to protect and preserve. This provides a strong organisational and political focus around services and suggests that they should continue to focus their efforts on this role. On the other hand broad economic and political trends imply a diminishing role for such services, and especially for local government. This suggests that local government must relinquish much of its concern with direct service delivery and move towards the more arms-length arrangements implied by the local governance agenda (LGMB 1993, Leach *et al* 1994).

In other words, if local government concentrates upon service delivery to the exclusion of other potential roles and responsibilities then it may find its overall purpose undermined by both broad economic trends and more specific political initiatives.

Such an argument does not deny that local authorities will continue to retain a residual capacity for service delivery. Even though there has been extensive legislation over the last two decades local authorities still retain considerable responsibility for direct and indirect service delivery. Local authorities will continue to provide a safety net for many services and retain a legal and moral responsibility for ensuring a minimum service level. They also continue to be closely involved with the provision of many other services which have been devolved to arms-length agencies or contracted out to other organisations. Furthermore, the new Labour government's policy of 'best value' in service delivery may breathe new life into DSOs by placing greater emphasis upon effectiveness of services as well as upon efficiency.

But the main problem with the service delivery role is that it distracts from the other more 'governmental' roles of democracy and public policy making. Authorities need to be more careful about striking a balance between service delivery and their other potential roles. There is also the danger that public choice and new-right inspired reforms are making local authorities seem a poor alternative to the allocative efficiency of markets or quasi-markets. Placing all of its efforts in retaining its service delivery functions, therefore, puts local government on somewhat unstable ground - its primacy in efficient service delivery is no longer a sound defence for its existence.

ICTs and the normative purpose of local government

One advantage of distinguishing between these three broad roles for local government is that it enables an analysis of the relative importance attached to each by contemporary reforms. Thus, it is apparent that Conservative reforms of local government tended to attach greater significance to aspects of service delivery than to the other roles, although the change process also made issues of local democracy and public policy making more

prominent as a consequence. A further advantage of distinguishing between these three roles, however, is that it enables an analysis of the potential contribution of ICTs to each. This section concentrates upon this latter advantage by addressing the potential and actual contribution of ICTs to each of the three identified roles in turn.

Local democracy

Although the relationship between ICTs and democracy has been a recurrent academic theme for the past three decades (cf. Martin and Norman 1970, Laudon 1977, Barber 1984, Lyon 1988, McLean 1989, van de Donk and Tops 1992, Horrocks and Pratchett 1995, *inter alia*), the translation of this wealth of theorising into democratic practice, especially in local government, has been slow to be realised. Despite the calls for a more practical application of ICTs to support democratic evolution in UK local government (Horrocks and Webb 1994, Percy-Smith 1995) the democratic implications of ICTs are still marginalised by local authorities. Even though European and USA experiments with electronic democracy have been widely discussed (see for example, Elgin 1993; Loader and Lauritzen 1995, van de Donk *et al* 1995) the ability of most local authorities in the UK to appreciate the significance of such initiatives, let alone translate them into their own political and organisational contexts, has been minimal.

Yet the potential for ICTs to enhance local democracy in the UK context is now substantial. New ICTs have the latent capacity to both complement the existing institutions and processes of democracy in local government, and to contribute towards the goal of extending and developing democratic discourse and participation. Each of these will be dealt with in turn.

Existing institutions and processes - As was noted in the previous section, for local government to properly meet the criteria of representative democracy it must be 'popularly authorised, accountable, responsive and representative' (Beetham 1996, p32) - and by its very nature it can be assumed that local government aspires to the principles of representative democracy. The effective application of ICTs could be used to support

such aspirations in at least two ways. First, ICTs could assist in increasing electoral turnout. Proposals here range from simple optical mark reading (OMR) processes for counting votes through to more complex systems of telephone voting and other forms of digitised polling of citizens (Percy-Smith 1995). In particular, digital voting and computerised counting could be used to simplify the administration of the proportional representation system recommended by the CLD (1995) as a means of increasing electoral turnout. When combined with other aspects of electoral reform such as changes to polling hours or days this would enhance the status of local government as representative democracy by increasing the extent to which it can claim to be popularly authorised and representative. It would have the additional benefit of increasing the political and constitutional legitimacy of local government in relation to other organs of government.

Second, ICTs have the potential to improve the decision-making processes within contemporary democratic institutions by making politicians better informed. The growth of management and executive information systems (MIS/EIS) in local government during the 1980s was largely concentrated around improving managerial information. That is, they were directed primarily at improving the information held by senior professional officers. Few of these systems have been extended to elected members in ways which can support their activities. At best members are given access from home to existing databases and management information systems, while at worst, members are denied access to even the most obvious ICT resources or actively discouraged from using them. The necessary development of front-end applications which support the advocacy and decision-making functions of councillors has been largely non-existent in local government. One of the few examples of any such innovation has occurred with computer modelling techniques, where a limited number of councils are using modelling to help clarify alternatives for council decisions. For example, Stroud District Council use a simple spreadsheet model displayed on an overhead screen during the full council budget meeting which continuously shows the implications of budget decisions (and potential decisions) on key variables such as the anticipated council tax level, the overall budget and so on. Similarly, the London Borough of Redbridge uses more sophisticated modelling techniques to conduct a process of computerised 'decision-conferencing' as a means of achieving consensus on policy issues among elected members (Leach and

Pratchett 1996). But these modelling techniques, in which elected members get immediate feedback on the implications of their decisions, are at the cutting edge of ICT use in local government. The potential for ICTs to support democratic decision-making processes remains largely underdeveloped.

Extending democratic discourse and participation - While ICTs could be effectively used to support and enhance existing democratic processes, their real potential lies in the ways in which they can encourage greater involvement in local politics. A range of ICTs can be identified as supporting and engendering political participation, ranging from simple digital polling systems based upon existing telephone technologies, through telematics networks that facilitate citizen information systems, free-net discussion groups and other means of developing citizen/government communications, to the narrow-casting abilities offered by the growth of satellite, and more directly, cable television systems. At their most simple ICTs can be used to encourage local referenda and opinion polling in order to test alternative policies. The recent Strathclyde water referendum (McNulty 1995) might well have improved upon its already impressive 71.5 per cent turnout had citizens been given the opportunity to cast their votes by telephone. When supported by other digital and electronic media, such initiatives can be a powerful means of encouraging political participation, especially among those normally excluded or disenchanted by traditional political processes. For example, the Amsterdam Digital City provides 'inhabitants' with the opportunity to engage in real-time debates with other 'inhabitants' over a broad cross-section of local policy issues, as well as providing access to a range of information resources (Schalken and Tops 1995). Elsewhere the development of citizen information systems (for example OXCIS in Oxfordshire) and other methods of developing communications between citizens, politicians and bureaucracies offer the potential to increase the information available to the public, on the assumption that a better informed public will be more democratically active (Horrocks and Webb 1995).

These initiatives, however, are not without their problems. As Schalken and Tops (ibid) show, free-nets such as the Amsterdam Digital City do not necessarily encourage greater political participation across localities, and indeed, may come to be dominated by a relatively small social, political and economic group. Similarly, citizen information

systems are only of value to those who are sufficiently motivated to interrogate the systems and then put that information to use. Indeed, such systems may well be of greater benefit to organised interests and pressure groups than to individual citizens. If this is the case then there is a danger that such initiatives may act to further entrench existing disparities and information asymmetries rather than resolve them. But the key point here is that the range of experiments and opportunities raised by these technologies (see van de Donk and Tops 1992, Horrocks and Pratchett 1995, for summaries of experiments and issues) introduces new dimensions to contemporary political processes and institutions. The informatization of local democracy offers the potential for representative democracy to be more inclusive of disparate groups and more responsive to local needs and demands, especially when supplemented by technologies which support some elements of direct democracy. But more significantly, such informatization promises to alter the flow of information between bureaucracies, politicians and citizens, thereby creating a more informed and politically active locality. By opening up new flows of information and new channels of communication, ICTs could engender much greater discourse on local issues, leading to more informed and representative decisions at the local level. A more politically active local citizenry has important knock-on effects to other areas of the polity, by creating a demand for change in democratic practice at other levels of government as well (Pratchett and Wilson 1996).

But despite the potential for ICT led democratic innovation that has existed for a number of years, the reality of ICT investment in this aspect of local government is disappointing. Few authorities seem willing to invest significant resources in developing systems that support or enhance their democratic roles. As recent SOCITM (1993, 1994) reports have shown, when faced with issues such as the local government review and the CCT of IT services, local authority IT managers do not even consider democracy to be an issue for their attention. Furthermore, democratic innovation will not provide the efficiency returns which dominate the conventional wisdom of IT management, and will not necessarily support the aspirations of particular professional groups. Consequently, even where some authorities have sought to use ICTs to support democratic innovation (for example, Oxfordshire, Cornwall, Bradford) investment in such systems has tended to be at the periphery of the authority's activities, rather than as a core function. Issues of democracy

remain marginalised within the technocratic world of ICTs. As will be argued more comprehensively later, this is largely a consequence of the underlying values and assumptions of the local government ICT network, and its relations with other professional networks, rather than any innate complexities or problems which democracy poses for ICTs.

Public policy making

The previous sub-section dwelt with democracy at some length because although the potential for ICTs to enhance democracy is great, the extent to which they are being used to support democratic initiatives is limited. A similar argument can be made in relation to public policy making. New ICTs could greatly enhance the abilities of local authorities to develop their capacity for public policy making, but few, if any, are prepared to invest the resources to reap the real benefits of informatization in this area. Although many recognise the need for local government to move towards community-oriented models of local governance (Leach *et al* 1994), few see ICTs as a major tool in achieving them. At best, ICTs are seen as providing the underlying efficiency that will free local authorities to concentrate more upon the partnership and co-ordinating functions associated with the public policy making role. But for most, ICTs are an irrelevance to what are seen as essentially the strategic activities of local government.

Yet, where local government seeks to be the coordinator and integrator of vertically and organisationally differentiated services; where it seeks to monitor and respond to exogenous social and economic change; and even where it seeks to become the advocate of local interests at national or international levels, ICTs and the processes of informatization implicit in their innovative application, are fundamental in enabling local authorities to achieve such ambitions. Much of the information which could underpin a public policy making role for local authorities already exists in digital form, held in a range of functional systems within fragmented operational organisations. The challenge for local government is to find effective ways of gathering and taking advantage of the information held in a disparate range of organisations. This challenge is four-fold.

First, in the move towards community partnerships and arms-length agency arrangements, local authorities must become the prime instigators of initiatives which encourage ICT based links between agencies. In short, ICTs provide local authorities with an important tool with which to manage and minimise the negative effects of fragmentation (Leach *et al* 1996). In part this process involves investment in sophisticated telematics infrastructure to support technical links between organisations. This assertion is based on the assumption that the better the supporting technology the easier information exchange will be. Such systems already exist, both in the form of telematics hardware, and in more complex software based systems such as ICL's 'TradeNet' (which provides the basis for integrated information exchange between trading organisations). But more significantly it also involves local authorities encouraging other organisations to share information in the interests of public policy making. This part of the process raises a number of political and practical problems. There are a range of reasons why organisation may feel uneasy about sharing information with other agencies, especially where they may feel in competition with such agencies, or where a conflict of interests may arise. Furthermore, a free exchange of information raises issues of privacy and security of data which cannot be easily circumvented, especially when information is being aggregated from a range of public, voluntary and private organisations. Consequently, developing links with other organisations in order to pursue public policy making strategies involves a complex process of identifying specific information flows and demonstrating mutual advantage through information exchange. This is a process for which local authorities are better placed than most other local agencies to pursue: but it is nonetheless one which is fraught with inherent difficulties.

Second, local authorities need to be instrumental in setting the standards for information flows between disparate organisations. This involves defining both the specific technical standards for information exchange, and the broader processes which underpin them. The development of specific technical standards concerns the definition of hardware and software protocols to facilitate the technical links between different systems. The most logical protocol here is the seven layered Open Systems Interconnection (OSI) reference model (ISO 7498) which increasingly dominates large scale ICT investments (especially as a consequence of EC Directive 87/95), although practical interpretations of these

standards has led to a wide range of diverging applications which place limits on its validity (Pratchett 1994a). Beyond subscribing to open systems standards, however, local authorities must ensure that technical developments support integration of information rather than militate against it. This might involve more than simply defining technical standards -it might include elaborate consultation with other partnership agencies whenever ICT investments are being considered. Alongside these technical considerations authorities also need to define standards for the processes of information collection, storage and exchange. These range from the complexities of ensuring the uniform storage of data (for example, many local authorities still have internal difficulties with addresses because systems store addresses using a wide variety of different conventions) through to processing rules to secure consistency of information. The principal objective should be to confirm that all data refers to the same groups over the same period of time. Achieving such consistency of data when aggregated from a number of different sources, however, presents a formidable challenge far in excess of the technical difficulties confronting these organisations.

Third, if local authorities are to be the focus of public policy making for their localities they need to concentrate more resources in systems which monitor local social, economic and environmental factors. To some degree this is an extension of the conventional role of the research and intelligence units which sprang up in a number of local authorities in the late 1970s. But in many other respects it involves considerably more than the limited activities of such policy units. It requires authorities to become more closely involved in monitoring and scrutinising the activities of other agencies that are active in their locality, especially local quangos. Hence there is a need for a broad range of data-gathering techniques to ensure that the necessary information is collected on all agencies which impact upon the local environment. As Geddes (1996) notes, this is a potentially wide range of actors, from international economic interests through to local employers. Successful management of public policy in localities, however, will require sophisticated intelligence gathering on all of these actors, even where the ability of individual authorities to influence such interests is limited. Local authorities, therefore, will need to develop the capacity to supplement existing information if they are to understand their local environments and act as the focus for policy making across agencies.

Fourth, for local authorities to adopt a strategic position relative to other organisations - one which involves them in both formulating and coordinating policy across a fragmented polity - it is necessary for them to develop advanced modelling capacities. Again ICTs have a vital role to play in developing these abilities. When combined with sophisticated data-collection strategies advanced modelling capabilities would endow elected local government with the capacity to both analyse contemporary social and economic trends and to model various future scenarios. Consequently, alternative policies could be evaluated within the relatively safe environment of computer models.

In meeting these four challenges local authorities will not necessarily become the focus of public policy making within their localities. New ICTs provide the opportunity for developing such a role, but they would be only one component in a complex of organisational, political and technological factors. It is implicit in the local governance agenda that local authorities need to address the changing constitutional, organisational and political relations that the move towards new modes of governance engenders. The argument here, however, is that there are also a number of technological possibilities and opportunities which they should consider within the same context. But, like democracy, local authorities continue to ignore the potential advantages of ICTs in this area, despite their desire to adopt such strategic roles. Consequently, where ICTs are being used to support the public policy making activities of local government it tends to be in a largely haphazard and uncoordinated way. Few (if any) authorities seem willing to invest substantial resources in developing the ICT based systems for enhancing public policy making. If local authorities want to develop this capacity then it is necessary for them to place greater emphasis upon the management of ICT resources to achieve these ambitions.

Service delivery

In contrast with both the local democracy and public policy making roles of local government, it is in the area of service delivery that the vast majority of local government ICT resources are invested. According to various SOCITM surveys, annual IT

expenditure by local authorities has been around £1,000 million throughout the 1990s. In 1993 it peaked at £1,100 million (SOCITM 1993) before slipping back to £1,064 million in 1994 (SOCITM 1994). Although these figures are somewhat contestable (for example ICL (1988) estimated that local government IT expenditure would be in excess of £1,000 million by 1990) they are nonetheless useful in providing an indication of the scale of ICT investments in local authorities. They are even more useful to the argument being developed here when they are broken down into their component parts. Thus: in 1992 local authorities spent £145 million on 'IT related to Housing' (SOCITM 1992, p34); in 1993 Social Services departments consumed an estimated £86.8 million of ICT resources while Highways consumed over £50 million (calculated from estimates in SOCITM 1993); similarly, the one-off costs for establishing Council Tax systems were estimated as costing local government over £70 million with annual running costs amounting to an estimated £170 million (SOCITM 1993). When the likely costs of other important local government services such as education and libraries are taken into consideration it is evident that the vast majority of local government ICT expenditure is consumed either directly or indirectly in the provision of services.

There can be little doubt that ICTs are of considerable benefit to the services provided by local government. Although there are some exceptions the Audit Commission (1990) observe that ICTs generally enhance both the efficiency and effectiveness of services. Overall, therefore, they conclude that local authorities gain value for money from their ICT investments. In isolation these conclusions are commendable, and this thesis does not take issue with either the empirical findings of the audit commission, or their normative assertions that future investments should seek to improve on existing systems. Rather, the concern here is that there is too much emphasis upon developing the service focus of ICTs. Hence, this chapter, and indeed this thesis, argues that the exclusive attention to gaining improvements in the efficiency or effectiveness of services, with particular emphasis upon efficiency, leads to an imbalance of focus in which ICTs are valued purely for their ability to contribute to cost savings in service delivery. In short, the argument is that where the attention of authorities is concentrated too much upon using ICTs to improve services there is a tendency to ignore the greater benefits of informatization and the ways in which ICTs can contribute to the broader roles of local government.

Conclusions

This chapter has sought to define the role and purpose of contemporary local government by relating the typology of extant change developed in chapter 3 to a normative account of the functions and values that have underpinned the evolution of modern local government. Thus, the role of elected local government was defined as encompassing a combination of local democracy, public policy making and service delivery. The key conclusion here is that while the potential for the first two roles remains underdeveloped there has been an over-concentration of local government on aspects of service delivery. Recent trends in public sector management imply a diminishing role for local government in direct service delivery, placing it in an increasingly vulnerable position relative to the growing array of single-function agencies active at local level. Consequently, it is only by developing its other roles that local government can claim a legitimacy for its existence.

This chapter has also analysed the contribution of ICTs to the various roles of local government. It has demonstrated that ICTs could make important contributions to each of the three defined roles of local government but that there is a strong bias towards investment in service delivery which militates against the realisation of the other potential benefits of ICTs. Consequently, local authorities treat ICTs as primarily a tool for achieving efficient service delivery and tend to marginalise their capacity for enhancing the other roles. While local authorities fail to capitalise upon the latent capacity of ICTs to develop the democratic and policy making roles of local government they remain unable to assume a more central role in the local polity. New ICTs are one of the key resources which local government can use to develop all its roles.

These conclusions have important implications for the remainder of this thesis because they provide the core justification for analysing the influences on ICT policies in local government. They show that ICTs have profound and enduring consequences for local authorities both in terms of their contemporary effect on the role and purpose of local government and in terms of their long term potential in shaping the ability of individual authorities to adapt to new roles. The ways in which ICT policies are developed and the

factors that influence them, therefore, are intrinsically and inseparably linked with the broader fortunes of local government. The following chapters will argue that ICT policies in local government are dominated by a policy network which is inadvertently but effectively distorting ICT policies in favour of service delivery functions and away from the other important roles of elected local government. Given the significance of new ICTs to all three roles of local government this has implications for the ways in which authorities can develop their functions in the modern polity. The following chapters move on to provide a theoretical and empirical analysis of the ICT policy network and its influence on ICT policies in local government, before discussing the significance of this for the future of local government.

5.

ANALYSING ICT POLICIES IN LOCAL GOVERNMENT: A POLICY NETWORK APPROACH

Introduction

The analysis so far has concentrated upon developing three principal themes which underpin this thesis. First, it has shown at a very broad level that ICTs have profound and enduring effects on all aspects of social, economic and political life. On its own this assertion is significant enough to justify more detailed analysis of ICT policy making in local government. Second, it has argued that the extensive and multi-dimensional nature of change in local government has made it especially predisposed to ICT based solutions to overcome its apparent crises and problems. Within the context of a pervasive process of reform occurring concurrently along several dimensions new ICTs offer both short-term solutions and longer-term implications for the development of local government. Third, it has shown that despite the potential for local government to engage in a three-fold set of roles, ICT policies have focused almost exclusively on service delivery. The main concern here is that given the sustained central government attack on local government and the gradual distancing of local authorities from direct service delivery, the concentration of ICT resources on enhancing this role leaves local authorities in an increasingly vulnerable position. Furthermore, such a concentration of ICT policies on service delivery distracts from the more advanced application of ICTs which could be developed to enhance other roles.

This chapter moves on from this broad analysis of themes to a more specific focus on ICT policy making in local government. It argues that ICT policies have developed, and continue to develop in the uni-dimensional direction of supporting and enhancing service delivery because of the existence of a powerful policy network focused around ICTs in local government. It argues that this policy network provides a shared set of values and

assumptions about the role of ICTs in organisations which direct and constrain the functions for which they are used. In particular, it argues that the existence of an ICT policy network explains the preoccupation of ICT policies with delivering efficient services, and the inability of local authorities to recognise the potential of ICTs to support and develop local democracy or public policy making capacities. The network of actors involved in developing and implementing ICT policies for local authorities are locked into a managerial paradigm which views service efficiency as their primary goal and marginalises all other initiatives as being of secondary importance. Despite the dynamic nature of technological advances across the economy, therefore, ICT policies in local government tend to be characterised by both inertia and uniformity in so far as they continue to reinforce existing concerns with service efficiency and managerial effectiveness, and largely ignore opportunities to contribute to the democratic or public policy making roles of local authorities.

The principal aim of this chapter is to substantiate these assertions by developing the policy network concept as a framework for analysing ICT policies in local government. Within political science there has been considerable debate over the meaning and value of policy networks as a theory of interest mediation (Dowding 1995). Consequently, a plurality of definitions have emerged which seek to clarify and classify the various aspects of policy networks (cf. Rhodes 1986a, Wilks and Wright 1987, Jordan and Schubert 1992, Marsh and Rhodes 1992, *inter alia*). If the policy network concept is to be useful in analysing the influences on ICT policies in local government it is necessary to be clear on both the interpretation of the network framework adopted here, and the limitations of the model to the empirical analysis which follows. This chapter develops the concept of a local government ICT policy network. It draws upon a range of network literature to review both the main theoretical propositions and the principal criticisms of the approach, before going on to develop a more specific focus upon the ICT policy area. But it is more than simply a literature review. It concentrates upon analysing the existing literature in order to tease out the principal propositions as they apply to ICT policy making in local government. It also brings together a number of disparate criticisms of the network approach and develops a comprehensive critique from which a more relevant application of the framework can be created. It adopts an approach which is critical of existing

applications of policy networks but not dismissive of the important analytical insights which it can deliver.

This analysis differs from the accounts offered by other authors because it highlights the main themes that comprise the network approach by drawing upon a range of theoretical developments in the area. Unlike other works it does not seek to identify and classify different types of network, or to develop a typology which is dependent upon particular political or socio-economic conditions. Rather, it concentrates upon developing the broad themes which characterise the network approach and which distinguish it from other approaches - important themes which are often lost within the detailed descriptions of different categories that are offered by other authors. It also differs from the approach offered by other authors because it acknowledges the major limitations of the network framework and works within these to develop a more appropriate application of its core propositions. This enables the chapter to develop a sophisticated but realistic framework which can be applied to the analysis of ICT policy making in local government. First, it analyses the existing literature on policy networks in order to identify the key themes which characterise the approach. This section views policy networks as an emergent concept in which the precise characteristics of networks, and their relationships, need greater clarification. Second, it develops a critique of the network approach in order to recognise its limitations as an analytical framework. Finally, it builds upon this broad analysis of policy network theory to develop a more specific framework that can be applied to the analysis of local government ICT policy making.

Policy networks as an emergent concept

Any analysis of policy networks theory must start with the recognition that there is a great deal of confusion over the precise meaning of the term. This absence of clarity is reflected in the differing methods by which the term is applied to policy sectors, and eventually, by the differing conclusions which authors reach. As Raab notes:

Some talk about policy communities, while others, often referring to the same empirical phenomena, talk about policy networks. Some look at partnerships.

Issues, policies, fields, areas and sectors are among the terms that are used, often interchangeably and imprecisely to locate the subject of research. A serious problem is that the criteria for identifying phenomena are often implicit or ambiguous. It is difficult to match up like with like (Raab 1992, pp69-70).

Thus, a major difficulty with the literature on policy networks is that it is characterised by ambiguity and imprecision, and any attempt to utilise the theory must first engage in some semantic definition of the term, for as Jordan argues in his discussion of American literature on policy networks:

...unless we attain (and retain) some rigour in the use of language, debate degenerates as contributors offer their arguments in a private code that cannot be refuted (Jordan 1990, p319).

In order to give substance to any discussion of networks, therefore, it is important first to define how the concept is to be interpreted, and to relate this definition to other discussions of policy networks.

Most definitions of networks refer back to Benson's original characterisation of policy sectors:

The policy sector is a cluster or complex of organisations connected to each other by resource dependencies and distinguished from other clusters or complexes by breaks in the structure of resource dependencies (Benson 1982, p148).

Thus, networks involve a number of interdependent organisations which demonstrate some form of internal unity and co-operation through the exchange of resources and which are separated from other networks by boundaries to the exchange of these resources. Resources in this context are any elements which enable individual organisations to fulfil their objectives. To this end, Rhodes (1981) has identified five types of resources (constitutional-legal; hierarchical; financial; political; and informational) which public sector organisations may exchange in pursuit of their 'goals'.

Other authors have sought to extend this original characterisation to make the concept more relevant to studies of public policy making. Schneider (1992) offers a two-fold definition of policy networks which first recognises networks as the substantive interaction of a plurality of organisations in order to effect policy outcomes (similar to Benson,

above), and second, argues for a formal concept based around patterns of interactions and relationships. In this second conceptualisation linkages between distinguishable points or events are the focus of attention, and networks emerge wherever these linkages form identifiable patterns. As Schneider argues, these definitions are not mutually exclusive but highlight different aspects of the same concept. Any definition of policy networks must recognise the complex multi-organisational nature of policy processes. At the same time it must also recognise that this complexity is structured within patterns of interdependence which stabilise policy sectors and provide for a regularity of relationships and interactions.

The internal structure of policy networks is at the heart of debates about network features and characteristics. Consequently, it is important to recognise that the concept does not offer a single structure but that it covers a wide range of structures which are best represented by the network metaphor. Jordan and Schubert (1992) offer 11 types of structures which they consider fall into the category of networks and which are distinguished from each other according to the number and type of participants, the extent of sectoral involvement, and the scope and permanency of the network involved. To each type of network they are able to offer a unique (but often familiar) label, ranging from various types of corporatism (state, societal and meso-corporatism) through to a number of pluralist models. Van Waarden (1992a) offers a similar typology of networks, although he introduces a number of different labels and distinguishes between them across 7 dimensions. Elsewhere, Rhodes (1988) has identified a more limited range of five types of network in British government which are distinguished across four dimensions (ie. interests, membership, interdependence and resources). This latter framework has become the most dominant and enduring model of policy networks in UK political science, not least because it has underpinned a number of major academic studies (cf. Marsh and Rhodes 1992a, Smith 1993, *inter alia*).

While these typologies are all useful means of demonstrating the relationship of network theory to previous arguments surrounding models of interest mediation such as 'iron triangles' (for example, Maass, 1951, Lowi, 1979) and 'issue networks' (Heclo, 1978), the key point to emerge from them is that no single model is preeminent. Indeed, as Van

Waarden (1992b) argues, individual nations cannot be characterised by one type of network. Instead it is possible to conceptualise a continuum along which the various models and structures can be placed. Consequently, Marsh and Rhodes (1992b) argue for a continuum based around the relationships of network types in which open and atomistic 'issue networks' form one extreme, while closed and highly integrated policy communities form the other. As the authors themselves note, however, the difficulty with this continuum is that:

...while it is easy to see why the policy community and the issue network are at the ends of the continuum, the locations of the other types of network on the continuum are less obvious (Marsh and Rhodes 1992b, p21).

Beyond these broad definitions of the policy networks concept, however, there remains a great deal of ambiguity and imprecision. While some consensus exists over the principal characteristics of policy networks individual formulations of the theory emphasise certain characteristics and disregard others. There is, therefore, a need for a reconstruction of the policy network concept which highlights the main analytical themes without being drawn into the erudite disputes which have characterised many of its recent applications. Seven key themes can be identified which are common to most analyses, and which give emphasis to the contribution which network approaches can make to the study of policy making and implementation:

- the central nature of networks;
- the informal and voluntary nature of networks;
- the complexity of networks;
- the membership barriers created by networks;
- the interdependence of network actors;
- the stability of networks;
- the extra-governmental nature of networks.

Each will be dealt with in turn here.

The central nature of networks

There is general consensus among most authors that networks are a significant feature of modern government. As Benson (1982, p137) states, 'interorganizational networks are centrally important features of the social structure of advanced industrial societies'. It follows that every policy sector will form one or more networks from the principal actors who have an interest in that sector. This argument is taken up by many authors who agree that networks are a central (though not necessarily helpful) component of most 'democracies' (see for example: Marsh & Rhodes 1992b; Raab 1992). The significance of this lies not only in the justification for investigating networks (i.e. they need to be investigated because they are important) but also in the implications which their central nature has on policy processes and outcomes. In particular, a number of authors have questioned the extent to which networks fit with traditional accounts of democratic government. As Raab explains:

The games of a policy network go on behind relatively closed doors, through which only relatively few can enter; this is quite different from the suppositions about open, accessible democratic processes (Raab 1992, p74).

Similarly, Yishai's (1992) discussion of health policy making in Israel concludes that networks exist more because they are efficient than because they are equitable in their distribution of resources. Marsh and Rhodes (1992b) also note the absence of democracy and accountability in most case studies of networks, and warn that the issue will not fade simply through being ignored. Nevertheless, to many the existence of networks is a political reality (Jordan and Schubert 1992, p11) which need not be clouded by problems of political philosophy. Thus, although there is some consensus on the central importance of networks to modern governments, there is less agreement upon their normative implications, especially their effect upon democracy and accountability.

The informal and voluntary nature of networks

Networks are normally based around informal connections and structures. Relationships within a network are not governed by any formal, constitutional rules, and the presence

of a network is rarely presided over by a governing body. This is not to argue that networks do not observe agreed 'rules of the game', for as Rhodes notes, such rules are a fundamental component of inter-network relationships (1988, p87). What it does suggest, however, is that rules emerge through negotiation and consensus rather than through formal constitutional mechanisms. Similarly, rules can change through negotiation without the need for any formal mechanisms to be followed. Thus, as Jordan and Schubert (1992, pp11-12) concede, policy making is now vested in non-legislative groups who ignore the formal institutional status of participants. The effect of this informality of structure is to remove the policy network from the scrutiny of the public and, indeed, to distance policy decisions from the direct scrutiny of the constitutional bodies established to protect public interests (e.g. Parliamentary Select Committees, National Audit Office, etc). For example, the inquiry of the Trade and Industry Select Committee into Information Technology acknowledged that while information technology is all-pervasive, the government has 'no strategy for IT and fails to coordinate the various aspects of the subject in which it is inevitably involved' (1988, para 111). The implication of this statement is that ICT policy is decided elsewhere through interaction and negotiation between the interested parties (e.g. through a network). Such a conclusion indicates the informality and opaqueness of the networks which have emerged around the area of ICTs. The informality of networks compounds the problems of accountability noted above.

If the informal nature of policy networks is acknowledged then a supplementary feature of this characteristic is that actors participate in a network out of choice rather than through coercion. Consequently, Jordan and Schubert (1992) refer to 'voluntary social action' in describing the relations which compose a network. Similarly, Wilks and Wright (1987) stress the importance of informal relations based around the securing of common benefits (p286). Hence, networks must be seen as informal, voluntary collaborations of interested parties, rather than formally constituted and managed structures for policy making.

The complexity of networks

Policy networks are characterised by complexity. Networks have evolved in direct response to the increasing complexity and functional differentiation of government (Richardson and Jordan 1979, Rhodes 1988). As a consequence it is an implicit assumption of many analyses of networks that they are based around, and normally dominate, policy sectors (Jordan and Schubert 1992) and sub-sectors (Jordan, Maloney and McLaughlin 1994). It follows that the fragmentation and sectorization of government is both embodied in, and enabled by, the emergence of networks in various policy areas. Hence, successful government requires the control and co-ordination of disparate and sometimes conflicting networks (Hanf and O'Toole 1992).

Networks are not simply a factor of the broad complexity of modern government, however. The internal structures of networks themselves are inherently complex (Jordan 1990). Thus, Hanf and O'Toole emphasise the multi-organisational nature of actions, arguing that:

The complexity of policy problems is both reflected in, and amplified by, the complexity and polycentrism of the institutions through which policy must be addressed (Hanf and O'Toole 1992, p165).

Similarly, in attempting to define networks Schneider contends that:

Policy emerges not from centrally concerted or programmed action but from the autonomous interaction of a plurality of interdependent organizations or individuals (Schneider 1992, p110).

The emphasis in both instances is that the internal processes of networks are essentially elaborate and sophisticated and cannot be decomposed to a simple set of relations. This complexity is compounded by the informal nature of networks noted above. Networks have emerged as a consequence of the more general processes of societal differentiation (ibid, p112), and are inherently complex. Analysis of policy networks must acknowledge this inherent complexity and accept that policy outcomes must be understood within this context.

Within the general consensus on complexity, however, there is some dispute about the focus of policy networks. Thus Rhodes (1988) maintains that in unitary structures of government, such as that of Great Britain, the hub of a policy network must be located within central government, or at least within a central government department (p82). He argues that this focus on central government departments is inevitable because of the asymmetric distribution of resources between the centre and other organisations and the consequent capacity of the centre to take unilateral action. By contrast, Hanf & O'Toole (1992) maintain that networks are essentially polycentric and that any action will require the co-ordination of a number of competing interests to be successful. To argue that networks are focused around and dominated by central departments assumes that the centre has an interest which it wishes to be predominant, and that it possesses the resources to manipulate the network in favour of that interest. This may well have been the case in the high-profile policy areas studied by Rhodes, but this emphasis on central government predominance may be less useful in the lower-profile areas where a more multi-centred approach is required. The fact that a network exists at all implies that the centre is just one of a number of actors seeking to gain advantages from membership, and indeed, depends upon other actors for the development and implementation of policy. If the centre attempts to take unilateral action it forfeits its right to membership of the network and loses the cooperation of those on whom it depends. This is a powerful check upon the asymmetry of resource distribution in policy networks. Indeed, in the context of ICTs it can be argued that many of the key resources lay beyond the grasp of public organisations in the hands of private organisations. Consequently, if it is accepted that networks are essentially polycentric this becomes a factor of the inherent complexity.

The membership barriers created by networks

A major theme in studies of policy networks is the extent to which they represent closed and exclusive interests. Although the policy network metaphor has been used to cover all forms of interest mediation from open and atomistic issue networks through to closed and integrated policy communities, the main focus of network analysis is on the more closed and exclusive forms of networks. Thus, as the most closed and integrated form of

network, policy communities are characterised by their ability to maintain entry barriers which in turn provide internal cohesion and stability (Grant 1992). For example, in his study of the merger and take-over policy community Wright (1988) highlights access to specific resources, and the ability and willingness of actors to use those resources, as being a defining characteristic of the members of that policy community. Individuals or organisations without access to those resources are unable to enter the community. Consequently, a number of typologies of policy networks use closure as a key dimension along which networks vary (Wilks and Wright 1987, Rhodes 1988, Rhodes and Marsh 1992a, Van Waarden 1992a).

A further issue related to the concept of exclusivity is the extent to which policy networks operate in a covert and obscure manner. Traditional structures in public administration do not recognise the informal constellations of interests which policy networks represent, yet as already noted, their impact upon the functions of government is potentially great. Policy networks operate beneath the surface of government and thus are not considered within traditional discussions of structure or functions. To some this obscurity is seen as an essential but not necessarily sinister process through which the business of government is performed (Richardson & Jordan 1979). To others, however, this process raises more substantial concerns over the break-down of traditional distinctions between public and private functions which in turn raises questions over the accountability and legitimacy of parliamentary democracy (Raab 1992, pp72-74; Yishai 1992, p106). Which ever approach is adopted it is apparent that policy networks are generally hidden from formal public scrutiny, and hence, are not subject to normal forms of democratic accountability. In addition, the very nature of this obscurity makes their impact and significance difficult to analyse in any empirical way. Consequently, the ability of networks to exclude certain interests and to favour others becomes even more important. If it is accepted that networks are at the heart of the policy process, then it becomes increasingly important to understand how these networks operate, and how checks and balances can be introduced to ensure that equity and democracy are served.

The interdependence of network actors

The interdependence of organisations is another major characteristic of policy networks. Although this has already been touched upon under the heading of complexity it is worth returning to here because of its fundamental nature. Interdependence of organisations is not simply a product of the complexity of policy networks, it is an intrinsic factor in establishing that complexity. Thus, Richardson and Jordan state that:

In describing the tendency for boundaries between government and groups to become less distinct through a whole range of pragmatic developments, we see policies being made (and administered) between a myriad of interconnecting, interpenetrating organisations (Richardson and Jordan 1979, p74).

Elsewhere, Mulford and Rogers (1982) have sought to explain various models of inter-organizational co-ordination as an important pre-requisite to understanding contemporary policy processes. Van Waarden (1992a) emphasises a more enduring linkage pattern of relationships based upon the interdependence of various actors. The fundamental principle at issue here is the concept that a network is bound together by the inter-relatedness of the organisations from which the network is composed. Consequently, unilateral action within a network is not possible. Each actor within the network has a dependence on a number of other actors for the exchange of some resource. Policy outcomes are a result of interactions between a number of organisations (actors) who collectively form a policy network. For example, in his study of the post-war education policy community Rhodes (1988) highlights the interdependence of the Department of Education and Science (now the Department for Education and Employment), the Local Education Authorities and the teachers' unions. It is this mutual dependence on one another which initially unites the actors and provides the cohesion necessary for the long term development of the network. It follows that exclusion from the network may occur where no interdependence exists. Similarly, if the distribution of resources changes within the network this may lead to its fragmentation as new dependencies emerge and old ones dissolve. Interdependence of organisations, therefore, is a fundamental characteristic of network theory.

While interdependence of organisations implies consensus as to the boundaries, rules of the game and co-operation over the exchange of resources, it is important to note that interdependence does not assume a common purpose for all organisations in the network. Indeed, it is possible to envisage circumstances where the objectives of two organisations in a network may be diametrically opposed, but where at the same time co-operation over the exchange of resources is seen as being mutually beneficial. Thus, in the case of central-local government relations, central government objectives of financial restraint invariably conflict with local authority objectives of budget maximisation, but rarely does this conflict of interests lead to a break-down in relations. All actors in a network must perceive, and continue to perceive, that some benefits accrue from the interdependencies which the network forces upon its participants. As Hanf and O'Toole argue:

...structures may well be organised around common policy programmes or policy concerns but this does not mean that everything runs smoothly or harmoniously... Consensus among the participating actors must be constantly renewed through negotiations aimed at redefining the expected pay-offs and the conditions of participation (Hanf and O'Toole 1992, p177).

Hence, policy networks must be conceptualised as dynamic structures which are constantly re-adjusting to changes in actor perceptions and conflicting interests. Negotiation and bargaining are essential ingredients in the dynamic process of establishing and maintaining consensus between the various participants of a network. At the same time, however, it is worth noting that this dynamism may well be geared towards maintaining the long term structure and balance of interests within the network: a form of static or reactionary dynamism!

The stability of networks

Issues of stability stem from the interdependence of organisations. Policy networks are generally characterised and measured by the extent to which they provide stability within the policy sector, and hence the reasons for this stability are the subject of great interest. Stability in this context is concerned with both the regularity of relations within the network and the predictability of outcomes from the network. Following from an acceptance of organisational interdependence Jordan and Schubert believe that there are

clear benefits to actors who regularise transactions and hence they argue that policy networks will always tend towards an ordering of relationships:

We suggest that the mutual advantages in terms of a 'logic of negotiation' generates a tendency for groups/bureaucratic agencies to structure stable rather than ad hoc relations - just as in markets buyers and sellers tend to enter regularized relations (Jordan and Schubert 1992, p16).

Thus, policy networks become institutionalised channels for communication and interaction in which the participants recognise certain advantages in conforming to the rules of the institution. Van Waarden (1992a, p31) takes this concept one step further by borrowing the principles of 'transaction-costs economics' (Williamson 1985) to refer to a situation whereby participants can make recognisable savings by institutionalising relations:

Interest groups save costs of repeated efforts to gain access and influence by building a more permanent relation of trust and resource dependence. Administrators on the other hand save on costs of information collection and efforts to acquire assistance and co-operation. The emergence, structure and stability of the network depends on the conditions, identified in transaction-costs economics, for forming organizations: bounded rationality, fear of opportunistic behaviour, economic and strategic uncertainty, frequency of transactions, asset specificity (uniqueness of resources), and small numbers (Van Waarden 1992a, p31).

The regularisation of interactions not only provides for the savings on transactions which Van Waarden identifies, however, it also acts as a very effective form of closure, excluding those actors who are unable to offer a regular contribution to the resource exchange process. Consequently, policy networks by their very nature are inclined towards providing an ordering of relations among actors with shared 'appreciative systems' (Vickers 1967). Indeed, it was noted earlier that some definitions of networks require the identification of a pattern of interactions. Thus, stability is both a quality sought by network participants, and a consequence of its existence. It follows, therefore, that permanency and stability are further dimensions on which policy networks need to be judged.

The effects of stability are both good and bad. On one hand, stability offers the opportunity for the predictability of outcomes, and hence, for the framing of assumptions

based on past outcomes. On the other hand, the stability of policy networks is seen as a major source of policy inertia in many sectors (Rhodes and Marsh 1992a). The need for negotiation and consensus throughout the network leads to incremental rather than radical changes in policy. While the role of networks in the process of policy change will be dealt with in more detail later in the context of ICT policy networks, the effects of this inherent stability are important at this point, if only to highlight the negative implications of networks, and especially policy communities.

The extra-governmental nature of networks

The final characteristic of policy networks is their extra-governmental structure. Implicit in nearly all discussions of networks is the assumption that the community under investigation incorporates a cross-section of public and private interests at a range of levels. The precise combination of interests varies according to the network under investigation, but it invariably includes a range of governmental and private interests. For example, in his study of the housing policy community Houlihan (1988) identifies a wide range of central government departments (and Quangos such as the Housing Corporation), local authorities, professional associations and private and voluntary sector organisations who participate in the network. His observations are supported by Laffin's (1986) own empirical work on the professionalisation of the housing policy community. The integration of public and private interests in the policy networks model is useful, because it extends the boundaries of traditional models of public administration and acknowledges that public policy is the outcome of interactions among a cross-section of public and private interests. Groups are no longer relegated to the pluralist role of 'influencing' policy making institutions, but are recognised as being full participants of the policy making machinery. In relation to the emergence of local governance and the enabling authority this concept has even greater resonance. This returns the debate to the normative implications of the accountability and control of networks. The mixture of public and private interests is an important component of the network theory which, when combined with other network characteristics (such as the obscurity and apparent absence of accountability associated with most networks, and their ability to exclude large sections

of the population), raises significant concerns over whether and how networks should be held to account for their policy processes and outputs.

The foregoing review of the literature on policy networks provides a fresh analytical stance from which to view the policy networks that encompass ICT policies in local government. The freshness of this approach is more than simply a re-ordering of existing material. By presenting and analysing the material in this way it is possible to develop a broader understanding of the network concept which is relatively free from the constraints imposed by any single author's approach. More than this, however, it is also possible to draw attention to the principal issues which policy networks raise - issues which can be lost when authors become obsessed with developing detailed classificatory schemes which fragment broad frameworks into extensive empirical categories. Thus, this section has not adopted the typologies offered by others (e.g. Van Waarden 1992a, Jordan and Schubert 1992, Rhodes 1988) but has constructed an 'ideal-type' framework which offers a multi-dimensional perspective against which networks can be compared and analysed. It offers seven elements which capture the fundamental and defining qualities of policy networks and covers a broad range of models of interest mediation which collectively account for the policy processes in most sectors of the economy. It accepts that they are a central feature of modern democracies and argues that although these networks are informal, they are characterised by a complex pattern of dependencies and resource exchanges among a variety of public and private actors. These networks provide for regularised patterns of interactions, which offer stability to policy sectors and a degree of predictability over policy outcomes.

Criticisms and limitations of the policy network approach

Since their introduction to mainstream UK political science in the early 1980s policy network approaches have attracted a great deal of interest and have been used as the theoretical basis for analysing a host of different areas as diverse as agricultural policy (Smith 1993, Jordan *et al* 1994), education policy (McPherson and Raab 1988, Raab 1992), industrial policy (Wilks and Wright 1987), transnational local authority networks

(Bennington and Harvey 1994) and the national world of local government (Rhodes 1986a), as well as its original focus on central-local government relations (Rhodes 1981, 1986b, 1988). Furthermore, the network concept continues to underpin many research projects in political science. The interest in networks has come about partly because they have great normative appeal. It is a concept which explains relationships between a variety of actors and accounts for policy outcomes in terms which complement rather than challenge traditional pluralist analyses of policy development and implementation. In short, policy networks are a common-sense way of explaining inter-organisational relations at a sectoral, or sub-sectoral level.

But alongside the proliferation of network analyses has been a growing body of criticism which argues that the broad concept is a useful heuristic metaphor but is inappropriate for development into a rigorous theory of the state which is capable of explaining a full range of institutional processes and policy outcomes. While such criticisms do not entirely invalidate the network approach they do place limitations upon its application to particular policy areas and on its value as an analytical tool. Consequently, if the network concept is to be used effectively to analyse ICT policies in local government it is necessary first to be aware of its theoretical and empirical limitations, and to take these into consideration in developing an analytical framework. This section examines six key criticisms of the policy network approach and considers the extent to which they impose constraints on its application.

Typological and semantic confusion

As network approaches have increased in their popularity so a number of authors have attempted to 'contribute' to the development of the underlying theory by adding their own definitions and classifications to contemporary accounts (cf. Wilks and Wright 1987, Rhodes 1988, van Waarden 1992a, Marsh and Rhodes 1992b, Smith 1993). The aim of many of these contributions has been to add to the theoretical understanding of networks by clarifying concepts and emphasising distinctions between different types of networks. As noted earlier, however, the result has been a proliferation of confused and inconsistent

terms applied to similar phenomena. For example, van Waarden (1992a) lists seven dimensions and eleven categories across which policy networks may vary and uses this to identify 37 different sub-classifications of networks. By contrast, Rhodes and Marsh (1992a) offer a typology of policy networks which vary along a single continuum from highly integrated policy communities to atomised issue networks, depending upon four key dimensions.

Complexities over classifications of network are compounded by disagreements over the terminology used to label particular network features. This semantic confusion is illustrated by the debate over 'policy communities'. Richardson and Jordan (1979) originally used the terms 'network' and 'community' interchangeably as a metaphor capable of capturing the essence of inter-organisational relations at the level of sub-central government. For Marsh and Rhodes, however, policy communities are a special type of network, characterised by:

stability of relationships; continuity of a highly restrictive membership; vertical interdependence based on shared service delivery responsibilities; and insulation from other networks and invariably from the general public (including Parliament)... They are highly integrated (Rhodes and Marsh 1992a, p182).

Yet for Wilks and Wright the same term is reserved for 'a more disaggregated policy sub-system' (1987, p297) in which:

policy community refers to a group of actors or potential actors drawn from the policy universe whose community membership is defined by a common policy focus (Wilks and Wright 1987, p299).

For them policy communities are a broad concept which encompass policy networks within some communities. While the Marsh and Rhodes terminology has tended to predominate over other definitions semantic confusion continues to plague the terminology associated with networks and communities. This confusion has been added to in recent years by the development of a number of other analytical frameworks which implicitly adopt network concepts. Sabatier (1988) develops the concept of 'advocacy coalitions' which emerge among groups of individuals who share core beliefs and assumptions in specific policy areas. His approach shares many of the principles of network theories but employs a very different terminology to describe the policy process (Hann 1995). The

recent emergence of 'urban regime theory' (Stone 1993, 1995) also appears to share many of the characteristics of network approaches with its emphasis upon civic elites forging extra-governmental partnerships in order to secure control over particular policy areas, but again much of the terminology is different (Stoker 1995).

The danger of concentrating theoretical development on producing increasingly sophisticated taxonomies and debating the semantics of particular terms is that the most useful features of the approach become lost within the pedantic complexity of classificatory schemes and labels. Theory is reduced to a concern with the correct meaning of labels rather than with understanding the dynamics of the phenomena under analysis (Dowding 1994). The application of policy networks employed here avoids these difficulties by using the network concept as an analytical tool rather than adding to the semantic confusion by developing further classifications or labels. To the extent that it is necessary to side with one definition rather than another it will employ the Rhodes model of policy networks (Rhodes 1988, Marsh and Rhodes 1992b) rather than any other. Wherever possible, however, it will also seek to draw upon the theoretical contributions of other authors.

Level of analysis

Linked to typological and semantic confusion has been an ongoing debate over the appropriate level at which network analysis should occur. There is a general consensus that policy networks are a 'meso-level' concept which provide a means of articulation between macro-level theories of the state and a micro-level focus on intra-organisational behaviour (Rhodes 1988, Schneider 1992). But this general consensus disguises significant cleavages over the precise meaning of 'meso' in this context. Indeed, the very idea of a meso-level theory appears to polarise macro and micro-level theories and create a considerable amount of space to be filled between the two. Consequently, there has been continuous disagreement over what constitutes a policy area and whether networks are best analysed at a sectoral or sub-sectoral level. This disagreement can be traced back to Rhodes' earlier work on networks (1986a) but it has resurfaced as more of a problem

in recent years as various authors have sought to develop more detailed applications (cf. Smith 1993; Jordan *et al* 1994; Cavanagh, Marsh and Smith 1995; Jordan and Maloney 1995).

Some of the difficulties of developing networks as a meso-level concept have arisen in trying to identify clear links between policy networks and macro-level theories of the state. For example, Smith (1993) attempts to link network change to the macro-level theorising associated with post-Fordism:

Thus, the post-Fordists and post-industrialists are suggesting that there has been major social and economic transformation which has changed the relative power of various groups in society and as a consequence group/state relations will change.

...According to post-industrialists and post-Fordists, social and economic change has created new interests and new forms of politics. These new interests generate an alternative set of issues that result in challenges to the existing policy networks and may lead to the creation of alternative networks (Smith 1993, pp79-80).

Although ultimately Smith is rightly sceptical about the radical effects of post-Fordism and argues that networks have often acted to moderate change, his attempt to define a relationship between the two is unsuccessful because, according to his argument, the nature of change is dependent upon a dynamic relation between macro-level economic development and meso-level networks to an extent which makes them inseparable. Consequently it becomes difficult to see what distinguishes supposedly macro-level theories from the meso-level concept of networks, especially where the two are so intrinsically linked.

More intense disagreement, however, has been focused on the meaning of networks as a meso-level concept: that is, whether policy networks are most significant at a sectoral or sub-sectoral level. For example, at the sectoral level Cavanagh *et al* (1995, p627) argue that 'there is empirical evidence of sectoral networks in policy areas such as agriculture, health, transport and energy'. In response, however, Jordan and Maloney emphasise policy communities as one particular type of network and argue that:

In our view it is the consequence of the characteristics of a policy community that mean they are more likely to be found at the sub-sectoral level (Jordan and Maloney 1995, pp630-31).

Hence, within this debate the authors are able to recognise different networks within the agricultural policy sector, some at the sectoral level centred around the National Farmers Union and others at the sub-sectoral level concentrated around particular farming functions. The debate then focuses upon which of these networks has greater influence over policy and which initiates policy change. This is a largely banal debate which rapidly degenerates into a 'chicken or egg' argument, even though it has dominated much of the recent discourse on policy networks. It takes the analysis back to the semantic terminology of 'networks' and 'communities' and leads to ethnocentric conclusions in which it is necessary to concede that networks have varying relevance at different levels depending upon the policy area being studied. In the long run it contributes little to the development of the policy network concept beyond highlighting the fact that networks may be a multi-level concept which may occur at a number of levels. In other words, broad policy areas may reflect pyramidal structures in which an overarching policy network is composed of a series of sub-sectoral networks and so on. This broader concept which emerges from this debate will be built upon in the next section as a means of understanding the complex and overlapping structure of networks in the ICT policy domain.

Confusion over approaches

A major reason why there is so much debate over the semantic and typological precision of policy networks, and indeed over the level of analysis at which they are most relevant, is because various authors approach the concept from different disciplines and with differing ambitions. Marsh and Smith (1995) identify four competing approaches, each of which make some contribution to the current analysis of policy networks. First, they point to the rational choice approach which emphasises the importance of intentional action on the part of particular agents and analyses network behaviour in terms of preference shaping and intentional choice. This, they argue, is only able to offer a partial account of policy outcomes. Second, they point to anthropological approaches which sees policy emerging from networks of personal interactions. This micro-level focus is most apparent in Heclo and Wildavsky's (1974) classic study of the Treasury and the 'Whitehall

village' in which they seek to understand the informal values and perceptions which provide for a common set of rules and standards of behaviour within the Whitehall community. While Marsh and Smith do not deny the significance of such studies their argument is that this approach ignores the overarching structures of networks which frame personal interactions. Third, therefore, they look to formal network analysis as it has emerged in sociology. Here the emphasis is upon formal measurement and quantification of relationships within networks (Knoke and Kuklinski 1982). Consequently, it gives primacy to the features of network relations rather than to the characteristics of network actors (Dowding 1995). The problem with this kind of study in relation to public policy analysis, however, is that it is both time-consuming and limited in terms of its returns, especially as it often used to confirm assumptions about the importance of particular relationships rather than to challenge them (Rhodes and Marsh 1994). Finally, Marsh and Smith identify the structural approach: the mainstream political science approach which has been the subject of most of this chapter, and which analyses networks in terms of deep structures of resource dependencies which affect policy outcomes. Although their main theoretical development concentrates upon this last category they argue that policy network approaches must learn from all network approaches. Hence, they advocate a 'dialectical approach' to explaining policy making which sees an iterative process between different approaches.

The danger of adopting Marsh and Smith's dialectical approach is that it tends to borrow concepts from different network methodologies without taking into account their epistemological foundations. At best such eclecticism leads to a proliferation of accounts, labels and typologies from which the semantic and typological confusion discussed above emerges. But at worse it may also lead to inconsistent and ambiguous research outcomes which stress contradictory factors depending upon the precise mix of approaches adopted. If the confusion over approaches is to be avoided it is necessary first to resolve the problems of theoretical and methodological eclecticism which threaten to overwhelm the development of the policy network concept. While this thesis does not ignore the value of other approaches to policy networks, therefore, it is based explicitly in the political science perspectives which emphasise deep structures of power and influence as the key analytical message of networks.

Metaphor not theory

Probably the most damning indictment of recent policy network approaches has been developed by Dowding (1994, 1995), especially in relation to the structural approach adopted by the Rhodes model (Marsh and Rhodes 1992b). Dowding offers a range of criticisms of contemporary network analyses, but is most scathing about the Marsh and Rhodes attempt to 'stretch a good idea to far' (1994) by claiming that the policy network concept has been developed into a comprehensive theory of the policy process. According to Dowding the policy network concept began life as a metaphor: a heuristic device which can be used to describe particular types of relations in particular contexts. Consequently, Richardson and Jordan (1979) developed themes from US political science in order to explain the way in which the policy process is functionally differentiated, with each policy area being relatively hermetic. Their use of the policy network concept as a metaphor for the close and enduring relationships between a small group of actors is useful in explaining the uniformity of policy outcomes in particular areas. Although it is unable to explain how the networks themselves develop or change Dowding (1995, p139) concludes, nonetheless, that '[T]he imagery is simply metaphorical heuristics, though no less serviceable for that'. His principal criticism is reserved for those who would develop this metaphorical approach into theory, and especially the developments associated with the Rhodes model (Marsh and Rhodes 1992b, Smith 1993). His argument is that the discourse surrounding policy networks is rooted in unsatisfactory theories of the state (especially pluralist theories) and has concentrated upon terminological and typological classification without developing any explanatory theory about why networks differ and the implications of differing structural relations:

Any theory of the state must specify how we expect different actors (institutions, people, groups or whatever) to behave *under different institutional arrangements*. Few extant theories of the state do this (Dowding 1995, p141 - original emphasis).

Thus, implicit in his argument is that in developing ever more complex classifications and taxonomies, network 'theorists' are concentrating on the wrong issues. If network approaches are to develop into a comprehensive theory of the policy process they need to focus more on explaining why and how particular coalitions form. Dowding argues

that this requires a more rigorous application of game theory and bargaining frameworks within the original concept of power-dependence theory which underpins the Rhodes model.

Although Rhodes and others have made some robust defences of their models in response to these criticisms (see especially Rhodes and Marsh 1994) the overall message of Dowding endures. Policy networks provide a useful metaphor for describing the often intimate and exclusive relations that characterise the policy process in many areas, but run into problems when over-inflated claims are made about their utility as theory. In applying the network approach to the analysis of ICT policy making in local government, therefore, is helpful to use and develop the metaphor as an analytical tool, but it is unhelpful to pursue it any further as a theory of policy making.

Empirical difficulties

The policy network approach is intrinsically empirical, especially where it is used as a heuristic metaphor. Applications of policy networks are invariably attempting to explain policy processes or outcomes in particular policy areas. As a consequence discussion of policy networks generally leads to a complex intertwining of empirical observations and normative theoretical statements (cf. Grant 1992; Smith 1993; Jordan *et al* 1994; Klijn, Koppenjan and Termeer 1995 *inter alia*, all of whom use case studies of particular areas to advance their own normative positions on networks). The discussion here is concerned only with policy network approaches as they have been developed in political science. Empirical methodologies have been developed in other disciplines, especially in the formal network analysis of sociology (Knoke and Kuklinski 1982). Indeed, a criticism of the formal approach is that it is too empirical and misses the more interesting structural implications of networks (Rhodes and Marsh 1994). Yet despite the intrinsically empirical nature of the policy network approach there remains a high level of methodological ambiguity within all studies to date. Most significant of these ambiguities is a failure among authors to develop plausible methodologies for investigating networks and a tendency to depend upon pragmatic observations of policy processes rather than structured

and rigorous analytical techniques. The criticism here is not that researchers are wrong to build methodologies based around such observations but that the pragmatic nature of their frameworks provides only a partial view of the networks with which they are concerned. Hence, the criticism is not of what researchers investigate but of what they fail to investigate because it is not easily observable.

In order to apply the policy network approach to the analysis of ICTs in local government it is necessary to build a more durable and comprehensive methodological approach to analysing networks. In particular it must be capable of looking beyond the focus of easily observable empirical phenomena in order to get to the more opaque or abstruse features of the network. This will be addressed in the next chapter.

Policy outcomes and policy change

Most applications of the policy network approach are ostensibly concerned with analysing policy outcomes or policy change. Yet, as Dowding (1995) argues, network approaches tend to be unsuccessful in explaining radical policy outcomes or revolutionary policy change. The Marsh and Rhodes (1992a) edited volume on policy implementation during the Thatcher years addresses some of this criticism by arguing for the iterative links between policy making and implementation which exist in key policy networks. Policy change has been unsuccessful in many areas, they argue, because successive Conservative governments have failed to take into account the networks of actors who will interpret and alter new policies as they implement them. But Dowding's criticism, and the Marsh and Rhodes riposte, both somewhat miss the point of the network metaphor. The policy network metaphor is useful precisely because it stresses stability in policy processes and outcomes rather than because it emphasises change. Where these networks are juxtaposed against radical economic, political or ideological change, therefore, the metaphor is useful in explaining recalcitrance and inertia in policy outcomes which occur regardless of them, rather than in response to them. Consequently, the criticism that network approaches are unable to explain policy change occurs because critics are focusing on the wrong issue. Policy change occurs in spite of the institutionalised inertia of the network rather than

because of any endogenous characteristics it may have. External pressures bring about policy change either directly, by influencing policy decisions, or indirectly, by changing the distribution of resources across the network, thereby altering the relative power of different actors. Within networks there are considerably more pressures for continuity of policy than there are for change. The interesting feature of the policy network metaphor, therefore, is not how it accounts for change in policy areas but how it explains policy inertia in the face of external pressures for change.

This final criticism raises an important feature of policy network approaches which is given little attention in contemporary analyses. The policy network metaphor is useful not for studying revolutionary change but for analysing uniformity and continuity in policy development despite external pressures for radical change. At first such an approach may appear to be inappropriate for analysing the development of ICT policies in local government. Indeed, it may appear to contradict the observable changes occurring in the use of ICTs. After all, the dynamic world of ICTs is apparently characterised by innovation and revolutionary change in both the technology and its application. Furthermore, the public sector is particularly prone to investing in unproven technologies and to taking risks with new ICTs (Willcocks 1994). For many authors, therefore, ICT policy is the most dynamic and capricious area of local government (see for example, Grayson and Westcott 1996). But it is precisely because the policy network metaphor stresses continuity of policy that it is useful in this context. Although the rapid evolution of ICTs has been widely adopted in local government to develop a range of new applications, these have emerged in a uniform and linear pattern. New ICT investments reflect conventional wisdom about the function and role of these technologies in organisations and the ways in which they should be applied to particular tasks. In particular, this conventional wisdom determines the appropriate application of ICTs in local authorities and sets the criteria against which ICT investments are evaluated. This can best be explained and analysed by reference to the existence of an ICT policy network in local government which influences policy not by resisting technological change, but by channelling it into a consistent set of applications. This network, therefore, provides the conventional wisdom which guides and constrains ICT policy. This is not to deny that there is innovative development of ICT applications in local government, for there are

many examples of such innovation (see for example, Westcott 1994). Rather, the assertion here is that innovation occurs only, or predominantly, along the service delivery dimension of change and ignores the potential for more dynamic change along other dimensions.

Developing a network approach to local government ICT policy making

The previous sections have reviewed the existing literature on policy networks and considered the main criticisms of the approach, in order to develop an 'ideal-type' framework which can be applied in varying degrees to all policy areas. If the framework is to be employed in a specific policy area, however, it must be given greater substance by further analytical development in the policy area to which it is to be applied. The purpose of this section is to develop the framework in the context of local government ICTs by considering three key issues. First, it will ask whether there is one network which covers all ICT policy areas, or whether there are a number, and if so, what the relationship between them is. Following from this argument, a second issue will concentrate upon the principal participants in the local government ICT network, and the significance of interactions between these actors as manifestations of the network. Third, the relationship between the local government ICT network and other local government networks will be explored, especially by reference to the effects of change on these networks, and the role of networks in bringing about change. By addressing these three issues this section will develop a more specific application of the network concept which focuses more specifically upon local government ICT policy making.

One network or many?

This first issue recognises the complexity of the policy area which the broad definition of ICTs encompasses (see Chapter 1 for full definition). It includes a wide and often confusing range of technologies from computers to telecommunication networks, which cut across every sector of the economy. Initially it is important to ask whether there is

a single network which embraces all aspects of this complex area, or whether the policy area has a more fragmented appearance, with separate networks for the different technologies, or indeed, separate networks for each sector of the economy. If the more fragmented view is accepted, then it is also necessary to consider the relationships between the different technological or sector related networks, and the extent to which these different networks are disjointed or united by their activities.

There is some evidence of a broad network of interests which encompasses all elements of ICTs, as defined in chapter 1. Thus, in his analysis of the worldwide dominance of computing which IBM have enjoyed since the 1950s, DeLamarter speculates that IBM's future strategy will be to combine its dominant market share of computing with a similar dominance in the area of communications:

Key to this analysis is the idea that IBM is seeking to capture the high ground in the worldwide communications market, just as it has in computers. From that position, and a further entrenchment in computing, will flow power in potentially every market that depends on interconnected computers - from telephones to robotics, from publishing to genetic engineering, from entertainment to banking, from education to public administration (De Lamarter 1988, p309).

Despite the recent decline in IBM's fortunes, and its limited ability to intervene in the rapidly expanding telecommunications market, it nonetheless follows that a broad network must exist across the full range of ICTs, the members of which may arguably be identified as being IBM's customers and competitors. Taken to its furthest extreme, this argument leads to the consideration of an international policy network. Within Britain further evidence of the ICT network can be found in a number of sources. The witnesses who provided evidence to the Trade and Industry Select Committee report on Information Technology (1988 - page li) represent organisations from all sections of the ICT policy community, from computing (e.g. ICL, National Computer Centre, Apricot Computers PLC) through to telecommunications (e.g. Technophone Ltd, British Telecom) and many software and consulting organisations in between (e.g. KPMG). The very fact that their evidence (both verbal and written) was admitted to the report adds credibility to the claim of each organisation to membership of a broad ICT policy community.

Elsewhere, other organisations also indicate the existence of a broad ICT network and demonstrate their claim to membership of it. For example, Price Waterhouse use their annual Information Technology Review not only to summarise the key issues and trends in the ICT community, but also to demonstrate that they are an important participant in it. In order to produce their review, Price Waterhouse convene a panel of representatives from all sectors of the economy who can be considered network participants. These participants not only reveal current trends in ICTs, they also influence future directions.

Beneath this broadest level, however, networks also exist to cover ICTs in specific sectors of the economy (vertical networks) and separately to cover specific technologies (horizontal networks). Figure 5.1 provides an outline of these networks and their relationship to one-another. In order to simplify the analysis, the sectoral and technological dimensions have been adapted from the Price Waterhouse reviews, thus offering nine industrial and four technological classifications. While these classifications are by no means exclusive or comprehensive, they serve the purpose of illustrating the existence of sub-networks within the broader ICT network. Thus, within the ICT community there is a vertical network for the area of public administration, which encompasses all ICTs for that policy area. Cutting across this vertical network are the technological (lateral) networks which provide for a concentration of interests around specific technologies within specific sectors. Consequently there is a specific community centred around telecommunications within public administration. The emergence of the Government Data Network (GDN) and the limitations of its functionality when compared with its USA equivalent (FTS2000) may offer one example of this network in action (Buckingham & Wyatt, 1992). Links to the other sectoral networks are provided by the lateral (technological) communities, thus ensuring that technological advances are communicated between networks. Links to the other technological networks are provided by the vertical (sectoral) communities, ensuring that the requirements for various technologies are articulated throughout the network. Similar networks exist at each lateral and horizontal cross-section, thus presenting the hypothesis that the broad ICT network is really a network of inter-related sub-networks. In other words, it is a network of networks.

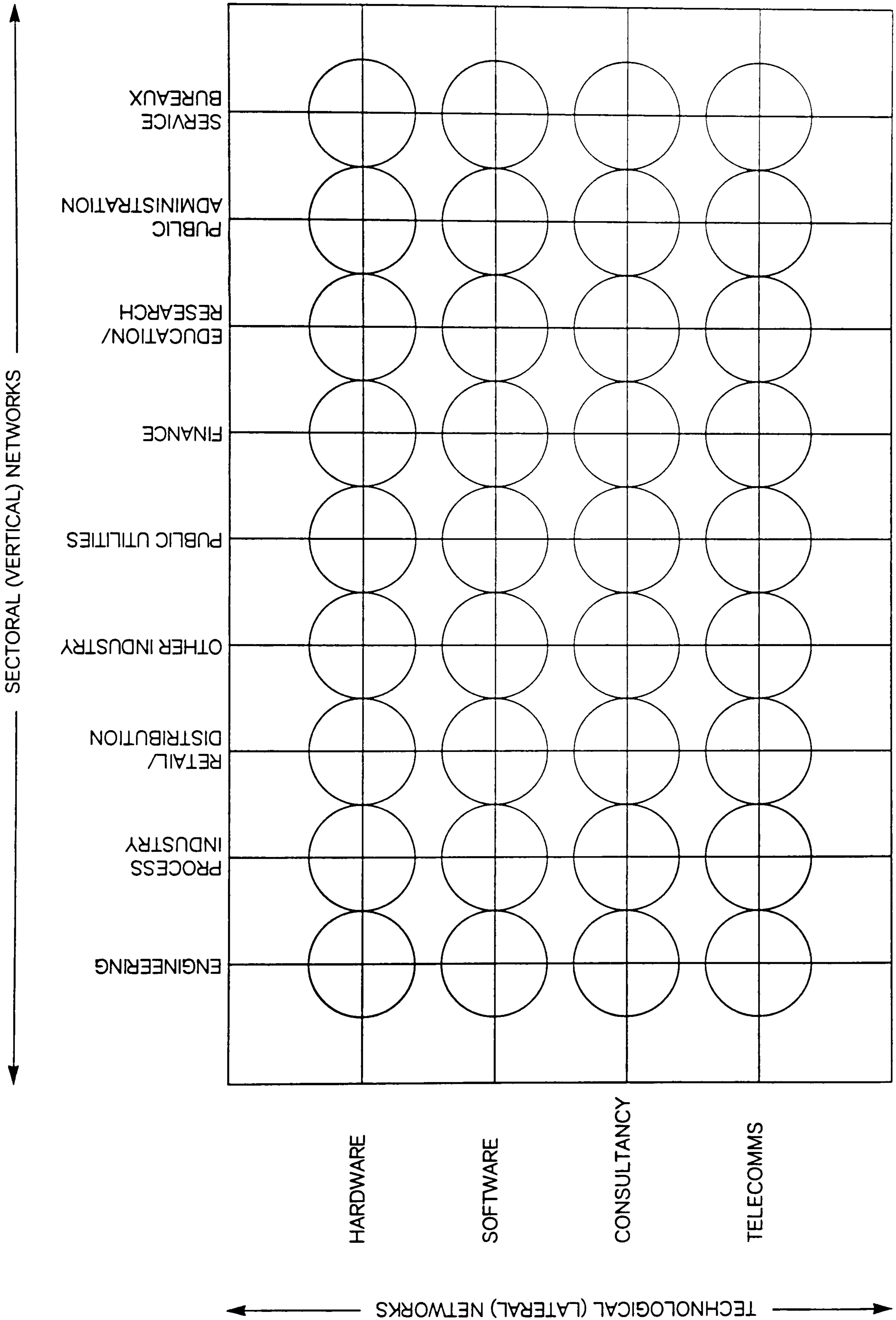


FIGURE 5.1: THE ICT NETWORK OF NETWORKS

The fragmentation of the networks need not stop at this level, however. It is clear that each sectoral level may be composed of a number of sub-sectors. Public administration may include, for example, separate and very different communities for health care and for local government. In discussing ICTs in the National Health Service Keen (1994) emphasises that technological resources are concentrated in operational departments for specific diagnostic and treatment purposes. This is in sharp contrast to local government where the emphasis is upon the strategic value of ICTs and their role in aggregating information for strategic use by organisations. Thus, within the sectoral network for public administration can be identified a number of sub-sectoral networks. Rather than arguing in favour of one network for ICTs, therefore, it is more useful to present a thesis based around a hierarchy of inter-related networks. Each of these networks demonstrate considerable vertical interdependence within their broader sectors, as well as a range of lateral dependencies across the various technological networks which transect them. The articulation of interests is enhanced because a number of actors participate in more than one network, although the role of particular actors in some networks may be greater than in others (for example, ICL participates in a number of sectors, but is particularly active in local government).

The concept of a hierarchy of networks is fundamental to understanding the existence of a local government ICT network and its relationship to other ICT networks. There is a telescoping of networks which acts from the widest view to progressively more focused views of networks within networks. Consequently, ICT policy in local government does not develop in isolation from technological development in other sectors, but is intrinsically linked to it. Advances in one sector are rapidly disseminated across other sectors.

Potential network participants

Once the concept of a local government ICT network residing within a hierarchy of broader networks is established, the identification of potential actors in the network becomes important. These actors not only provide the focus of intra-network interactions,

they also account for the inter-network relationships which emerge to create the broader networks associated with ICTs. A framework of potential actors is essential, therefore, if the local government ICT network is to move from the abstract to a more substantive and empirically testable concept.

Figure 5.2 illustrates the potential actors in the local government ICT network, and their principal relationships with one-another.

These actors (or entities) are broadly defined as follows:

IT Department - This entity represents the local authority department or section of a department charged with the principal responsibilities associated with ICTs. Traditionally, ICTs have been developed and managed within finance departments although many authorities are now adopting structures which makes the management of ICTs more independent (SOCITM 1991). The siting of the IT department at the heart of the network is deliberate, aimed at illustrating the central importance which this actor assumes in most authorities.

Internal Departments - As the users of ICTs other departments are obvious participants in the ICT network. They articulate their requirements for ICTs and consume them according to the specific needs of their own policy areas. In many cases they can be expected to have clearly shaped preferences for particular technological applications within their own domains. In principle, this actor (along with elected members) should be the primary influence on the ICT policies pursued by individual local authorities.

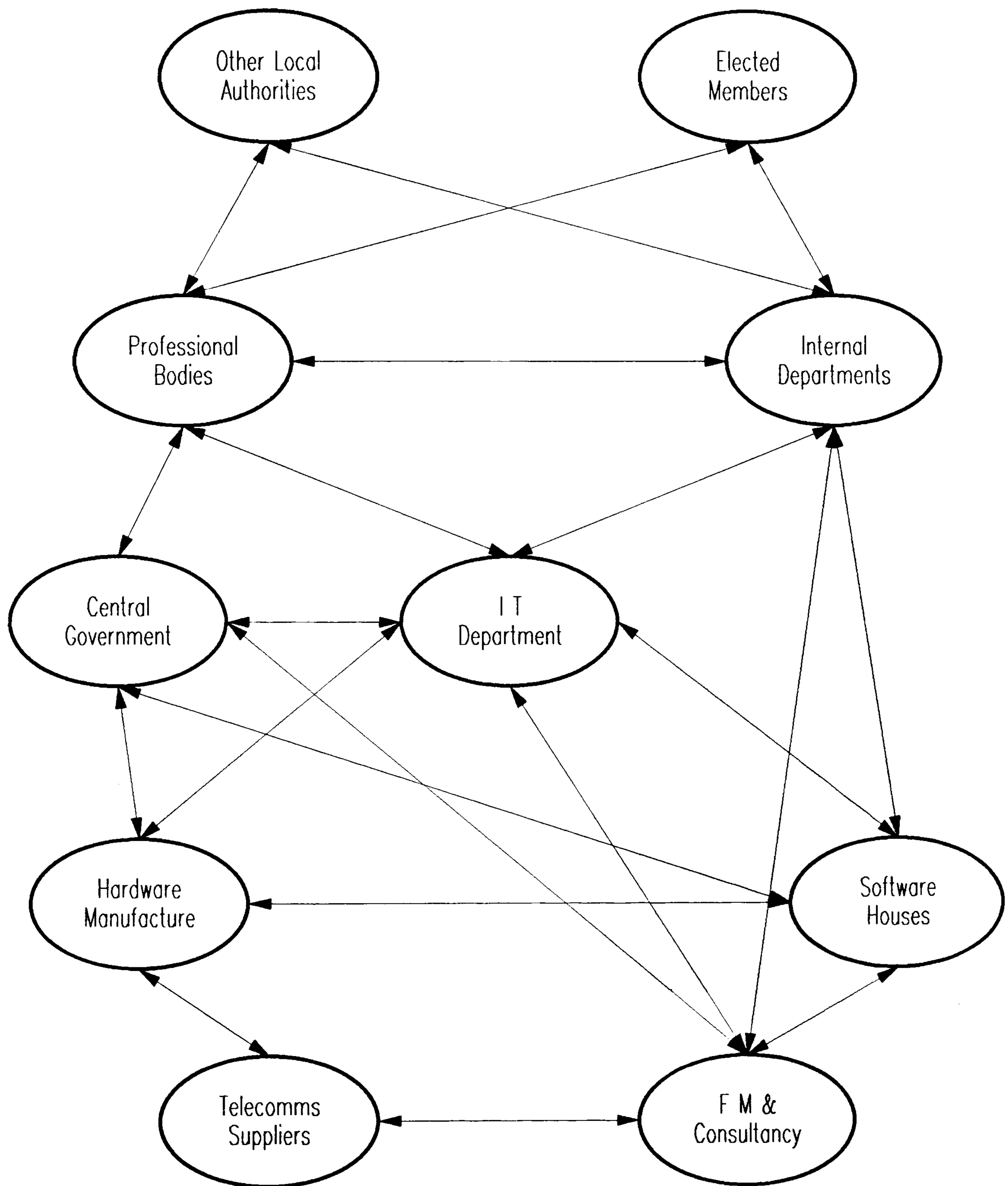


Figure 5.2

The local government ICT policy network

Elected Members - Given the important relationship between ICTs and broader strategic policies (see chapter 3) it is to be expected that elected members, as the principal policy makers of the organisation, should show considerable interest in the ways in which new technologies are exploited in their authorities. Furthermore, as ICT expenditure rises rapidly in a period of sustained financial retrenchment it is to be expected that elected members will show increasing interest in the value of this expenditure, and hence, that their activity in the network will increase. As will be shown later, however, this is a somewhat idealistic perspective of elected member behaviour which is not borne out in practice.

Professional Bodies - The main professional bodies in local government (see for example Laffin 1986, Laffin and Young 1990) have the ability to participate in the ICT network both through their members, and through their own ICT initiatives. For example, The Institute of Civil Engineers was instrumental in bringing about the computerisation of a routine maintenance management system for trunk roads.

Other Local Authorities - Local authorities often share similar problems, especially in relation to the implementation and maintenance of ICTs, and traditionally, they have shared resources in order to reduce the costs of systems development. The increasing need for local authorities to share information can be expected to increase communication between authorities, although the implementation of CCT in IT may also have the counter effect.

Central Government - Legislation is recognised by SOCITM (1988) as being the most influential element in introducing new technologies to local government. The role of central government in consulting on and introducing new legislation, and the informal contacts which many local government departments have with their central counterparts leads to the expectation that central government, or at least central government departments, will exercise considerable influence over the ICT network. A more indirect influence may also occur through the specification of central government ICT standards (for example GOSIP - the Government Open Systems Interconnection Profile) and through the publication of consultation documents.

Software Developers - Software houses have the potential to play a major role in the network. They have the resources to both encourage and direct policy developments in individual local authorities through the functionality (and limitations on the functionality) of their systems. Thus, policy only becomes feasible if the system can deal with it.

Hardware Manufacturers - In the same way as software houses, hardware manufacturers have a major stake in the activities of the network. Despite the supposed arrival of open systems, the opportunities for authorities to move between hardware platforms remains limited. Thus the limitations of the hardware also represent constraints on broader policy.

Telecommunications Suppliers - The telecommunications companies also have the potential to feature significantly in the local government ICT network. The emphasis on interconnected distributed processing being led by the hardware manufacturers contributes to the importance of this actor.

Facilities Management (FM) & Consultancy - Consultants do not simply offer a short-term solution to systems problems, they offer the collective wisdom of the business community. Thus, the current emphasis upon Information Systems Strategies (ISS) in local government can be seen to be, at least in part, a product of consultants involvement in the network.

It is important to note that while figure 5.2 recognises 10 potential actors in the local government ICT network these are not the only participants in the policy process. Indeed, the identification of actors may be subdivided into other categories, or may even recognise individuals and organisations as specific actors within each category. For the purposes of developing a framework with which to undertake an empirically based analysis of the local government ICT network, however, the categories identified in the diagram are adequate. It is also important to note that the relationships identified represent only the principal interactions which are expected to occur between actors. Other relationships may also exist. Finally, this construction remains at a normative level and thus offers only a potential view of the ICT network in local government. It suggests that these are the actors that should be involved in defining ICT policy but does not argue that this is

necessarily the case. The empirical analysis to be pursued in the following chapters will test this framework.

Inter-network relations

The identification of possible actors in the local government ICT network recognises the importance of a range of actors from other communities. Thus, the network under investigation has the potential to provide a focal point for lateral communication between networks. That is to say, the ICT policy network may act as the fulcrum for inter-network relations in local government. Central to the discussion of inter-network relations is the question of the extent to which the ICT network influences other policy networks, and conversely, the extent to which it in turn is influenced by others. Of particular importance in this discussion are the problems of change and the impact of networks on the process of change. Before entering a discussion on change, however, it is necessary to consider the principle of inter-network relations at greater length, and in particular, to consider why the ICT community is able to assume such a central position.

As already noted ICTs cut across all sectors of the economy. Most policy areas in local government rely to a greater or lesser extent on ICTs for the implementation of policy, and often for the identification and processing of policy problems. Each local authority department makes extensive use of ICTs and forges links with the ICT 'professionals' in the authority. Thus, a two-fold relationship exists. On the one hand, in developing, implementing and maintaining systems ICT 'professionals' must gain substantial knowledge of the business of other departments, and have a legitimate role in making recommendations for change which may influence the business of those departments. In designing systems, ICT 'professionals' interpret the needs of user departments and make assumptions as to the future directions in which policy may proceed. Using Callon's (1987) concept of 'engineer-sociologists', therefore, it is possible to argue that systems developers 'must permanently combine scientific and technical analyses with sociological analyses' (ibid, p100). In other words, it is not possible to develop technical solutions to problems, without reference to the broader policy area for which the system is required.

In referring to the broader policy area, systems developers take on the role of sociologists, and make (partially) informed judgements as to the direction of future policy developments. In so doing, ICT professionals have the potential to significantly influence policy in other areas. The effects of this influence are compounded by the limitations of the technology employed, as well as by the quality of the individuals involved. Thus, the ICT network is intrinsically bound up with other policy networks. On the other hand, other policy networks are also actively involved in the ICT network. They have the potential, in collaboration with the ICT network, to pioneer new uses for the technology, and hence, to alter its value to the organisation (both positively, by enhancing the use of equipment, and negatively, by making systems or equipment obsolete). At the minimum, the needs of user departments will drive the ICT network in particular directions, emphasising certain technologies, and disregarding others. Consequently, local government ICT policy can be seen to emerge from a dynamic relationship across networks rather than from within an isolated community of ICT professionals.

Three important points arise from this discussion of inter-network relations. First, ICT networks are actively involved and overlap with many other policy networks in local government. Second, ICT networks are at the heart of inter-network relations, and both influence and are influenced by the close relationship enjoyed with other networks. Finally, the values and goals of the ICT network are fundamental in determining the role of new technologies in bringing about change in other policy networks. Conversely, of course, the rate and nature of change in the ICT policy network must also be seen as being heavily influenced by the actions of other policy networks in accepting or rejecting the new technologies emphasised by the ICT community.

Conclusions

The main aim of this chapter has been to develop the policy network concept as an appropriate tool for analysing ICT policies in local government. It has undertaken this task in three stages. First, it has analysed the contemporary literature on policy networks and identified seven common themes which are shared across a fragmented range of

approaches adopted by different authors. These seven themes form the basis of understanding the policy network concept in relation to the analysis which follows. Second, the chapter has identified the major criticisms and limitations of recent approaches to policy networks. It concluded that although much of the recent discourse on networks has exposed considerable methodological and theoretical flaws which limit its capacity for further theoretical development, the concept nevertheless remains useful as an analytical and heuristic device for understanding specific policy areas. Finally, the chapter has built upon these issues to apply the policy network approach to the analysis of ICTs. Thus it has been able to hypothesise about the nature of the ICT policy network within local government in terms of both its actors, and its relationships with other technological and public sector policy networks.

In developing this framework the objective has been to concentrate upon the general features which might be expected of a collection of interests which shape ICT policies in local authorities rather than to identify specific issues which may emerge from their interaction. It is the purpose of subsequent chapters to test these general features and to reach conclusions on the specific issues that emerge from the application of the policy network approach to an analysis of ICT policy in local government. Before moving on to this empirical analysis, however, it is important to note that the general application of policy networks in this area provides important insights into systemic influences on ICT policies which do not emerge from a more direct focus on ICT strategies and policies in local government.

The policy network approach highlights the ways in which particular actors may influence the underlying values and appreciative systems which structure behaviour within the network, and which may ultimately act as the defining criteria by which all policy decisions are judged. Within the ICT network these values are of particular importance because the network is based upon a two-fold set of values which combines the commercial interests and techniques of private sector companies with a special emphasis upon rationality and logic in decision-making. Thus, ICT policies are greatly influenced by the commercial imperatives of private sector companies and by the methods which they employ to evaluate ICT investments. These assertions need to be explored further.

The dominance of the commercial interests and techniques of private sector companies is a direct consequence of local government ICT policy being almost wholly dependent upon the products produced and marketed by hardware, software and telecommunications companies. Despite the fact that most local authorities retain a residual capacity to develop some of their own software and to effect minor changes to their hardware and telecommunications infrastructures, they remain almost wholly dependent upon private sector companies for technological innovation, and are especially dependent upon the large hardware and telecommunications suppliers. Although authorities are able to pioneer some innovative uses of technology they tend to require the tacit, if not explicit, support of these private companies to effectively develop their own initiatives. These companies are only likely to support innovations where they can see a return on their research costs through further sales and such returns are most likely where products can be sold across different economic sectors with little or no modification to the original product. This results in a concentration on the use of ICTs to make service delivery more efficient and effective and to enhance managerial control of services. In short, ICT vendors, and other actors in the network, favour ICT applications which have a wide application across economic sectors, and especially those which deliver financial savings to organisations and increase the ability of managers to control organisational performance.

The special emphasis on rationality and logic in ICT decision-making follows from the commercial imperative which dominates ICT innovations. Methodologies and techniques which are shared across different sectors, and which are promulgated by ICT vendors and consultants, concentrate on identifying ways in which new ICT investments will reduce costs, enhance managerial or service effectiveness, increase market share, or gain an organisation 'competitive advantage'. This rationality underpins the criteria by which all ICT investments are measured and evaluated, and dominates ICT policy-making. Consequently, ICTs are only considered to be of value to an organisation where it can be demonstrated that they will offer financial savings or produce other more or less immediate and tangible benefits. Innovations which increase local government's capacity for democratic activity or public policy making do not fit easily into this rational approach to evaluation. As a result the ICT policy network contains a systemic bias in favour of applications concentrated around managerial or service efficacy, and away from other

applications which provide less directly measurable results or offer less tangible organisational benefits.

The policy network approach, therefore, provides important insights into the way in which ICT policy making is structured and influenced by the interests and commercial imperatives of particular organisations. In particular, it is able to explain how some ICT applications are preferred over others and how these preferences are shaped and structured by powerful vested interests who have little or no direct concern with the development of local government. Although the network approach has its limitations, if used as an analytical tool to explore these issues more thoroughly it has great utility. This chapter has developed a new framework which can be applied to the analysis of ICT policy making in local government. It is original in so far as it is a framework which is not dedicated to the theoretical developments of one author alone; which is not overly concerned with the need to provide an exhaustive classification of network types; and which works within the limitations of the network approach to develop a sophisticated framework which is appropriate for application to the complex area of ICT policy making. The following chapters build upon the framework developed here in order to provide an empirical analysis of local government ICT policy making, and especially to explore the issues raised by the application of the network concept to this policy area.

ANALYSING THE LOCAL GOVERNMENT ICT NETWORK: A METHODOLOGICAL FRAMEWORK

Introduction

By their very nature policy networks are difficult to study. As the previous chapter showed, networks consist of deep structures of resource dependencies which are often obscure and opaque. Conducting empirical analysis of such intrinsically abstruse structures is inevitably fraught with difficulties - difficulties which contemporary analyses of networks fail to overcome (Dowding 1995). Yet at the same time it is also widely accepted that the network concept is most useful where it has empirical application, particularly where it is being used as a metaphor for understanding policy processes (Marsh and Rhodes 1992a). Getting beneath the surface of day to day network interactions to examine the deeper structures of resource dependencies remains one of the biggest difficulties facing the empirical analysis of policy networks. As a consequence most accounts disregard day to day events as an irrelevance, preferring to go straight to the analysis of more systemic influences on network relations and policy outcomes (cf. Grant 1992, Smith 1993, Klijn *et al* 1995, *inter alia*). This chapter will argue that such an approach, while providing a level of empirical analysis, is methodologically limited because it is unable to account for the dynamic relationship between individual events and the development of more deep-rooted values and policies.

The purpose of this chapter is to develop a methodological framework which will enable an analysis of the local government ICT network and which combines a focus on the systemic structure of influence and dependencies within the network with a detailed analysis of its day to day activities. It will argue that there is a dynamic relationship between the daily activities of the network and the deeper influences which sustain the service delivery focus of policy outcomes. This relationship is part of the complexity of

networks and should not be ignored by a methodology which concentrates on only one aspect of behaviour. Consequently, this chapter develops a methodological framework which facilitates empirical analysis at several levels at the same time.

In common with most other analyses of policy networks, this methodology is based around a case study approach. It concentrates upon the local government ICT network as it influences the ICT policies of one metropolitan authority in the north-west of England. The methodology departs from most other contemporary analyses, however, in so far as it seeks to combine a number of different methods within a single case study, with the dual objective of both assisting the analysis of different levels of the network, and of providing a degree of triangulation within the framework. It develops an approach which provides a more sophisticated framework for analysis than has previously been applied to other policy areas. As a result it will also be able to provide more detailed findings on the structures of influence within the local government ICT network and the ways in which these influences are articulated through its day to day activities.

Three main sections follow this introduction. The first concentrates upon the object of analysis by providing a brief description of the case study authority and the formal organisation of the ICT function within it. The second discusses the four key methodological approaches used which collectively comprise the framework adopted - the analysis of network interactions, iterative interviews with key actors, one-off interviews with other network actors and a broader document search - and considers their complementary roles in the research process. The third analyses the boundaries and limitations of the framework developed in the context of the case study approach adopted, including the extent to which the case study can be considered representative of local government ICT policy making and the degree to which its findings can be generalised to other local authorities in the UK. Collectively, therefore, these three sections provide an overview of the approach to be adopted and its limitations. The empirical findings which emerge from the application of this framework will be reported and analysed in subsequent chapters.

The object of analysis

The empirical research was concentrated around the factors that influence the ICT policies of a metropolitan authority. While the study of the local government ICT network is not confined to this one authority, and the analysis which follows will draw upon a number of actors outside the authority, it is to this case study that the methodological framework developed in the next section will be applied. This section provides a brief outline of the case study authority as the basis for understanding the way in which the framework was applied by concentrating upon both the general features of the authority and the specific organisation of ICT policy making within it.

The focus of the case study was a medium-sized metropolitan authority in the north-west of England which came into existence in April 1974 as a result of the Local Government Act 1972. It had a population of just under 220,000 and covered an area of 10,323 hectares (40 square miles), most of which was urban or suburban in nature. Being a metropolitan authority it had sole responsibility for all local government services within its boundaries (i.e. there was no second tier authority with which services were shared). The Council had 57 elected members with a strong tradition of Labour Party domination (between 1990 and 1996 the Council did not have less than 45 Labour members at any time), although this control was briefly interrupted in the late 1970s when the council 'held-out' against comprehensive education. The Council employed just under 10,000 people, including teachers, and was the single biggest employing organisation within the borough.

The organisation of ICT policy-making in the Council followed a pattern common to many organisations in the public sector, and especially local government. Policy-making for ICTs was managed through the Information Technology Department (IT Dept) which assumed responsibility both for defining and developing ICT policies and standards, and for implementing and maintaining specific ICT investments. Its responsibilities for defining and developing ICT policies and standards are illustrated by the department's concentration on developing a corporate IT strategy which it reviewed and published every two years, and by its focus on defining operational standards for the acquisition and

implementation of ICTs which were imposed on all departments across the authority. Its responsibilities for the implementation and maintenance of ICT investments were apparent in the day to day functions of the department, which included the operation of mainframe and mini-computers to support specific systems and the provision of an error diagnosis and correction facility on all council systems. The important point here is that ICT policy making formally occurred within the IT Department of the authority. The department was expected to develop and implement the ICT strategy across the authority, with very little direct influence from other officers or members. Strategic policy decisions were ratified by others rather than determined by them. Thus, although the Director of IT was part of the chief officer's management team his role was largely to advise other officers on the ICT implications of their own policies, rather than to receive advice on his own ICT policies. Among elected members there was no formal committee which considered ICT policies, except in connection to specific services: ICT investments needed the approval of the policy and resources committee which also ratified the biennial IT strategy, and although they queried some financial aspects of ICT investments, they rarely, if ever, questioned overall strategies or policies. Consequently, from a formal perspective ICT policy may be seen to have developed from within the IT Department of the authority.

In keeping with the computing function in many organisations the IT Department evolved from a computing section within the Finance department of the authority. It was created as an independent department with its own chief officer in June 1987. During the period of the empirical research it consisted of three divisions, each of which were headed by an assistant director:

- *Operational services*, responsible for central computer operations, including the maintenance of the Council's mainframe computer and some mini-computers, and for controlling the day to day operation of individual systems.
- *Support services*, responsible for installing and maintaining personal computers (PCs) and for help and guidance in the use of general computer programs on PCs.
- *Development services*, responsible for the consultancy and development of software applications, both as bespoke developers of software solutions and as evaluators of external software products.

Figure 6.1 provides a summary of the formal structure of the IT Department during the period of the research.

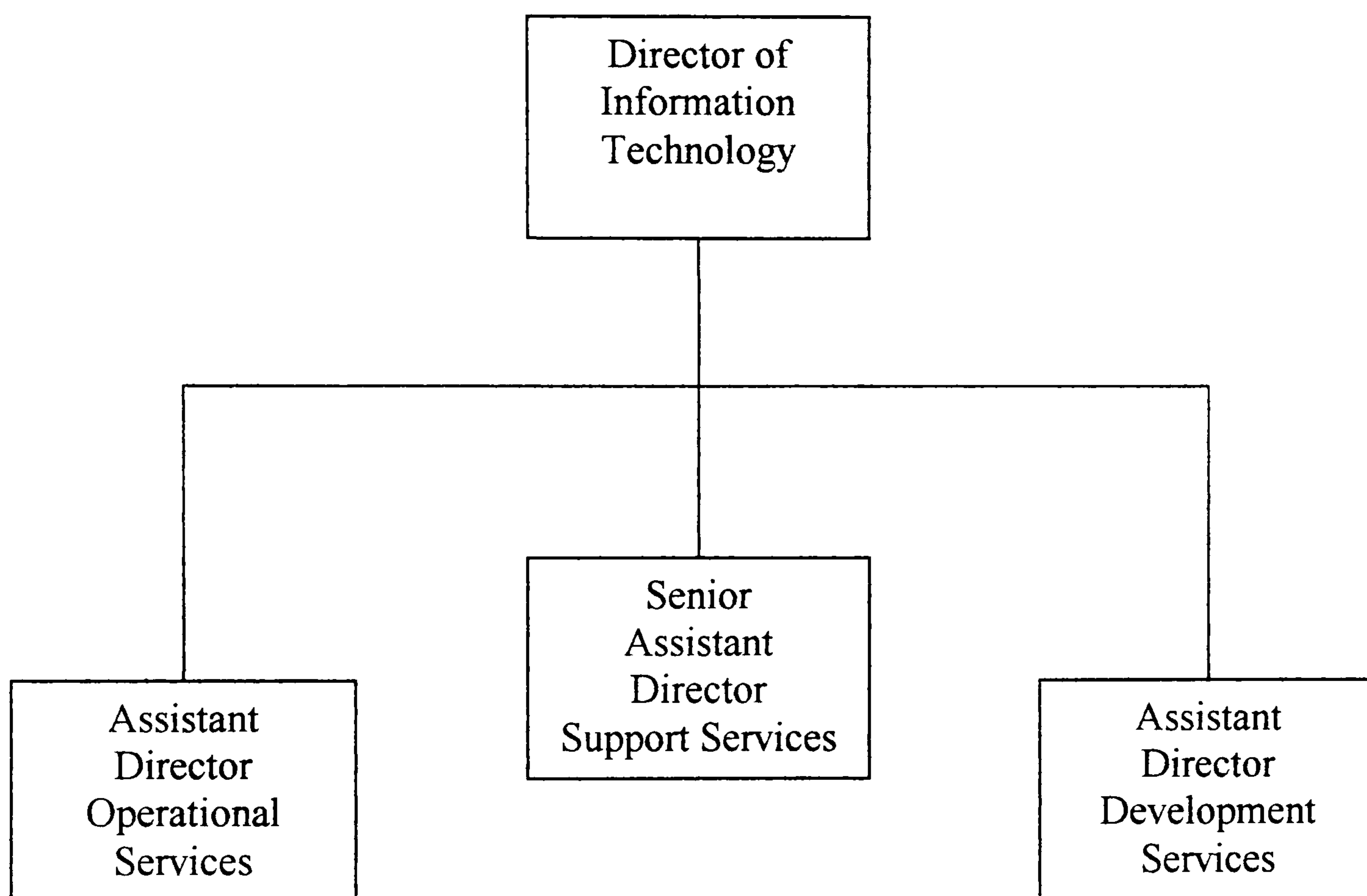


Figure 6.1

The IT Department: internal structure

These three divisions were collectively responsible for controlling and maintaining all of the Council's ICT investments, and for determining future investments. This included:

- an ICL mainframe (a dual node 3980) which hosted most of the traditional corporate applications including payroll, personnel management and financial information systems, as well as local government specific software such as tax collection, house lettings, road maintenance and electoral registrations.
- Seven ICL mini-computers (3 x DRS3000 and 4 x DRS6000) using an ICL version of the Unix operating system (DRS-NX) to provide function specific services in individual departments, as well as a Sun mini-computer running a different proprietary version of Unix to provide technical design and geographic information system capacities for the authority.
- An unspecified but growing number of personal computers being used for a variety of functions in different departments, ranging from simple word-processing through to sophisticated database applications (due to the rapid expansion of personal computing within the authority at this stage, combined with an absence of central control over PC purchases, the authority was unable to provide a precise count of PCs for the purposes of this study, although it was estimated as being over 300). In particular, PCs formed the basis of the Council's local management of schools policy, with dedicated PCs in each school linked in to an authority-wide mini-computer.
- A corporate telecommunications infrastructure which provided basic telephony facilities and data communications across local and wide area networks. During the period of the research the Council was in the process of moving towards integrated voice and data transmission across a single digital network.
- A range of bespoke, package and customised software applications, developed in response to the rapidly changing legislative environment in most service areas.

These investments provided the physical focus for the IT Department's activities. More importantly, they also represented the combination of specific technical knowledge and detailed understanding of local government processes and systems which underpinned the Council's ICT policies. In developing and maintaining the Council's ICT infrastructure

and services, therefore, the 95 full and part-time staff employed in the IT Department were intrinsically bound up in its ICT policies and commitments - Although the IT Department employed 135 staff at the time of the research it should be noted that a number of these were employed in non-technical posts which are not counted here as having any effect upon ICT policies or services, except as users of the ICT infrastructure. These were: 17 print and reproduction staff, 13 typists, 7 messengers and 3 administrative assistants.

The main reason for detailing the Council's ICT infrastructure and organisation at this stage is to illustrate its comparability with the technological arrangements of other authorities. Not only was the Council average at a corporate level in terms of its size, organisation and responsibilities, it was also unexceptional in its technological infrastructure and applications, and in the processes used to determine ICT policies. While this does not make the case study entirely representative, it does indicate that valuable insights can be drawn from it which have a broader relevance to ICT policy making in local government as a whole. This issue of representativeness will be addressed in more detail later, but first it is necessary to outline the methodology which was applied to the case study.

The method of analysis

The dual purpose of the methodology applied within the case study was to enable analysis of both the detail of routine activities within the ICT network and the more deep-rooted influences and values which framed day to day decisions. It is only by focusing upon both the everyday events of the network and the systemic influences on policy that a full understanding of how the influences of various actors are articulated through the network can be gained. The framework, therefore, required the combination of a number of different methodological approaches to be employed, in order to allow different levels of analysis to be conducted and different features of the network to be highlighted. Four complementary approaches were adopted: an analysis of interactions within the network; an iterative cycle of interviews with the formal ICT policy makers; an additional set of

interviews with key external actors; and the collection of documentary evidence in support of the analysis. These four methods were applied to the case study authority over a six month period from January to June 1991, concentrating particularly upon the four individuals at the top of the formal structure for ICT policy making: that is, the Director of IT and the three assistant directors responsible for the functional divisions within the department (see figure 6.1) who were collectively known as the Departmental Management Team (DMT).

Analysis of interactions

The interaction analysis was primarily concerned with logging the number of contacts made by and to different types of actor within the network during the period of the research. It concentrated specifically upon the interactions conducted by the four individuals who composed the departmental management team. Thus, the interactions undertaken by each of these four individuals were categorised and quantified on a weekly basis throughout the six months. The potential actors in the network were divided between 10 main categories, corresponding with the categories defined in chapter 5 (see figure 5.2). The ostensible purpose of the interaction analysis was to quantify the communications between the formal developers of ICT policy (the DMT) and the other nine potential actors in the ICT network (an additional category of 'other' was included to catch any unanticipated interactions from actors outside of the network). The DMT's contacts with each of these actors were split between *incoming* (i.e. those initiated by other actors) and *outgoing* (i.e. those initiated by a member of the DMT), and divided into three main styles of interaction: *meetings*, which included all face to face interactions including conferences; *written correspondence*, involving all documentary interactions including facsimile transmissions; and *telephone communications*. At the beginning of each week all four members of the DMT were issued with three interaction forms: one for each of the three main styles of interaction. These were issued on different coloured paper - green for meetings, blue for written correspondence and pink for telephone conversations - to assist the participants in distinguishing between them. Appendix 1 provides samples of the interaction forms. Participants were asked to classify and log all

interactions at their desk as they occurred. All interactions engaged in by the four members of the DMT were logged in this manner over the six months of the project with the exception of incoming written correspondence. As all incoming mail was sorted and distributed daily by the Director's personal assistant (PA) it was agreed that she should interpret and log all incoming correspondence on a separate set of the interaction forms, again controlled on a weekly basis.

The description so far details the main features of the interaction analysis, but also raises a number of questions relating to the choice of categories into which actors were divided, the frequency at which forms were issued and collected, and the extent to which misinterpretation or misunderstanding of terms and categories was controlled or prevented. Before moving on to other aspects of the research framework it is necessary to address these questions.

As noted earlier, the choice of the 10 categories of actors into which interactions were classified was based on the potential actors identified in the application of policy network concepts developed in chapter 5. Although these categories could have been further divided into sub-classifications along a number of dimensions, it was essential to limit the number of categories in order to gain the compliance of the study participants, and their understanding of the distinctions between categories. In particular, it was important to limit the ambiguities that might exist between categories. For example, actors may well be members of more than one category in some circumstances: individuals from 'other local authorities' may also be participants in particular 'user groups'; 'hardware manufacturers' may also provide 'software', 'telecommunications', 'facilities management', 'consultancy' and a host of other customer services besides. Ambiguities such as these were avoided by asking the study participants to distinguish between the nature of the interaction. Hence, a telephone call to another local authority to discuss an issue affecting or arising from a particular user group was logged under 'user group', while a similar call requesting support or sharing information outside of the framework of any such user group was logged under 'other local authority'. Where a conversation covered a number of issues which fell into different categories - for example, discussing both hardware and software related issues - a separate log was made under the appropriate heading for each

issue. Consequently, it was possible to record more logical calls than were physically received in one week.

The forms were issued and collected on a weekly basis using numbers which corresponded to the financial week. This numbering system was common to a number of the Council's major computer systems and was easily understood by all participants. The frequency of issue and collection provided an important focus for the research, especially in relation to the iterative interviewing which accompanied the interaction analysis (see below), as well as providing a structure for useful trend information. Furthermore, by collecting the interaction forms weekly participants were effectively reminded of the need to keep them up to date. Any absences on the part of individual participants or other reasons for incomplete data were noted on the form at this time. By using a weekly time frame for the interaction forms, therefore, the research was able to highlight changes in the concentration of interactions over the period, and to compare these with emergent policy. Thus, the collection of weekly trends enabled an analysis of the possible links between interactions and policy outcomes.

As five individuals were actively involved in coding interactions (4 DMT members and the Director's PA), there was an obvious danger of inconsistencies occurring in the categorisation of particular transactions. To minimise the risk of such errors a variety of measures were built into the framework. First, written guidelines were issued to all participants at the start of the study providing details of each category (a copy of these guidelines is included in Appendix 2). These guidelines were deliberately brief so that they could be kept with the interaction forms and referred to whenever necessary. Second, the guidelines were 'talked through' with all five participants to ensure that they understood how to complete the forms, and how to distinguish between different categories. Third, the first four weeks of the study were conducted as a pilot survey to enable queries to be raised and any problems to be ironed out. Data from these four weeks was not used in the analysis, although useful background information obtained during this period was included in empirical analysis. Finally, the guidelines were updated at the end of the pilot to reflect the main queries and problems raised. Changes to the guidelines were highlighted to each individual participant during the subsequent

interviews. The iterative interviews also served to correct any misunderstandings which might occur from time to time.

At this point it is necessary to acknowledge that quantifying the frequency of communications, by whatever media, does not provide any measure of influence, or even of relative influence. Indeed, it is possible to perceive a situation in which one actor may have a regular pattern of communications with the IT department but exercise little or no influence over its policies, while another may have only brief and occasional contacts but exercise considerable power during those communications. Furthermore, it is even possible to perceive a situation in which an actor has no direct contact with the IT department but exercises considerable influence through a third party. The interaction analysis was not capable of measuring the relative influence of each communication, and indeed, was never intended to do so. But by measuring interactions it was possible to gauge the intensity of network activity, and especially, whether this intensity varied among different actors according to the salience of particular policy issues or policy outcomes. The six month period of the interaction analysis was timed to coincide with the review and publication of the authority's IT Strategy, an important document which established the Council's formal policy on ICT infrastructure and investments for the subsequent two years. The interaction analysis was useful in providing an insight into the extent to which the intensity of interactions among actors increased during the strategy review and fell off after its publication. It was also useful in indicating who initiated most communications during the process. Consequently, by analysing interactions it was possible to achieve some measurement of the importance which actors attached to different policy issues.

The interaction analysis was also important to the case study because it provided a structure and focus around which the other more qualitative aspects of the research framework were organised. As will be shown below, the iterative interview process of the four DMT members required a regular focus on the relationships which the IT Department had with other actors. By asking each of these individuals to log their communications it focused attention on who different individuals spoke to and which conversations were most important. Weekly interviews with each study participant, therefore, could be structured around their logged communications. As will be discussed

in more detail later, therefore, the interaction analysis provided an important triangulation tool for confirming particular events, as well as being an empirical tool in its own right. The interaction analysis provided a suitable structure around which other more sophisticated methodologies could be applied, while at the same time acting as an additional validation of the findings from those other methods.

On its own the interaction analysis is of limited value in understanding the ICT policy making process in local government - it does not provide any detail of the context of different communications or their importance in shaping particular decisions. But when combined with the other more qualitative methods described below it becomes an important component of a comprehensive research framework for analysing the development of ICT policy in the case study authority.

Iterative interviews

Each of the four members of the DMT was interviewed on a regular basis, in a cycle that ran parallel with the interaction analysis. These interviews are termed here 'iterative interviews' because they were conducted on a regular programme with agreed intervals, using an iterative cycle, and are to be distinguished from the other 'one-off' interviews that were conducted with other actors in the network during the research process (see below). The main purpose of these interviews was to discuss the interactions logged, and to consider their effect upon policy development. Thus, it was necessary for the interviews to allow for a general focus on overall values and perceptions, a broad discussion of policy issues and more detailed attention to specific communications where appropriate.

Three aspects of the interview process need to be expounded: their frequency, their style and their organisation.

The frequency of the interviews had to be often enough to allow the participants to recall all relevant information relating to interactions, yet far enough apart to prevent participants from becoming frustrated with their frequency, and hence, less prepared to co-operate with the research. Consequently, it was agreed that the interviews should be conducted on a

weekly basis. In a number of instances, however, this seven day interval became impractical to administer, and the frequency was reduced to between 10 and 14 days where necessary. While this reduction in frequency may have resulted in a marginal loss of detail during the interviews, any loss was more than compensated for by securing the continuing co-operation of all participants. Insisting on a strict seven day interval may have had a negative effect on this co-operation and have reduced the commitment of the participants to the research. This flexibility in the frequency of interviews was complemented by the avoidance of rigid timetabling. Appointments were made to fit the convenience of the participant, avoiding periods where participants were likely to have particularly pressing commitments elsewhere. Where possible the next interview appointment was agreed at the end of each meeting but provision was always made for other times to be used if that date became unacceptable. The flexibility in both the frequency and the timetabling of interviews was rewarded by a significant amount of co-operation from the participants, demonstrated by both the amount of time committed to the interviews and the information which was divulged.

The style of the interviews was deliberately informal. The commercially sensitive nature of much of the information acquired in the interviews meant that it was important to gain the confidence of the participant early in the process, and to maintain this confidence at the highest possible level. It was felt that informal interviews would encourage greater frankness and confidence, by allowing the participant to reveal information when ready, rather than forcing details from them through a formal interrogation process. Thus, the informal interviews enabled participants to reveal information which was not to be repeated elsewhere, but which was nevertheless useful in understanding other issues or relationships. This information was invaluable when analysing the policy developments prior to, and during, the period of the study.

The organisation of the interviews reinforced the informality and flexibility of the process by adopting a semi-structured approach. Participants were encouraged to discuss any topics or interactions which they considered relevant, or even of a more general interest. No specific order was demanded in the process and data collection was undertaken in the form of rough note-taking. To maintain some structure within the process, however, the

rough notes were subsequently summarised on a 'standard interview' form under four main headings: current issues; new contacts/issues; summary of significant contacts; and other comments (a sample is included as Appendix 3). The 'standard interview' form from the previous interview was shown to the participant at the start of the next, and agreed as a correct record before proceeding. The forms provided a structure to the interview in three ways. First, they enabled discussions to be recorded under consistent headings, and by making participants aware of these, the interview was directed to the main areas of interest and unnecessary information easily filtered out. Second, they ensured that a correct record of the discussion was made, especially by requiring the participant to agree the notes. Thus, any misunderstanding or misinterpretation of events could be easily corrected. This process also served to strengthen the participant's confidence in the integrity of the research. Finally, the 'standard interview' form provided continuity between meetings by providing a start point for each discussion. Consequently, events from the present week were easily linked to issues or interactions from previous weeks. Hence, participants were encouraged to adopt the structure offered by the forms, but not restricted to following it to the exclusion of other information.

The iterative interview process, therefore, can be summarised as being a flexible arrangement of semi-structured meetings supported by the underlying framework of the 'standard interview' forms and the interaction logs which each participant maintained during the week. When combined with the quantitative data produced by the interaction analysis the interviews enabled a fairly detailed focus on the day to day activities of the local government ICT policy network. Whereas the interaction analysis concentrated upon the frequency of communications, the interviews provided in-depth, qualitative information about the nature and content of those communications. Consequently, the relative importance and influence of different actors, as perceived by the study participants, could be analysed through the interview process, and compared with the frequency of interactions revealed by the quantitative measures discussed earlier. The interviews, therefore, provided access to the more subtle and sophisticated processes which underpin particular decisions, but which cannot be revealed through more quantitative methods.

One-off interviews

To complement the concentration of the research on the IT Department a number of interviews were arranged with representatives of other organisations who were actors in the network. These differed from the iterative interviews outlined above in two substantive respects. First, as the title suggests, they were one-off interviews with individual actors rather than a recurrent cycle of interviews. Second, the iterative interviews were concerned with both the general values and perceptions of the IT Department towards ICT policy, and the analysis of more specific policy decisions and outcomes during the study period. By contrast, the one-off interviews concentrated mainly upon the general attitudes and beliefs of other actors and their strategic position in the network, rather than on the detail of specific ICT policies or outcomes. The purpose of these one-off interviews, therefore, was to analyse the perceptions and activities of other key actors in the network, especially though not exclusively in relation to the case study authority.

A total of eight interviews were conducted with the following:

- The Chief Executive of the case study authority
- The Director of Finance in the case study authority
- An Assistant Director of Housing in the case study authority
- The Leader of the case study authority
- A civil servant in the Department of Transport responsible for imposing a major computerisation of road maintenance on local authorities
- The Assistant Director of Computing and Management Services in a County Council
- A Senior Marketing Consultant for a major hardware manufacturer (ICL)
- The Managing Director of a small software house specialising in local government products.

These interviews complemented the detail of the iterative interviews by broadening the analysis beyond its focus on the case study's IT Department in order to examine the strategic positioning and underlying perceptions of other actors in the network.

Documentary evidence

The principal modes of communication within the network can be analysed through the patterns of interaction which emerged from the interaction analysis, and from the interviews which these led on to. This overlooks, however, one other important mode of communication which may influence the behaviour of individual actors in the network and have broader effects upon the policies pursued by it. Consequently, alongside the other methodological tools outlined above, a systematic collection of documentary evidence was made. It should be noted at this stage that the primary purpose of this collection was to provide supplementary information on the workings of the network rather than to engage in any detailed form of quantitative content analysis. Nevertheless, these documents provided a useful additional focus on the key issues arising within the network and a useful record of policy outcomes.

The documentary evidence collected can be classified into two groups: that produced within the IT Department; and that produced by other actors in the network. This distinction is important because documents produced within the IT Department reflected the formal position of the IT Department in relation to specific ICT policies, while those from elsewhere reflected influences on that policy process. Figure 6.2 summarises the documentary evidence collected in these two categories.

Documents produced by IT Department	Documents produced by other actors
DMT Minutes - Brief notes on decisions agreed at DMT meetings	General Publications - Circular information produced by vendors etc (e.g. ICL product handbook).
DMT Working Papers - Papers prepared to address specific issues (e.g. Unix)	Specific Reports - Consultancy reports prepared directly for the authority
IT Strategy - Original strategy document - Subsequent review papers - IT Guide for Council Departments	Meeting notes and minutes - Notes of meetings with other actors, especially user group minutes and conference proceedings
IT Systems Standards and Procedures - Defined the nature and style of the Department's interactions within the network	Correspondence - Specific items of correspondence where relevant
	Press - News items in the computer or local government press publications

Figure 6.2

Summary of documentary evidence collected

Documents were collected in two processes. First, all documents produced by the IT department during the period of the study were collected. This included both publicly available information (for example, the Council's published IT strategy) and more confidential internal documents such as the minutes of the DMT meetings and briefing papers on particular issues. Second, externally produced documents were collected from a range of sources including trade journals and magazines, general publications and specific reports. The main focus of this second process, however, was the collection of

externally produced documentary sources to which the IT Department were likely to have access. Consequently, the collection process concentrated upon those journals, magazines and reports that were held in the IT Department's own internal library or in the Council's larger member's library to which officers had access. Consequently, a systematic and comprehensive collection of relevant documents that were either produced by the IT Department, or which had the potential to influence its policy processes, was engaged in.

The limits to analysis

The previous section outlined four tools which comprise a methodological framework for analysing the local government ICT policy network. None of these approaches on their own are adequate for analysing the subject. When combined, however, they offer a powerful framework which provides for both a multi-dimensional perspective on the various issues arising from the application of the network concept, and a degree of triangulation not feasible through the adoption of any one methodology. Each tool provides both a unique focus upon particular aspects of the ICT policy network, and a means of validating the phenomena observed through the application of the other tools. As with all methodologies, however, there are several inherent limitations in the framework which must be acknowledged before the findings can be analysed. In defining case study research Yin (1989) identifies four criteria which he argues must be addressed in judging the quality of all case studies: construct validity; internal validity; external validity; and reliability. Although the precise terminology attached to such issues varies, these are themes that are common to much of the literature on research methods (cf. Smith 1990, Hammersley 1992, Stake 1995). Consequently, this section will address each of these by considering both the general meaning of each term, and its implications for the research methodology developed above. From this it will be possible to assess the extent to which the research meets each of these criteria and, hence, to identify its limitations.

Construct validity

Construct validity is concerned with the appropriateness of the concepts employed for the proposed research. That is, it is concerned with the construction of the research methods and its relevance to the questions being analysed. Have the correct measures been identified and do the research instruments adopted enable effective measurement to be conducted? In relation to quantifiable measures construct validity is relatively easy to apply. In relation to qualitative analysis - that is, those issues which do not easily lend themselves to direct measurement - it is harder to assess. The problem here is determining whether the instruments adopted are adequate for measuring the full complexity of the phenomenon under analysis.

For these more complex issues Cronbach and Meehl (1978) argue that the real test of validity is the extent to which the framework enables theoretical inferences to be made from empirical observations. In the context of the research framework outlined above it is such inferences that are central to the methodology employed. The fourfold approach does not seek to show that a specific measure of network activity equates to particular types of network. It does not aim to develop a precise measure which would enable the local government ICT network to be placed upon a scale which could later be compared with other policy networks. Rather, it seeks to develop a study which enables a range of network features to be systematically observed so that inferences can be made from the empirical observations facilitated by the framework to the theoretical propositions developed earlier. Consequently, construct validity in this context is concerned with the extent to which the research framework is suitable for making such logical inferences.

To some extent the assessment of such construct validity must be a *post hoc* activity because the full relevance and success of the framework can only be judged in retrospect. It is only once empirical observations have been juxtaposed with theoretical propositions, and logical inferences induced, that the value of the framework can finally be determined. Nevertheless, it is possible to construct research frameworks which explicitly take account of construct validity. As Yin argues:

The use of multiple sources of evidence in case studies allows an investigator to address a broader range of historical, attitudinal, and observational issues. However, the most important advantage presented by using multiple sources of evidence is the development of converging lines of inquiry, a process of triangulation... Thus, any finding or conclusion is likely to be much more convincing and accurate if it is based on several different sources of information, following a corroboratory mode.

In this manner, the potential problems of construct validity also can be addressed, because the multiple sources of evidence essentially provide multiple measures of the same phenomenon (Yin 1989, p97).

Thus, one means of ensuring construct validity when developing a research framework is to adopt an explicitly multi-dimensional approach which uses several contrasting methods to analyse the subject. The analytical framework developed above does precisely this. It uses four different but complementary methodological approaches to study the local government ICT network, each of which allow for a different analytical approach, and potentially, a different set of logical inferences to be developed. While the ultimate test of construct validity can only be applied in retrospect, therefore, it is nonetheless apparent that the framework developed here has also addressed the issue of construct validity in the design stage. In this way the integrity of the research findings is supported by the explicitly multi-dimensional approach of the framework adopted.

Internal validity

Two further issues follow from the discussion of construct validity which are closely linked to the research framework's suitability for making logical inferences relevant to the theoretical propositions developed earlier. One is concerned with the extent to which the specific case study findings can be generalised to a wider population and will be addressed below under the heading of 'external validity'. The other is concerned with the extent to which the inferences induced from analysis are plausible and is the focus of internal validity. As Hammersley argues:

Judging a theory plausible is not a test of it, since there may be many competing plausible explanations. We need evidence to show that it is the *most* plausible of those available and that it is sufficiently plausible to be accepted (Hammersley 1992, p177, original emphasis).

This is basically an issue of causality. As Yin puts it:

internal validity is a concern... where an investigator is trying to determine whether event x led to event y . If the investigator incorrectly concludes that there is a causal relationship between x and y without knowing that some third factor - z - may actually have caused y , the research design has failed to deal with some threat to internal validity (Yin 1989, p43).

Internal validity, therefore, is concerned with ensuring that all influences on the phenomenon being observed are taken into account in the design of the research framework. In the context of the local government ICT network there were two threats to the internal validity of the research framework developed. First, there was the threat of unanticipated exogenous influences on the behaviour of network actors, or on specific or overall policy issues. For example, it is evident that the wide range of legislative change summarised in chapter 2 has demanded a host of new ICT investments. Similarly, broad economic changes have had a substantial impact upon the role which ICTs play in government, as have particular technological innovations. To the extent that these changes have occurred outside of the immediate influence of the network and its actors this raises concern over the degree to which the research framework was able to take these into account. But this concern conflates empirical and methodological issues with the broader theoretical issues under analysis. The emphasis of the research framework was not upon weighing the importance of exogenous influences relative to influences internal to the network - this remains a separate empirical question which may well demand different methodologies. Despite some attempts to do otherwise (see for example Smith 1993), the network concept is not primarily concerned with the relative significance of macro-level and meso-level influences. Rather, it is concerned with the way in which macro-level issues are articulated to the meso-level processes of networks, and *vice versa*. Thus, the four components of the research framework provided adequate opportunity for such exogenous factors to be observed as they were communicated through the network.

Second, internal validity was threatened by potential inaccuracies in the various methodologies, especially in those components that concentrated upon obtaining the perceptions and attitudes of individuals within the network through interviews. As interviews formed a central pillar of the research framework this aspect of internal validity needs to be explored in some detail.

The major concern expressed over any research which uses interviews is summarised by the title of Dean and Whyte's (1978) seminal work *How do you know if the informant is telling the truth?* Their argument occurs at two levels. First, they are concerned with the extent to which interviews can arrive at an understanding of the absolute truth on any matter:

The informant's statement represents merely the perception of the informant, filtered and modified by his cognitive and emotional reactions and reported through his personal verbal usages... we are getting merely the informant's picture of the world as he sees it. And we are getting it only as he is willing to pass it on to us in this particular interview situation (Dean and Whyte 1978, pp179-80).

Consequently, they argue that the respondent may have a series of complex and contradictory emotions, values, opinions and attitudes which may change over time, especially when reporting subjective information. The interviewer should not expect to identify the absolute truth, but should be prepared to receive a number of truths which may conflict with another individual's account of the truth. At this level, therefore, the issue is the respondent's ability to tell the truth, which in any but the most simple of social or political situations is questionable. The interviews used in this case study were not intended to explore any such absolute truths within the local government ICT network. Instead, they aimed to understand the perceptions and attitudes of individuals within the network, and the ways in which these shaped policy evolution. Consequently, concerns with this first level of truth are of little consequence to the research framework.

The second level of Dean and Whyte's argument is of more importance to the research framework. Thus, they argue that it is important to validate the accounts given as being honest reflections of the truth as subjectively perceived by the informant. Ensuring the validity of accounts is very much a product of the relationship between the interviewer and the respondent. As the six month empirical study of the local government ICT network to which the framework was applied was undertaken while the researcher was an employee of the case study authority, this relationship warrants further analysis. In effect, a clear hierarchical relationship existed during the period of the research which enabled the respondent, especially in the iterative interviews, to adopt a position of superiority over the researcher. The danger of this type of relationship is that certain questions may have been considered impolite or provocative by the respondent to the extent that they

either received unsatisfactory responses or were avoided altogether by the interviewer. This danger was compounded by the commercially sensitive nature of much of the information requested during interviews. Within the methodology the problems of this hierarchical relationship were addressed in two ways. First, a distinction was drawn between researcher and employee activities, with only research issues being discussed during the interviews. Second, the confidentiality of the interviews was emphasised throughout the process, thus encouraging a build up of trust over the six month period of the interviews. In this way the threats posed to the research by the hierarchical relationship of the informant over the researcher was minimised. Indeed, the relationship did offer the benefit of ensuring that the researcher and informants shared a common understanding of the events under study and the professional language used to describe them (Laffin and Young 1990).

Despite minimising the effects of any hierarchical relationship there remained a number of other more subtle ways in which the informants may have attempted to avoid telling the truth. Denscombe (1983) suggests three strategies which might be employed by interview respondents: mystification, referral and identity switching. Mystification and referral occur where the respondent admits that an answer is not forthcoming on a particular question, but explains this by suggesting that the subject matter is too complex to be discussed during the interview or refers the interviewer to another source for that information. Within the research framework neither of these posed significant problems, especially during the iterative interviews. Mystification was difficult for respondents because of the researcher's explicit knowledge of the organisation and the issues under study. Referral was also a problem for respondents because of the iterative cycle of the interviews. Consequently, issues could be returned to in subsequent interviews if adequate answers were not forthcoming in the first instance. The strategy of identity switching in which the participant introduced expectations and roles from outside the immediate context of the interview presented more problems. The dual identity of the researcher as both employee and researcher enabled such a strategy to be invoked whenever the informant was so inclined. It was guarded against by politely enforcing a strict researcher/informant relationship which required the interviews to concentrate on research issues.

Although these methods helped guard against the mystification, referral and identity switching tactics that informants might have adopted, on their own they could not ensure that the respondents always told the truth as they perceived it. Further internal validation was built into the research framework, therefore, through the triangulation that was made possible through the use of a variety of research tools. According to Cohen and Manion:

Triangulation may be defined as the use of two or more methods of data collection in the study of some aspect of human behaviour... triangular techniques in the social sciences attempt to map out, or explain more fully, the richness and complexity of human behaviour by studying it from more than one standpoint and, in so doing, by making use of both quantitative and qualitative data (Cohen and Manion 1989, p269).

Triangulation was achieved through three processes built into the research framework. First, participants were asked to report on all significant interactions which had taken place over the previous week. Conversations were then cross-referenced with the interaction forms to ensure that all significant issues were considered. This did not prevent the informant from deliberately excluding a conversation from both the forms and the interview, or from mis-representing its significance, but it did reduce the risk of inadvertent errors. Second, reports of meetings given by one respondent were compared with accounts of the same meeting given by others. In many circumstances interactions involved more than one study participant, providing a useful source of verification. The best example of this was the fortnightly DMT meeting which was attended by all respondents in the iterative analysis, although there were many other less formal meetings which had shared respondents. Third, accounts were cross-referenced with the documentation associated with various meetings, including background or briefing papers and subsequent minutes. While this did not prevent informants from interpreting particular situations to fit their own perceptions of reality it did provide an important check upon then plausibility of their accounts.

External validity

The issue of external validity is probably the biggest single problem confronting research which uses case studies as a research strategy. This is because case studies are not

considered to be scientifically representative of the wider population under analysis. As Yin puts it:

A common complaint about cases studies is that it is difficult to generalize from one case to another. Thus, analysts fall into the trap of trying to select a "representative" case or set of cases. Yet no set of cases, no matter how large, is likely to deal satisfactorily with the complaint (Yin 1989, p44).

The principal problem is one of demonstrating that the phenomenon observed in the case study will be found consistently in other cases across the population. Where there is a very finite population the case study may be able to cover most, if not all of that population, thereby claiming a degree of representativeness. But where the population is large, case studies are likely to sample only a small proportion of the population, consequently leaving them open to the charge of being unrepresentative, and making generalisation difficult. As Hammersley notes, there is a trade-off between the representative breadth offered by the broader sampling base of quantitative surveys and the theoretical and empirical depth offered by case studies:

...where empirical generalisation is the goal there is no doubt that, whatever its advantages in terms of detail and accuracy, case study is usually weaker than the survey in the generalisability of its findings (Hammersley 1992, p189).

Thus, in choosing case studies as a research strategy, researchers implicitly trade generalisability for the richness of empirical data that this strategy offers.

But for Mitchell this general position ignores the distinction between statistical inference on the one hand, and scientific or causal inference on the other:

Statistical inference is the process by which the analyst draws conclusions about the existence of two or more characteristics in some wider population from some sample of that population to which the observer has access. Scientific or causal - or perhaps more appropriately - logical inference, is the process by which the analyst draws conclusions about the essential linkage between two or more characteristics in terms of some systematic explanatory schema - some set of theoretical propositions (Mitchell 1983, pp199-200).

This is similar to Yin's (1989) desire to distinguish between statistical and analytical generalisation. In essence both authors argue that case studies can never be shown to be representative from a statistical point of view - they tend to sample too small a section of the population to enable statistical inferences to be made. On the other hand, case studies provide a much stronger basis for developing logical or analytical inferences - inferences that relate empirical observations to theoretical propositions - which can be generalised on the strength of their underlying theory rather than their statistical significance. The key to logical or analytical generalisations, therefore, is the plausibility of the inferences. To this extent the issue of generalisation is more a feature of the theoretical basis of the research and its construct and internal validity than it is a feature of its general representativeness to a wider population. As Mitchell goes on to argue, 'logical inference is epistemologically quite independent of statistical inference' (1983, p200). Generalisations can be made, therefore, because the fit between empirical observations and theoretical propositions is good rather than because enough observations of the phenomenon have occurred to assume it occurs in the remainder of the population.

Although this position has great appeal to research which is based upon a single case study, Hammersley (1992) argues that the issue of representativeness remains important and that case studies should nonetheless endeavour to show the extent to which their findings can be generalised. This does not necessarily require statistical representativeness, but it does demand that the researcher demonstrates the relevance of the case study to the wider population to which the generalisation is being made. In the context of the case study outlined in this chapter, therefore, it is necessary to consider the representativeness of the case study at two levels: first, the extent to which the case study authority as a whole can be considered typical of local authorities in Britain; and second, the extent to which the ICT infrastructure and investments, and the related ICT policies of the case study authority, are representative of those found in other British local authorities. Both can be analysed by reference to broader indicators of local authority trends and patterns.

The general representativeness of the Council as a typical British local authority can be considered along a number of dimensions. Four will be used here as comparative

indicators of representativeness: its size, geography, functions and political control. Size can be compared in terms of population. With a population of just under 220,000 the authority was among the 100 largest authorities (out of 514) that existed in Britain at the time of the empirical study (prior to the most recent reorganisation). More importantly, however, its population size indicated it to be roughly similar to a large number of the 36 metropolitan districts and the 32 London Boroughs, as well as many of the larger district councils - Although population size of the metropolitan districts ranges from Birmingham (1,003,759) to Knowsley (153,214), the vast majority of these authorities (72 per cent) have populations of between 180,000 and 320,00. The largest London Borough is Croydon (321,807) while the smallest is Kingston-upon-Thames (141,716), excluding the City of London Corporation. While the population size of non-metropolitan districts prior to reorganisation varied between Bristol (374,300) and Teesdale (25,000), over 45 per cent of the 296 districts had populations of 100,000 or more. Even though it was smaller than most county councils (only the now unitary Isle of Wight had a smaller population) the authority was nevertheless similar in size to a considerable proportion of other authorities in Britain.

In terms of geography it was a fairly densely populated area, covering only 40 square miles of mainly urban or suburban territory. This made it broadly comparable with most of the London Boroughs and other metropolitan districts, as well as most of the larger non-metropolitan districts which are based predominantly on large towns or cities. As with all metropolitan districts the authority retained sole responsibility for the full range of local government functions in its area. From a comparative perspective, therefore, it was responsible for all the functions undertaken by local authorities including the largest county councils and the smallest district councils. Finally, in terms of political control the Council had a long history of Labour control, in common with most other predominantly urban authorities. Consequently, the key point being made here is that the case study authority was not exceptional when compared with a large number of other authorities.

These four comparative dimensions do not show the authority to be wholly representative of local government throughout Britain. Indeed, as Stanyer (1976) argues, all local

authorities are miniature political systems in their own right, each of which has its own unique features and processes. If Stanyer's argument is accepted then it would be impossible to find a single case study, or even a range of case studies, which could be considered as being wholly representative of local government. But by providing comparative information on each of the four dimensions it is possible to gauge the extent to which the Council was similar to other authorities, and hence to consider the relevance of the case study findings to local government more generally. More importantly, the authority was subject to the same external economic and political pressures that have been endured by all local authorities over the past two decades (as analysed in chapter 3), and thus, its experiences in dealing with these pressures, and the policies which emerge from them, are as valid as those of any other local authority. To this extent the Council represented a suitable case study authority from which some meaningful generalisations can be made.

The second level of representativeness is concerned with the extent to which the ICT infrastructure and investments, and the related ICT policies of the case study authority, are representative of those found in other British local authorities. This can be analysed by adopting a similar comparative approach to that used above, drawing particularly upon the aggregated information provided by the annual SOCITM survey of IT trends in local government.

As noted earlier, during the period of the study the Council's ICT infrastructure was centred around an ICL mainframe dual node 3980 which hosted most of the traditional corporate applications and a wide range of specific local government applications. As part of its corporate ICT strategy, however, it was rapidly moving away from dependence upon the mainframe by moving systems to dedicated mini-computers. Thus, during the period of the study the Council had already implemented, or was in the process of implementing, seven ICL mini-computers with the prospect of extending this in the near future. In addition, it had rapidly expanding PC applications within departments. This infrastructure and the general trend towards 'downsizing' of computing power can be compared with national trends through the SOCITM annual survey. The SOCITM annual IT Trends survey for 1991 (which covers the period of the empirical study) shows that ICL

continued to dominate the local government market for corporate computers (mostly mainframes), accounting for 48 per cent of all such computers in use in local government in that year. Its nearest rival (IBM) accounted for less than half of that figure (21 per cent). As the mini-computers supplied by MDIS accounted for 17 per cent of all local authority corporate systems, which are concentrated in small local authorities, it is evident that ICL dominated considerably more than half of the larger authorities. The Council's continued dependence on its ICL mainframe, therefore, reflected wider trends in mainframe computing in local government. Furthermore, the SOCITM survey shows that the average number of departmental (mini-) computers in that year was six, with ICL being by far the biggest supplier (28 per cent) compared with its nearest rival (again IBM with just 8 per cent). The Council's adoption of seven mini-computers in departments, therefore, again is in keeping with the general trends witnessed in local government. Finally, the growth in PC use by the authority is broadly reflected in wider local government ICT trends. The Council's use of PCs had grown from 170 in 1989 to over 300 in 1991 (a growth rate of over 57 per cent). This compares with a national growth in local government use of PCs of 56.3 per cent over the same period.

In terms of its ICT infrastructure and policies, therefore, the case study can be seen to have been broadly similar to many other authorities in Britain. Most of its software applications were packaged solutions used by many authorities on an ICT infrastructure which was not only similar to the Council's, but which was also evolving along a broadly similar pattern away from centralised mainframes towards more distributed processing. Although the Council was not wholly representative of local government, therefore, it was nonetheless typical of many authorities in terms of both its general characteristics and its specific ICT policies. As such it provides a context from which suitable generalisations can be made. It passes the test of external validity.

Reliability

This final test for judging the quality of the research framework concerns the extent to which repeated applications of the framework would produce a consistency of results. As Yin summarises it:

The objective is to be sure that, if a later investigator followed exactly the same procedures as described by an earlier investigator and conducted the same case study all over again, the later investigator should arrive at the same findings and conclusions (Yin 1989, p45).

The emphasis of reliability is on ensuring consistency of results from the same study rather than consistency of results across a number of different studies. Thus, the concept of reliability depends upon an acceptance of a hypothetical replicability which is not, in practice, possible, not least because the circumstances of any case study will inevitably change over time. Nevertheless, reliability imposes an important discipline on the researcher by demanding that the steps and processes performed in the case study are clearly articulated. In essence reliability requires that the researcher maintains a clear audit trail which further analyses of the same research can follow and validate if necessary. One of the most important contributions of reliability as a test, therefore, is ensuring that the research process is effectively documented. In detailing the research framework, this chapter has addressed the issue of reliability by providing a thorough description of the methodologies adopted, as well as a critique of them. Consequently, it provides a strong basis from which to move on to the analysis of the empirical findings.

Conclusions

In developing a methodological framework for analysing the local government ICT network this chapter has provided the basis for operationalising the theoretical propositions developed in earlier chapters. Consequently, it provides a four-fold approach which combines the quantitative methods adopted in the analysis of network interactions with the more in-depth and qualitative information which can be gained from a structured

interview process and from the analysis of associated documents. Thus, this chapter has developed an effective methodological framework which enables the local government ICT network to be analysed along a number of dimensions. The different research instruments it employs combines a variation in both methodological approach and research outputs with a degree of triangulation which would not be feasible otherwise. It has also shown how the research instruments relate to the more fundamental questions being addressed by the research (the construct validity of the framework), the plausibility of the accounts offered by the various tools and their relationship to one another (the internal validity of the framework), the extent to which findings can be generalised from the case study to the wider population (the external validity of the framework) and its reliability as a framework. This enables the reader to evaluate both the depth of the study and its related limitations.

The ultimate test of the framework is in its application. It is only by applying its methods to the case study authority that its suitability for analysing the significance and influence of the local government ICT network can be assessed. The following chapter, therefore, will analyse the empirical findings that the application of the framework has revealed, and thereby enable its value as a research tool to be evaluated.

FINDINGS FROM THE CASE STUDY: ACTORS AND THEIR RESOURCE DEPENDENCIES

Introduction

The methodological framework developed in the previous chapter provides the basis for a detailed analysis of the local government ICT policy network: it provides a wealth of empirical evidence collected from four distinct methodological tools. The purpose of this chapter is to analyse the findings from this empirical study in relation to the theoretical propositions developed earlier. By using the policy network concept as an analytical framework it develops a comprehensive picture of the patterns of influence within the local government ICT network. Subsequently, this will provide the basis for considering the policy outcomes which form the focus of chapter 8. When combined, this focus upon both network structure and policy outcomes will offer powerful empirical evidence of the local government ICT network in practice.

The most fundamental issue raised by the policy network approach is whether or not there is a distinct and discernible network for ICT policy making in local government. This issue can be addressed by analysing both the actors that dominate ICT policy making and the complex pattern of resource dependencies that govern relations between them. The existence of these actors and their resource dependencies provides the principal evidence that there is a local government ICT policy network. More than simply analysing actors and their dependencies, however, this chapter also addresses more deep-rooted issues concerning the structure and pattern of relations and the ways in which policy emerges from within these structures. Thus, by using the two themes of network actors and their resource dependencies it will be possible to gain a detailed picture of the local government ICT network in practice.

These two themes are not entirely discrete: there is an inevitable degree of overlap between them. The existence of a range of actors automatically implies that there will be resource exchanges which create an interdependency between core actors - this assumption lies at the heart of network approaches (see for example Benson 1982, Rhodes 1988). By dividing the analysis between on the one hand network actors, and on the other, resource dependencies, however, it is possible to explore the findings in more detail, and with direct reference to the analytical framework upon which the case study is premised. In particular, it is possible to arrive at conclusions about the relative influence of different actors over specific policy issues, and the reasons for variation in the distribution of influence.

The four methodological tools used in the case study reveal an abundance of information on the day to day development of ICT policies as well as the overarching structures which shape and constrain individual decisions. A detailed chronological account of the events and interactions observed during the period of the research, however, would provide an inadequate and confused base from which to understand ICT policy development, and would ultimately be unrewarding. Rather than report the findings from each separate methodological tool, therefore, this chapter will use the two themes of network actors and resource dependencies to analyse the key findings.

Network actors

The discussion of the policy networks concept (chapter 5) developed a model of the potential actors within the ICT policy network (see figure 5.2). While this model shows the possible and most likely connections between actors it does not provide any analysis of the nature of the relationships or the directions of influence that are inherent in these relations. This section is concerned with developing a detailed analysis of these relationships based upon the evidence that emerged from the interaction analysis and the related interviews. In particular, it is concerned with establishing the core relationships that configure the network. This analysis can be approached in two ways. It is possible to analyse network relationships according to the frequency of contact between actors, and

the subject matter of such communications. The quantitative evidence of the interaction analysis, supported by the evidence from the iterative interviews, is of particular relevance here, especially in so far as it enables conclusions to be reached over the extent to which various actors attempted to participate in the network. This does not, however, enable any conclusions to be reached on the comparative influence of actors. Alternatively, it is possible to analyse network relationships according to the relative influence of different actors. This is a more complex issue which does not lend itself easily to quantification. Although interaction analysis is useful in indicating the frequency and style of communications it is the corresponding interview process and supporting documentary evidence that is most revealing on this aspect of the network. This section will deal with both of these approaches in turn.

Network participation as a measure of attempted influence

During the 26 weeks of the study 2346 interactions were recorded by the study participants. In principle these show the extent to which various actors participated in the network. In practice they also provide a good measure of the importance which different actors attached to the network and provide an indication of the extent to which each actor sought to influence events within it. Hence, an aggregation of the interaction analysis not only offers interesting trend information on the direction and style of communication within the network: by quantifying network participation it also offers a measure of the direct attempts made by actors to influence policy outcomes and allows comparison between different actors. Consequently, the findings from the interaction analysis provide the first evidence of the existence of the local government ICT network by demonstrating the extent to which different actors sought to influence it.

Analysis of the interactions by each category of actor provides the most cogent evidence of which actors sought to directly influence ICT policy in the case study authority. Figure 7.1 shows the total number of interactions recorded against each category of actor.

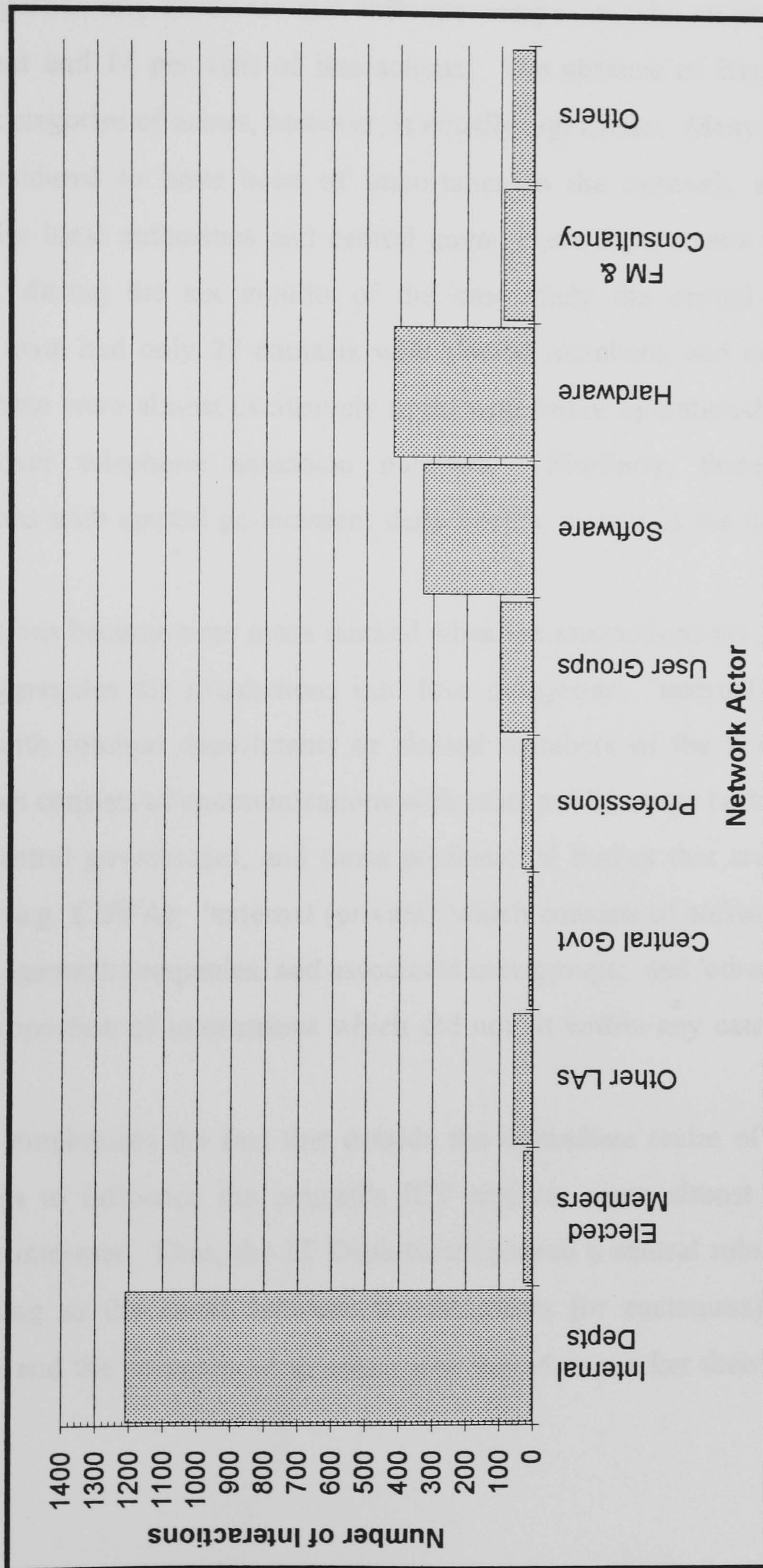


Figure 7.1

Total interactions by actor

The most striking feature of figure 7.1 is the predominance of participation by internal departments in the network. Internal departments accounted for over half (53 per cent) of the total communications. Private sector ICT companies also featured significantly in the network, particularly hardware and software companies who respectively accounted for 18 per cent and 14 per cent of interactions. The absence of frequent transactions among other categories of actors, however, is equally significant. Many of the actors who could be considered to have been of importance to the network, especially elected members, other local authorities and central government departments barely registered. For example, during the six months of the case study the central IT departmental management team had only 27 contacts with elected members, and interview evidence reveals that these were almost exclusively to do with minor operational difficulties, such as queries over telephone extension numbers. Similarly, there were only 11 communications with central government departments, mostly in the form of circulars.

These distinctions become even more marked when the interactions are divided by sector. Figure 7.2 aggregates the interactions into four categories: 'internal', which refers to interactions with internal departments or elected members of the authority; 'external (public)', which consists of communications with other public sector bodies including local authorities, central government, and those professional bodies that are primarily in the public sector (e.g. CIPFA); 'external (private)' which consists of software, hardware and facilities management companies, and associated user groups; and 'other', which accounts for a small proportion of interactions which did not fit within any category.

This analysis emphasises the fact that outside the immediate realm of the authority the major attempts to influence the council's ICT policies came almost exclusively from private sector interests. Thus, the IT Department played a central role in the case study authority, acting as the nexus between the recipients (or customers) of ICT services (departments) and the commercial interests who aimed to market their products.

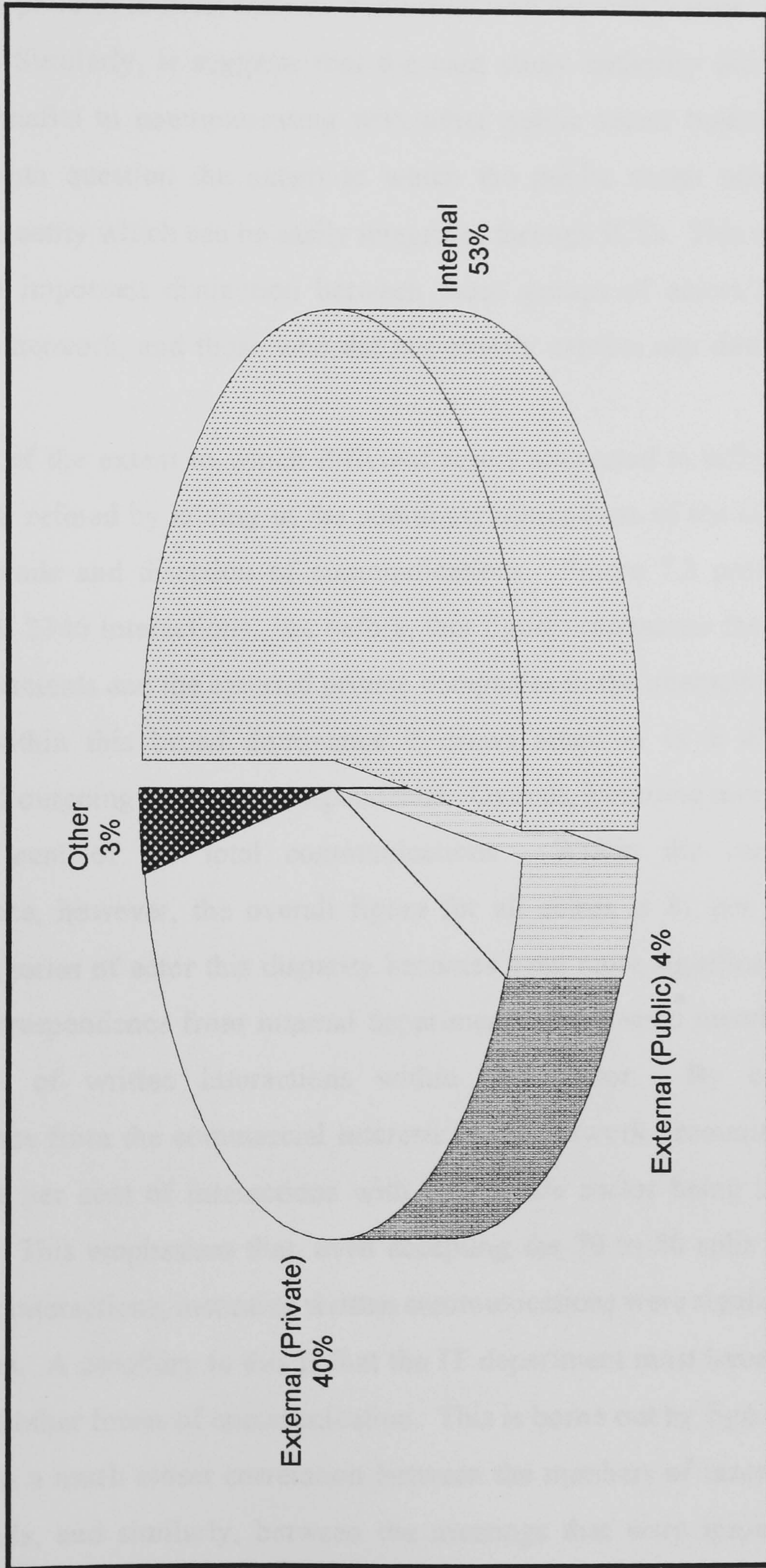


Figure 7.2

Proportion of interactions by sector

On its own this evidence does not provide any conclusions as to where the main influences on ICT policies lie. The high level of particular interactions, however, does indicate that both internal departments and private sector companies have a desire to influence ICT policies to meet their own interests, and actively pursue this desire through interactions. Similarly, it suggests that the case study authority did not perceive any significant benefits to communicating with other public sector bodies, and *vice versa*. This brings into question the extent to which the public sector can be considered a homogeneous entity which can be easily integrated through ICTs. This analysis, therefore, highlights an important distinction between those groups of actors who attempted to influence the network, and those who did not overtly express any desire to do so.

The analysis of the extent to which different actors attempted to influence ICT policies can be further refined by adding in the additional dimensions of the interaction analysis, concerning mode and direction of communications. Figure 7.3 provides a composite analysis of all 2346 interactions. As before, this figure emphasises the dominance of the internal departments and the external private companies in the interactions of the network. Moreover, within this broad dominance it draws attention to a distinction between incoming and outgoing written correspondence. Overall, incoming interactions accounted for 70 per cent of the total communications. Within the category of written correspondence, however, the overall figure for all actors is 81 per cent. When split between categories of actor this disparity becomes even more significant. Consequently, incoming correspondence from internal departments and elected members accounted for 76 per cent of written interactions within that sector. By contrast, incoming correspondence from the commercial interests in the network accounted for 86 per cent, with only 14 per cent of interactions with the private sector being initiated by the IT Department. This emphasises that, even accepting the 70 to 30 split between incoming and outgoing interactions, incoming **written** communications were significantly higher than outgoing ones. A corollary to this is that the IT department must have initiated a greater proportion of other forms of communication. This is borne out by figure 7.3 which shows that there was a much closer correlation between the numbers of incoming and outgoing telephone calls, and similarly, between the meetings that were initiated internally and externally.

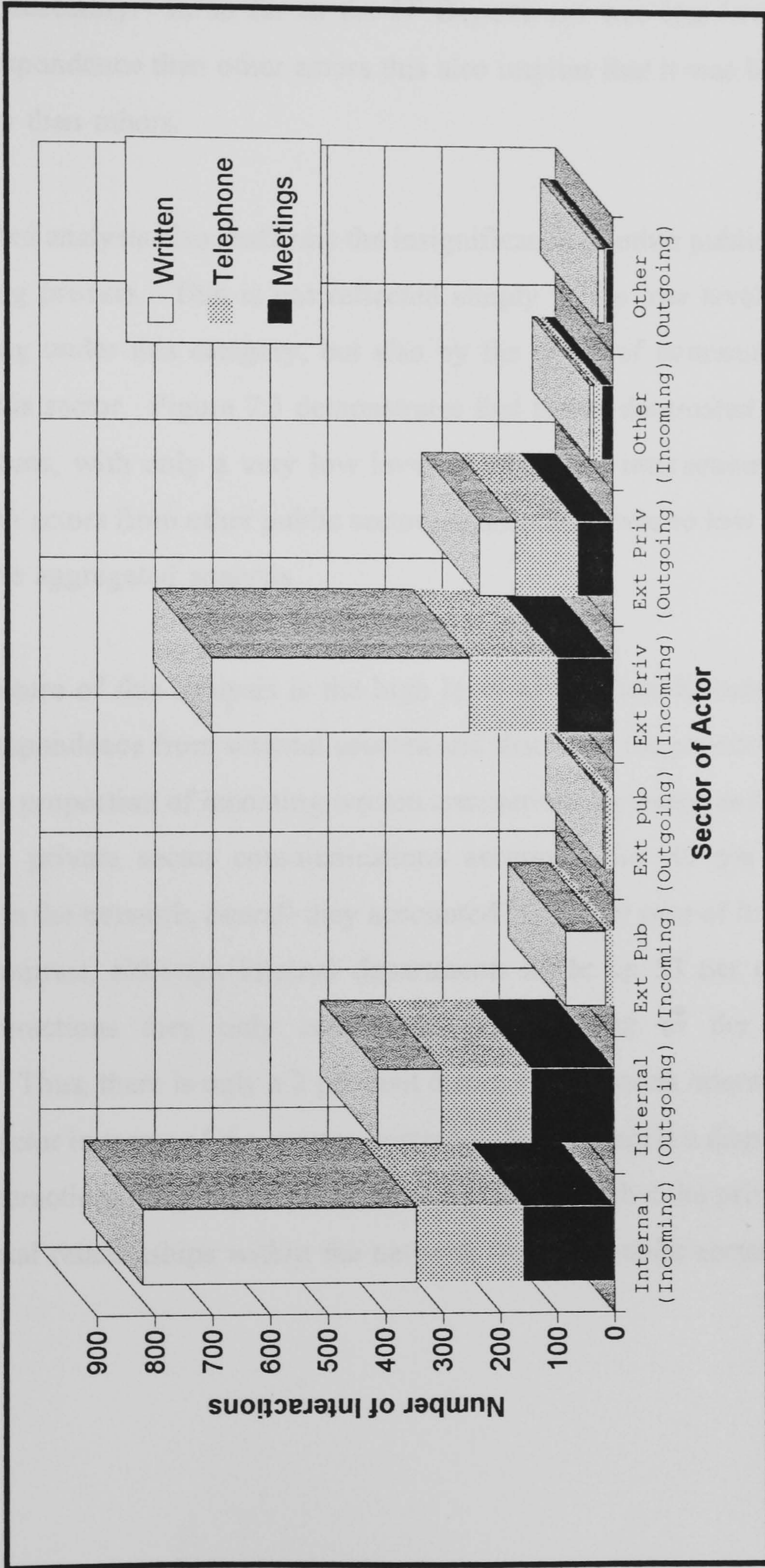


Figure 7.3

Composite analysis of interactions

The concentration on written communications suggests a degree of formality in many of the network interactions. Actors are most likely to use written correspondence where they wish to ensure that their communication is recorded and can be recalled in evidence at a later date if necessary. In so far as the IT Department was less involved in initiating written correspondence than other actors this also implies that it was less concerned with this formality than others.

The aggregated analysis also reaffirms the insignificance of other public bodies in the ICT policy making process. This is not reflected simply in the low level of interactions in general falling under this category, but also by the mode of communications that were adopted in this sector. Figure 7.3 demonstrates that it was dominated by formal, written communications, with only a very low level of telephone interactions. The number of meetings with actors from other public sector organisations was so low that it did not even feature on the aggregated analysis.

A further feature of this analysis is the high level of congruence between the incoming written correspondence from internal sources and that from the private sector. Figure 7.4 illustrates the proportion of incoming written transactions by sector and shows that despite the fact that private sector communications accounted for 40 per cent of the total transactions in the network, overall they accounted for 45 per cent of the incoming written ones. By contrast, although internal departments made up 53 per cent of the overall network interactions they only contributed 47 per cent of the incoming written transactions. Thus, there is only a 2 per cent distinction between internal departments and the private sector in terms of the written correspondence, despite a disparity of 13 per cent in overall interactions. Again, this illustrates the argument that the private sector engaged in more formal relationships within the network than the public sector.

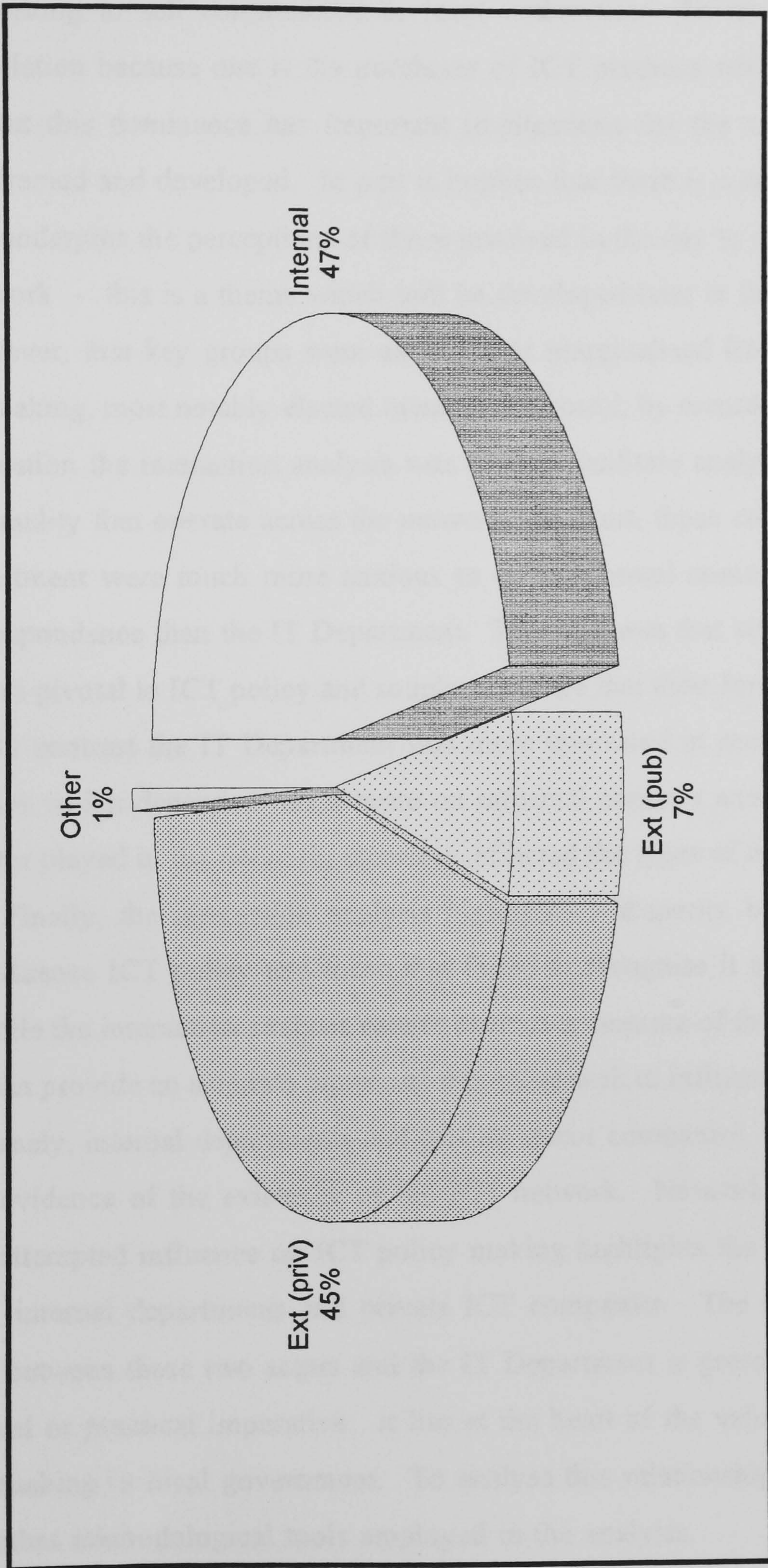


Figure 7.4

Incoming written interactions by sector

Overall, therefore, the interaction analysis is able to reveal three important findings. First, despite the possibilities for broad participation which ICT policy making offers, most transactions were dominated by two groups: internal departments and commercial companies seeking to sell commodities to local authorities. To an extent this is an obvious correlation because one is the purchaser of ICT products while the other is the producer. But this dominance has important implications for the way in which ICT policies are framed and developed. In part it implies that there is a specific culture and ethos which underpins the perceptions of those involved in the day to day transactions of the ICT network - this is a theme which will be developed later in this chapter. It also implies, however, that key groups were excluded or marginalised from participation in ICT policy making, most notably elected members. Second, by recording different types of communication the interaction analysis was able to facilitate analysis on the varying levels of formality that operate across the network. In short, those communicating with the IT Department were much more anxious to ensure formal communication through written correspondence than the IT Department. This suggests that all actors saw the IT Department as pivotal to ICT policy and sought to ensure that their formal positions were recorded. By contrast the IT Department was more interested in securing tacit consent for its policies which depended much more on informal contacts and interactions. The role each actor played in the network, therefore, affected the types of interaction in which it engaged. Finally, the interaction analysis highlights a disparity between those who sought to influence ICT policy and those that failed to recognise it as being significant to them. While the interaction analysis cannot provide a measure of the relative influence of actors it can provide an accurate picture of those that seek to influence ICT policy most directly: namely, internal departments and private sector companies. On its own this is compelling evidence of the existence of the ICT network. Network participation as a measure of attempted influence on ICT policy making highlights the importance of two key actors: internal departments and private ICT companies. The significance of the relationship between these two actors and the IT Department is greater than simply one of commercial or practical imperative: it lies at the heart of the values which underpin ICT policy making in local government. To analyse this relationship it is necessary to turn to the other methodological tools employed in the analysis.

The relative influence of network actors

The iterative interviews which ran concurrently with the interaction analysis provide in-depth evidence with which to analyse the relative influence of network actors. The findings from these interviews agree broadly with those from the interaction analysis, although they also allow these findings to be refined and developed in much greater detail. In short they support the finding that a limited number of actors had a significant impact upon ICT policy making. These core actors were referred to consistently, crossing over into most subjects under discussion, and appearing frequently in successive interviews. Three categories of actor (hardware manufacturers, software houses and internal departments) emerged as core participants, with other actors pushed to the periphery. Within each category of core actors individual companies or groups can be identified who were predominant.

Hardware Manufacturers - The significant capital costs involved in purchasing mainframe computers in the 1960s and 1970s led most local authorities to commit themselves to the hardware products of one manufacturer. In the case study authority, such a commitment was made to ICL, and the council had purchased successive mainframe computers, networking technologies and peripheral equipment from this one manufacturer. Although it was not the sole supplier of computing equipment to the Council (for example, the Council also operated a PRIME mini-computer for developing 'technical' facilities for geographic and spatial data manipulation), ICL had been by far the most predominant supplier (IT Strategy 1988).

Consequently, a relationship had arisen which had provided an opportunity for ICL to become a major contributor to the development of ICT policy within the Council. The issue under consideration here is the extent to which that relationship went beyond merely a commercial arrangement between ICL and the local authority to incorporate a range of other interdependencies that inextricably linked the two parties. While the interviews emphasised that the organisational futures of the Council and ICL were not explicitly and inseparably united, it was clear that the careers of a number of individuals within these

organisations were. Most notably, a number of senior managers in the Council's IT department, and specific 'account managers' and technical staff at ICL were almost wholly dependent upon the success of ICL hardware at the Council for their future careers. Thus, ICL staff were actively influencing ICT policy within the Council at a level that was much broader than simply fostering the commercial relationship between the two parties. This influence was often subtle and discreet, and could even have been subconscious in some instances. It amounted to more than just shrewd marketing tactics on the part of ICL, however, and included ICL staff subscribing to, and encouraging, a consensus on the 'best' technological solutions for the Council, even where such solutions did not directly benefit ICL.

Some examples of this relationship can be drawn from evidence gleaned from the interviews. A number of ICL staff at different levels of the organisation, and with varying functional and technical responsibilities, held regular scheduled meetings with their counterparts in the Council. An example of this was the monthly technical meeting with ICL maintenance staff. The main purpose of this meeting was ostensibly to discuss and resolve the Council's technical operating problems, but it also provided the opportunity for ICL staff to communicate with the IT department on a number of other issues. Consequently, discussions at these meetings ranged from forthcoming product launches (clearly in the realm of ICL marketing) through to the impact of the newly announced Council Tax on the IT department's staffing arrangements (interview with Assistant Director, Operations 22-02-91). Similar meetings were held with other parts of the Council's IT department. Furthermore, ICL hosted a weekend seminar for the chief officers of the Council. This event was arranged jointly by ICL staff and the IT director exclusively for the authority, was funded by ICL, and was explicitly aimed at generally raising ICT awareness among chief officers (interview with IT Director, 15-02-91). Interviews with the IT director following the event revealed his perception that the weekend had been extremely successful in establishing a consensus amongst chief officers on particular ICT issues, and had reinforced the goals and objectives of the department (interviews with IT Director, 22-03-91, 26-04-91, 03-05-91 *inter alia*). It is possible to conclude, therefore, that an implicit purpose of the seminar had been to implant the shared values and objectives of the ICT network into the other officers of the council.

During the interviews ICL emerged as having a significant influence over the broader ICT policies of the Council. As the major hardware supplier to the Council they were involved in a number of initiatives with the IT department. While it would be foolish to deny that ICL primarily had a commercial marketing objective in supporting such initiatives, the argument here is that this extends beyond a commercial arrangement because the IT department were not passive, but actively encouraged the participation of ICL. In other words, this was a core network relationship in which both actors, although pursuing distinct objectives, could achieve mutual benefit from cooperation. This active association gives added meaning and value to the relationship. More importantly, these actors shared the same perceptions about the role of ICTs in the Council and the problems facing it. In short they shared an appreciative system which ensured a common approach to ICT issues and policy making.

Software Houses - Traditionally local authorities have developed most of their software 'in-house' using their own teams of systems analysts and programmers. Increasingly, however, they have found it necessary to buy software packages from private sector companies, in order to reduce the costs and implementation time for particular functions (Audit Commission 1990, Willcocks 1992). Where this has involved the short-term commercial exchange of a software product for agreed monies the relationship has remained a purely commercial one. Where there is more sustained dialogue between individual software companies and the local authority, however, it is possible to identify a more significant relationship which suggests network involvement.

The case study authority was actively involved with a number of software developers in relationships that extended beyond commercial arrangements. Most notably, ICL featured significantly, providing software for a number of the Council's main functional responsibilities, including Housing Benefits payments (HBIS), Social Services client information (SOSCIS), and the administration of compulsory competitive tendering arrangements in the Civil Engineering and Buildings Maintenance functions (DILIS). The functional limitations of this software, combined with the already extensive relationship that had emerged with ICL over hardware, served to strengthen the influence which ICL

exercised over the IT policies of the Council. Hence, attention was focused upon resolving the functional limitations of software within constraints imposed by ICL hardware rather than concentrating upon achieving the more strategic use of ICT resources (interview with Assistant Director, Development, 05-04-91).

Two other software companies, however, were also actively involved in a network relationship with the Council. Digital Design Incorporated (DDI) had provided a number of packages to the Council, most notably in the area of bonus reward systems for manual workers, and was closely involved in advising the Council on other software activities. An example of this involvement was a report prepared for the Council in April 1991 by DDI, advising it on alternatives for office automation packages (interview with IT Director, 03-05-91). Along with a number of informal meetings between DDI and Council officers this report was instrumental in altering the Council's IT policy towards Unix based applications. This relationship was further enhanced in September 1991 when a formal agreement was reached for DDI to market the Council's software.

A relationship had also developed between the Council and CINCOM, a major software developer that was attempting to become more involved in the local government market. Although primarily an American based company, it was the British branch of the company that had highlighted the opportunity to break into the local government market by developing software for the Community Charge. The Council entered into an arrangement with CINCOM in 1988 to jointly develop a Community Charge package which could be marketed to other local authorities. It was hoped at the time that this would be the first of a number of joint developments that would lead the Council into a much stronger software development position (interview with IT Director, 10-05-91). By 1991, however, the development had run into difficulties and the agreement was dissolved, precipitated by the announcement in March 1991 of the new Council Tax. The consequences of this dissolution on the authority's software development policies were twofold. First, it was a major failure which discouraged the Council from committing resources to other software developments, and in particular, from entering into joint development arrangements with other software houses. Thus, in its subsequent dealings with DDI the relationship was developed into a marketing agreement rather than a development role.

The failure of the relationship with CINCOM highlighted the isolation which self-funded projects caused, and reasserted the local government ICT network consensus that it was now more efficient to purchase software externally than to develop it in-house (Audit Commission 1990). Second, and following from this, the dissolution also discouraged the Council from dealing with other companies who did not have a history in local government. In other words, it reasserted the dominance of the traditional core players in the local government ICT network, and further excluded those who were on the periphery. Consequently, in September 1991, less than six months after the initial announcement of the Council Tax and before the detailed legislation for it had been drawn up, the Council passed a resolution (Policy and Resources Committee, 10-09-91, Item 11) agreeing in principle to purchase the ICL software development (CTAX), and promptly despatched a letter of intent to ICL. This was a major reversal of the policy adopted over the community charge only four years previously, when ICL's market leading product had been rejected in favour of the in-house development with CINCOM.

As with hardware, therefore, network type relations with software companies were restricted to a few major companies, most significantly ICL. Although there were commercial arrangements with other software suppliers these actors were kept at the periphery of the network, and had little ability to influence the Council's software strategies. By contrast, those actors at the heart of the network, and particularly ICL, exercised extensive influence over both individual software decisions and overall software policy, although it must be acknowledged that not all influences were planned or anticipated by individual actors. Nevertheless, the case study interviews provided confirmation that these core actors were particularly influential in establishing a consensus over the general direction of software development policy, the functional systems that were required, and the priorities which the Council should be addressing.

Internal Departments - The interaction analysis highlighted the extent of communication between the IT department and the nine other departments of the Council. Although interactions occurred with all departments, the Finance department was particularly predominant, and can be considered to be part of the core network that influenced IT

policy. Other departments also had an impact upon policy, but to a far lesser degree. It is useful, therefore, to concentrate first upon the Finance department as a core actor in the local government ICT network.

In 1988 the ICT functions of the Council were formally divorced from the Finance department and established within a separate IT department. Despite this formal separation relations between the two departments remained extremely close, assisted by the prevalence of Finance related systems within the authority, and exhibited by the ascendancy accorded to these systems over other functional areas of the Council. In common with many other authorities the major systems of the Council were concentrated around revenue collection (Community Charge, National Non-Domestic Rates, Debtors etc.) and payments (Housing Benefits, Payroll, Creditors, Superannuation etc.), integrated by a Council wide Financial Information System (FIS). The interviews highlighted the importance of the Finance department to ICT policy considerations (interviews with IT Director 15-02-91, 22-07-91 and with Assistant Director, Development 05-04-91, 07-06-91 *inter alia*). The processing needs of the Finance department, especially the increased capacity required for revenue collection systems and the anticipated needs of the new Council Tax, were used by the IT Department to legitimise extensive new contracts with ICL for upgrades to the Council's mainframe on an exchange-hire scheme (EHS), with agreements to convert to other ICL equipment as demands on the mainframe diminished in future years. While the final agreements to upgrade the mainframe facilities was made after the end of the case study period, the interviews with the IT department management team clearly show that the ground was being paved for this exercise well in advance. Thus, a number of requests were made to the Finance department for sizing information for various systems, with considerable emphasis being placed upon the dangers of underestimating capacity. For example, suggestions were made that key systems such as poll tax would become inoperable if the quantity or size of transactions were underestimated (interview with Assistant Director, Development 26-04-91). These actions encouraged generous over-estimates from finance staff, particularly in relation to Council Tax, where details of the system had not yet been made available. It is equally relevant, however, that the Finance department did not raise any objections to these exercises, and actively cooperated in assisting the financial arrangements.

It is important to distinguish the relationship between the IT and Finance departments from those relationships with other departments. The relationship between the IT department and most other departments was demand led. That is to say, each department identified ICT requirements which were subsequently met to a greater or lesser degree by the IT department. There were a number of attempts to develop a greater degree of interaction with departments and, in particular, to foster a consensus on the importance of ICT solutions to emerging functional problems. The chief officers seminar discussed above was a catalyst in this respect, which encouraged the departments to appoint 'IT Liaison Officers', and led to the forming of an 'IT Liaison Group' (the first meeting of this group was held on 19-03-91). This group was created ostensibly to ensure that each department had a formal route through which to influence ICT policy, but a number of the interviewees also highlighted its usefulness in ensuring agreement and consensus on ICT policy more generally (for example, interviews with Assistant Director, Support Services 29-03-91, IT Director 26-04-91). Once trapped into these meetings it was difficult for individual departments to deny knowledge of particular issues, or to reverse the decisions that the group had made on policy. These measures, therefore, provided a mechanism for the IT department to reassert its own policies, rather than a genuine means of opening up the policy area. Most departments remained in a client/customer relationship with the IT Department, acting as passive recipients of ICT policy rather than influences upon it. The Finance department was different. Its relationship with the IT Department was much more equal, and it had a direct input to policy making processes. In particular, it encouraged the consensus that financially based systems were the most critical for the authority. Thus, when the interviewees from the IT Department were questioned about the need for improved 'information systems' in the Council, the answers presumed the term to be synonymous with financial information. Responses concentrated upon the need to feed payment information into the financial accounting systems quicker, and to extend the knowledge of these systems to other departments. Although considered to be relevant, other types of information on Council functions were accorded a much lower priority. Consequently, the IT and Finance departments were involved in a mutual exchange process which led to a partnership between them. It is these aspects of the relationship that lead to the conclusion that the Finance department was a core actor in the local ICT network, rather than a peripheral and passive recipient of ICT policy.

Other Network Actors - Most internal departments were excluded from a position of influence in the network. There were also a number of other potential actors that were excluded from the network at this level. Most significantly there was no overt political involvement in the ICT policy making process. For example, the desire to upgrade the mainframe emerged from interactions between the principal actors identified above: namely, ICL as both hardware and software supplier, the Finance department and the IT Department. The only obvious political involvement in this issue was at the end of the decision process in the form of political consent. At this point, politicians were presented with a stark choice of upgrade investments or a potentially damaging and unacceptable decline in the standards of service throughout the Council, due to an inoperable mainframe. Similarly, the decision to 'sign-up' in principle to the ICL Council Tax software was determined by the same group, and simply rubber-stamped by the appropriate committee. Interviews with the Leader of the Council (24-07-91) and with the Chief Executive (06-08-91) both indicated that they did not feel that they should be directly involved in the technical details of ICT policy and saw no reason to question the policies developed by the IT Department provided they could be shown to be consistent with the overall mission of the Council.

Besides internal departments and elected members, there were a number of other notable exclusions from the network. Central government had very little involvement, as did professional bodies, although it is possible that their influence was mediated through other departments. Similarly, there were also only a few interactions with other local authorities. Despite the limited number of communications with other authorities, however, their impact was significant. Most notable was the involvement of the IT Director in the Greater Manchester IT Group, a loose association of all local government IT managers in the Greater Manchester area (except Trafford MBC) which met quarterly to discuss issues of general interest to its members. Interviews with the Director emphasised the degree of consensus that existed across this group over the major issues facing them and the most appropriate responses to these problems (interview with IT Director, 15-03-91). Although not influential over individual decisions, this group emerged as being a significant influence in developing and reasserting the values and opinions of the ICT network: that is, in sustaining a dominant appreciative system.

Finally, it is necessary to explain the exclusion of the facilities management and consultancy actors from the core network processes. Both of these actors appear to have been used by the core actors to reaffirm existing values and activities, and to act as mediators with other peripheral actors, especially internal departments. They also provided an important means of horizontal articulation with ICT communities in other sectors of the economy. While these actors were indirectly useful in supporting a wider consensus on the appreciative system of the network, however, their ability to directly influence the ICT policies of the case study authority was more limited. The interviews did not reveal any examples of direct influence from consultants or facilities management (FM) companies, although the IT Director did indicate that he was keen to use the information provided by such actors in order to arrive at market comparisons of his department with others (interview with IT Director 15-02-91).

Conclusions on the relative influence of network actors

The most significant conclusion from the analysis so far is that the major influences on ICT policies were restricted to three key actors who formed the core of the network: the IT Department, the Finance Department and ICL (as the major hardware and software supplier to the Council). The dominance of this triumvirate had important implications for the scope and direction of ICT policy in the Council, not least because it provided a very narrow interpretation of the role and purpose of local government which was concentrated around efficient and effective service delivery. The exclusion of other important actors, especially those who would have been able to introduce more corporate or democratic values into the policy process is also significant, because it further emphasises the exclusive relationships which dominated ICT policy making. Following directly from this it is evident that a key feature of the three core actors was their shared appreciative system which informed their approach to particular issues and their general outlook on ICT policy. In particular, this emphasised two underlying values for ICT strategy in the authority. First, the financial focus of the network was apparent. The dominance of the Finance department in terms of both system applications and resources consumed has already been noted, but the influence of the Finance department on the

fundamental values of the network was much more pervasive. Even where ICT developments were occurring in other departments the major concern was often for the financial management information that such systems would deliver. Furthermore, a concentration on financial savings was a dominant theme in all such investments - a theme that took considerable priority over other themes such as service quality or political concerns. The financial focus of the network, therefore, underpinned much of the approach to ICT policy making. Second, a concentration on finding technological rather than political solutions was apparent. A key strategy of the core actors, therefore, was to make all issues essentially technical in nature, requiring technological rather than political interventions. This involved a concentration on those aspects of management which could be quantified and measured, most notably financial management. At the same time, system developments were heavily circumscribed to emphasise their technological integrity and sophistication, and to distinguish this from the 'messy' political world of local government. The most clear example of this came in the inaugural meeting of the 'IT Liaison Group' (19-03-91) when representatives from user departments were told by the IT Director:

Our aim is to work with you to develop and support the systems that you require to manage your business efficiently and effectively. Within the current financial constraints we [the IT Department] will do our best to ensure that you have the most appropriate IT infrastructure, together with suitable and comprehensive training, to fit your needs. Your role as IT Liaison Officers is to ensure that your departments make the best use of IT resources.

The effect of this and subsequent discussions on the relationship between the IT Department and other departments was to emphasise the essentially technical nature of ICT policy, and to distance it from any political interference. In short, the IT Director drew a line under the technical systems which separated out the technological solutions from the potential personnel and political problems that individual departments might face.

The consequences of these two values on ICT policy was not only to concentrate network support on particular types of initiatives, although this was clearly the case. There was also an implicit rejection or deferral of any initiatives which did not fit within the financial/technological domain which the network had created. This was not an active dismissal of particular projects. Rather, it was a systemic bias which prevented any

proposals that did not fit the financial/technological criteria of the network from ever reaching the ICT policy agenda. Actors within the network were effectively blind to any initiatives which would not fulfil the dual values of the core participants. Furthermore, the core actors were also able to impose these values on other actors at the periphery of the network, thus perpetuating the systemic bias. The implications of these findings will be further developed in chapter 9. But first it is necessary to consider the resource dependencies which provided the cohesion for the network.

Resource dependencies

The consensus over the policy agenda and policy outcomes that characterises networks is derived from the complex resource dependencies that develop between them. It is these dependencies which provide for the fusion of actors into communities with shared values and appreciative systems. It is important, therefore, not only to identify the core actors in the network, but also to examine the structure of dependencies that exist between them.

The existence of commercial relations between two or more parties is not sufficient to indicate network dependencies. The exchange of commodities for finance does not necessarily lead to the sharing of value systems, or a consensus on policy in a particular sector. In a policy network core actors must have a degree of permanency and interconnection in their relations which suggests interdependence between them: it is the concept of interdependency which distinguishes the relations of the core actors from other types of relationship (for example, with actors on the periphery of the network). The iterative interviews revealed a high level of interdependence among the core actors of the network, which manifested itself in the resource exchanges between them. These resources included both observable commodities and artifacts such as items of hardware, software, finance and staff time, and also the more implicit and latent products of individual actors such as expertise, information and legitimacy. These resources can be analysed on a continuum, with tangible, explicit commodities representing one extreme of the exchange process, and the more subtle aspects of expertise and legitimacy the other. Figure 7.5 illustrates this continuum, and places the key resources of the ICT network along it.

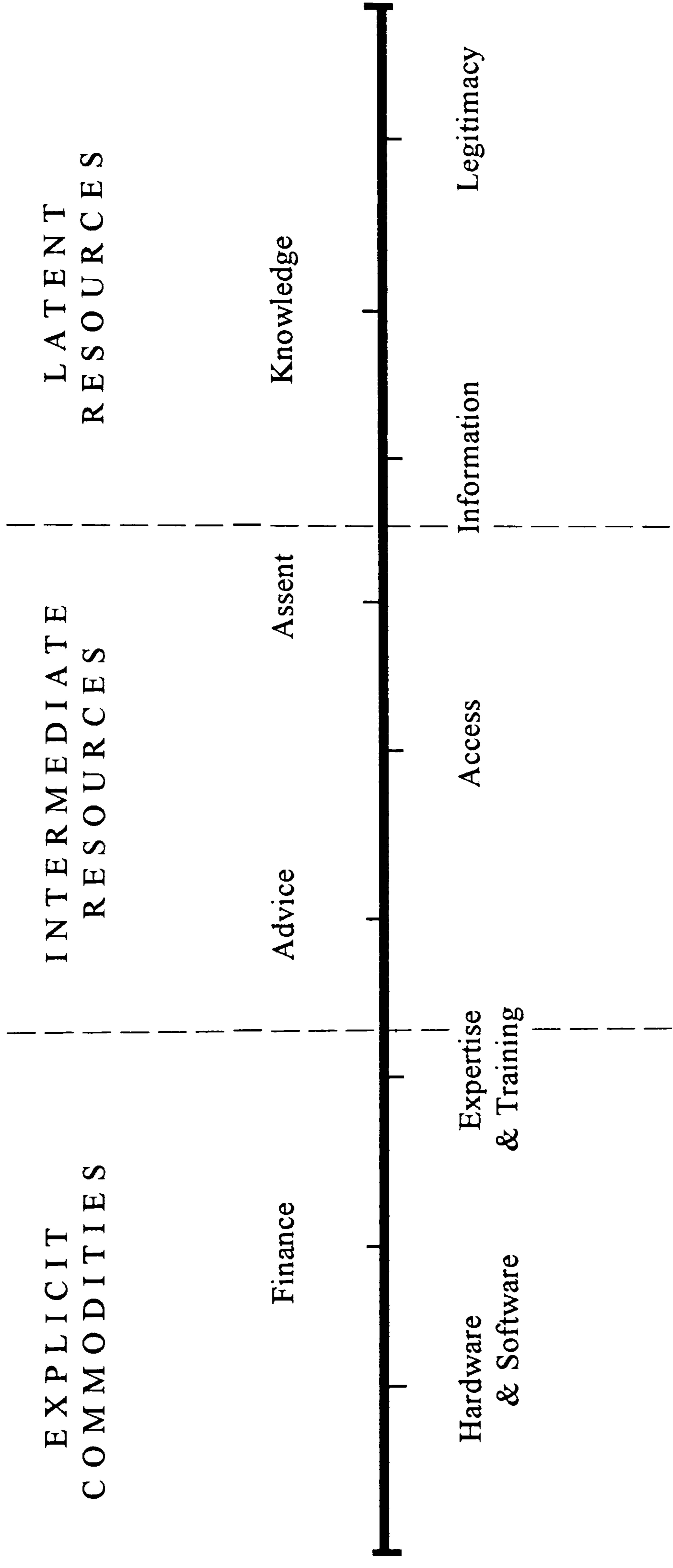


Figure 7.5

The local government ICT network resource continuum

At one end of the continuum resource exchanges are associated with tangible, visible materials, and are generally subject to commercial and contractual relations. The further along the continuum that resources fall, however, the less visible they become, and the more subtle and implicit the exchange processes are in influencing policy and generating or maintaining interdependence. These latent resource exchanges are not subject to open contractual arrangements, and do not necessarily offer a two-way transaction process in which a direct correspondence can be established between the exchange of one resource and the return of another. At the opposite end of the continuum, therefore, resources demonstrate a much less tangible and more ethereal quality. It is these more intangible exchanges that provide for the intertwining of actors and the interdependence of relations, and which distinguish network relations from commercial relations.

Evidence from the case study showed that resource exchanges in the local government ICT network occurred across the full range of this continuum, but varied according to the nature of the transactions and the actors involved. Different actors had different resource needs and exchanged at different points on the continuum. These can be analysed by dividing the resources into three groups: tangible commodities at one extreme of the continuum; intermediate resources at the centre; and latent resources at the other extreme.

Tangible commodities: hardware, software, finance, expertise and training

At one end of the continuum actors were concerned with the exchange of visible commodities such as individual items of hardware or software in exchange for finance. Elements of expertise and training, delivered in the form of consultancy also fall into this group, being open to a two-way contractual exchange process. The hardware and software companies traded their commodities in exchange for the finance offered by various local authority departments. Each exchange of this type of resource was subject to visible contractual arrangements between the relevant parties, and was characterised by a two-way commercial transaction of monies for goods. These resource exchanges, although primarily commercial in nature, are nevertheless important to the analysis of the network.

These were not one-off exchanges, but frequent commercial transactions between the core actors, and provided direct and visible evidence of the relationship between them. Consequently, the IT Department, with the approval of the Council's Policy and Resources Committee (Policy and Resources Committee, 13 June 1991, Item 7) entered into a special arrangement to spend an agreed sum of money with ICL on unspecified products over a two year period in exchange for significant discounts and additional training and staff support facilities (interviews with IT Director, 08-03-91 and 17-06-91). This agreement covered a wide range of hardware products, and allowed the Council to choose from a number of different hardware and software technologies to meet its emerging requirements, provided that the purchase was made through ICL. The effect of the agreement was to further cement the relationship between the IT Department and ICL at one end of the continuum. At the same time it also affected other relationships in the network. By committing a significant sum of money to this agreement and extracting substantial discounts from the vendor, the IT Department had further confirmed its central place in the network, forcing other departments to deal through it for hardware in order to receive the economies that the IT Department had negotiated. Software companies wishing to deal with the Council also had to take into account the IT Department's renewed commitment to ICL, and offer software that accommodated this commitment. The effect of the agreement, as with other exchanges at this end of the continuum, was to reassert the IT Department at the nexus of the network.

Intermediate resources: advice, access and assent

Both ICL and the software companies identified earlier as core actors (DDI and CINCOM) were keen to offer advice in both formal and informal ways to other actors in the network, without any direct financial or contractual reward for their efforts. At a formal level, ICL and DDI both prepared detailed reports for the Council, making recommendations on the future of office systems in local government (internal ICL report to IT Director dated February 1991 and internal DDI report to IT Director dated April 1991). While these reports inevitably favoured their own companies products, they were much more extensive in their review and recommendations than a conventional marketing document,

highlighting many aspects which were of no direct relevance to their own products. These reports were followed up by a number of separate and more informal meetings in which detailed recommendations were discussed.

In return for this advice, the IT Department offered a unique and assured means of access to other Council departments. This meant providing a route through which the hardware and software companies could establish and develop contacts with other departments, in conjunction with the IT Department. All project teams throughout the Council that had an ICT implication had a representative from the IT Department involved in them (IT Department 'Systems Standards and Procedures 1990). While ostensibly looking after the interests of the 'user department', the IT representative would also act as the link between the customer departments and the other core actors in the network. The role of the IT representative, therefore, was to expound and reinforce the values of the local government ICT network, encouraging developments in the directions that benefited the interests of the network. Because the core actors were in regular communication with the IT Department there was implicit pressure on individual IT staff to encourage the network ideology. By requiring all expenditure on ICTs to be approved by the Director of Information Technology, Council standing orders also granted the IT Department exclusive control over ICT expenditure. Thus, in return for advice, the IT Department was able to offer key actors access to the authority, and its assent for the development of contractual relations in specific circumstances. Without this access and assent, hardware and software companies were effectively excluded from trading with individual Council departments. These central resources, therefore, provided the crux of the IT Department's power in the network.

Latent resources: information, knowledge and legitimacy

At the other extreme of the continuum, the possession and exchange of information, knowledge and legitimacy can be seen as latent resources controlled by departments within the authority, and channelled through the IT department. Information is concerned with the details of departmental requirements, and the policies towards ICTs that each

department is likely to pursue. This information is of great value to commercial organisations interested in selling products to individual departments, but is not easily obtained. It is dependent upon a whole range of factors, including the financial circumstances of the department (and the authority as a whole), the current policy objectives, existing resource investments, and external environmental factors such as legislation. Actors at the core of the network, therefore, made use of their relationship to gain access to these informational resources. During the period of the case study, the IT Department began to recognise the importance of this type of information to the network, and identified a role for itself in collecting and coordinating it. Consequently, as part of the IT strategy review that was put to the Council's Strategy sub-committee in February 1991, each department was required to develop, in collaboration with the IT department, an 'Information Systems Strategy', and to nominate a senior officer responsible for liaison with the IT Department (the IT Strategy Review will be dealt with more comprehensively in chapter 8). This move was in line with general developments in the wider ICT community, and encouraged the systematic collection of information which benefitted the core network, and which was controlled by the IT department. The research interviews attempted to determine the source of this initiative. While no interviewee was able to identify its origins, it was made clear that there was a significant consensus within the network that this was an appropriate measure to take. Indeed, ICL staff were particularly supportive of the initiative, and offered informal advice as to how best to operate the new arrangements.

Knowledge refers to the general enlightenment which comes from the implicit understanding of a policy area by active participation in it. It is the professional groups within the authority who control this knowledge. Thus, software companies attempted to forge relationships with particular professional groups, in order to gain access to their knowledge of the policy area. During the period of the case study a number of examples of knowledge exchange occurred. The agreement with CINCOM for joint development of the Community Charge software was an example of knowledge possessed by individual groups within the authority being exchanged with other network actors. In particular, CINCOM exchanged tangible resources such as software and programmers in return for access to the Council's detailed and professional knowledge of local government financial

processes and standards. This knowledge exchange, however, need not occur in such an explicit manner. The interviews with the IT departmental management team highlighted the extent of informal contacts that occur through them to individual departments with relevant knowledge (interviews with IT Director, 15-02-91, Assistant Director, Development, 22-02-91 *inter alia*).

Finally, legitimacy is the most latent and least explicit resource exchanged within the network. By purchasing particular hardware or software products, and by acting as referees for those products to endorse their use, individual departments, and the authority as a whole, were able to confer legitimacy upon vendors. A major selling feature for software systems in the local government market is the track-record of both the vendor and the product itself. If the product has been sold to other authorities, both it, and the company marketing it, acquire a legitimacy that facilitates further sales. This legitimacy is not permanent, however, and it is important for companies to continue to reconfirm legitimacy by enhancing sales, either through 'leading-edge' upgrades to existing systems, or by replacement systems. Consequently, companies sometimes enter into sales agreements that do not meet their costs, in order to achieve a legitimation of their products. The agreement with ICL referred to earlier can be viewed in this context. Because ICL wished to encourage the Council to purchase 'leading-edge' technologies such as Unix based office systems, it was prepared to enter into an agreement offering substantial discounts over the two year period in return for the Council's endorsement. The outcome of this agreement has been a series of legitimation exercises, including a jointly produced marketing pamphlet highlighting the benefits of the relationship (entitled 'Working Together'), and emphasising the support of the Council at the highest level for ICL's products.

Because legitimation confers the right to participate in the network, it is also an effective means of excluding other actors. Consequently, companies with apparently adequate products can find it difficult to break into the network. This has been the case with McDonnell-Douglas in respect of the case study authority. Selling integrated hardware and software solutions, McDonnell-Douglas are particularly active in local government, particularly among shire district authorities, but have had little success in breaking into

the larger metropolitan authorities or shire counties, which remain dominated by ICL and IBM equipment (SOCITM, 1988, 1989). The company had successfully sold a grounds maintenance package to the case study authority in 1989, and wished to use this as a platform for developing its activities in metropolitan boroughs. Although the Council had exchanged financial resources at the explicit end of the continuum., it was reluctant to enter into any exchanges at the latent end, and resolutely refused to confer legitimacy on McDonnell-Douglas (in direct contrast to relations with ICL). When asked about this in the research interviews, the Director of IT defended this by expressing doubts about the competency of McDonnell-Douglas in comparison with ICL, and argued that the relationships being developed with ICL did not leave room for the type of relationship that McDonnell-Douglas wished to cultivate (interview with IT Director 22-07-91). Consequently, McDonnell-Douglas were excluded from the core of the network, by being denied access to the information, knowledge and legitimation resources of the Council.

Conclusions: dependencies and interdependencies

The local government ICT network resource continuum highlights a broad range of resources that were exchanged between the core actors in the network, and which led to, or strengthened, network interdependencies. At first glance, a concentration upon explicit commodities such as hardware and software suggest that private sector companies enjoy a relative monopoly of power in resource exchanges. This could be so particularly in relation to hardware exchanges. As the analysis has progressed along the continuum, however, the significance of the more opaque and latent resources has emerged. Thus, the relative monopoly of information, knowledge, and legitimacy possessed by local authorities suggests a subtle but powerful influence upon the core actors. These implicit resources are used by the network to exclude actors on the margins of the network, and to bind the core actors together. Indeed, the case study interviews suggest that these resources have been used with much greater success to exclude marginal actors, than the more explicit use of financial resources.

While all of these resource exchanges are important in developing an analysis of the interdependencies of the local government ICT network, however, it is the central resources of access and assent that are the key. Within the case study authority, the IT Department acquired an effective monopoly of access and assent, which enabled it to control resource flows at both ends of the continuum. At the explicit end it was able to dictate which commodities were purchased. More significantly, at the latent end of the continuum it was effective in controlling the access of actors to the Council's information, knowledge and legitimation resources. Consequently, the IT department was able to utilise its apparently limited resources of access and assent at the centre to control resource flows throughout the full range of the continuum.

The other key conclusion to emerge from this analysis of dependencies is the interdependent nature of the core actors: that is to say, the capacity of individual actors to take unilateral action was inhibited by their dependence upon the resources held by other actors, and by their own perceptions of the strategies necessary to secure the appropriate exchange of resources. While private sector companies may have held an asymmetrical balance of resources in terms of the development and marketing of technological commodities, their ability to impose these upon local authorities was constrained by the perceptions and activities of others in the network, who held equally valuable but less tangible resources. Policy outcomes, therefore, were not the result of unilateral action on behalf of individual actors, but were the consequence of a complex set of interdependent exchange relations between the tripartite actors of the network based upon a shared consensus and appreciative system.

Conclusions

In analysing the findings from the case study this chapter has concentrated upon addressing two key issues which transcend the detail of the research methodology. First, it has concentrated on the extent to which there is a clearly discernible network for ICT policy making in local government. Second, it has identified the principal patterns of interaction and influence on ICT policy, and the relative influence of different actors over

different issues. By concentrating on the dual approach of network actors and resource dependencies the chapter has been able to analyse a complex process of policy influences from which three main conclusions can be drawn.

First, the case study evidence clearly shows the existence of a policy network. The extensive attempts by different actors to influence ICT decisions in the case study authority emphasises the degree to which a discrete policy area exists around the issue of ICTs in local government. The interaction analysis showed 2346 communications with the IT Department over the six months of the study from a wide range of actors. The ability of a few key actors to dominate the network and marginalise the influence of other actors, however, especially as revealed by the iterative interviews, was equally significant. The close relationship between these core actors, and their ability to marginalise the influence of those on the periphery, enabled the network to draw very precise boundaries around its own policy area. The technical and professional wisdom of ICT policy as determined by the core actors went largely unchallenged.

Second, the case study evidence shows a complex pattern of influence based around a sophisticated process of resource exchanges. These exchanges ranged from the tangible commodities of technological developments through to the more latent resources of knowledge and legitimacy. Although these resources were distributed across the network, thereby ensuring that no individual actor could exploit a monopoly of any particular one, it was nonetheless evident that the IT Department played a pivotal role in controlling exchanges. Its role in controlling access to the key resources of the other actors was derived partly from its formal position and status, but also from the useful function it provided to other actors in mediating exchange relations. Thus, it suited all of the core actors to play through the IT Department. Indeed, as a senior marketing consultant in ICL stated:

one of the good features about the Council's set-up is the strong strategic steer which the [IT] department gives to the authority. Their strong leadership makes it much easier for us to see where the Council is going and for us to furnish them with the solutions that they need. It also saves us having to deal with lots of fragmented bits of the organisation, all of whom want something different that's incompatible with everything else. (Interview with ICL marketing consultant, 10-05-93)

The ability of the IT Department to facilitate resource exchanges and to mediate between actors, therefore, was a central feature of the network.

Finally, the implications of this network for policy development and outcomes are important. Implicit in the degree of co-operation displayed by the three core actors in resource exchange was a consensus on both the role of ICTs within local government, and a deeper agreement on the underlying values and perceptions which should inform ICT decisions. In short, this amounted to a tacit agreement over which applications technologies should be applied to, and which criteria should be used to evaluate them. More than this, it also demonstrated an agreed set of values relating to the technical and financial application of ICTs which militated against the use of ICTs for other initiatives. In relation to the agenda of change outlined in chapter 3, and the role and purpose of local government defined in chapter 4, the ability of this core group of actors to develop and impose a limited set of values which underpins all ICT developments has substantial implications for the wider evolution of local government. These broader implications will be analysed in more detail in chapter 9. But first it is necessary to analyse the specific policy outcomes of the ICT network in order to understand the ways in which they reflect and contribute to the wider role and functions of local government.

FINDINGS FROM THE CASE STUDY: POLICY OUTCOMES

Introduction

Analysis of network actors and their resource dependencies is an important factor in understanding the complexity of relationships which underpin policy networks. But an exclusive focus on actors and their dependencies provides only a partial analysis of the way in which policy develops within such networks. The ability to demonstrate the existence of a network is of little value if that network cannot be shown to have a significant influence over policy development, and ultimately, over policy outcomes. Policy outcomes are important to network analysis because they provide the tangible evidence of network influence, in relation to both individual policy decisions and more general policy evolution. The assumption is that the complex set of relationships and dependencies that underpin the network have important effects on policy outcomes. Outcomes are qualitatively different not only because of the influence of individual actors but also because of interaction between different actors. The complex interaction of actors and their interdependencies limits the impact of any one actor and leads to an evolution of policy that reflects negotiation and compromise in the mutual interests of all core actors. Furthermore, the relationship of the policy network to specific policy outcomes is not one way. Rather, it is a dynamic or iterative cycle of policy processes and outcomes in which individual policy outcomes not only reflect network processes and interactions but also have an effect upon them. Policy outcomes can affect the network either by encouraging individual actors to adjust their behaviour where they are unhappy with individual outcomes, or by consolidating particular values or behaviours. In the latter instance such policy outcomes serve to create precedents and legacies which form part of the institutional framework of the network on which future interactions and outcomes are

based. A focus on policy outcomes, therefore, is a necessary corollary to the earlier concentration on network actors and dependencies.

This chapter analyses the policy outcomes from the ICT network in relation to the case study authority by concentrating upon the IT strategy process. The IT Strategy was a document produced by the IT department to provide a formal statement of the authority's standards and applications, and to provide a strategic vision of the way in which ICTs should contribute to the work of the council in the foreseeable future. It provides a useful framework with which to analyse ICT policy outcomes because it provides a formal statement of ICT policy in the case study authority - that is, it reflects the rational and considered opinion of the IT Department of the role of different technologies in the organisation and the ways in which they should be applied and managed. This formality is amplified by the fact that the strategy document, and its subsequent review, were both ratified by the Council's policy and resources committee, thereby giving it a quasi-official status. The explicit IT Strategy also provides a valuable bench-mark with which to compare the perceived strategy with the reality of policy outcomes. As this chapter will demonstrate, despite offering detailed specification of technical configurations the strategy documents were inherently ambiguous, leaving the IT Department great scope for flexibility while committing the Council to significant investments in new hardware and software. By focusing upon the IT Strategy process, therefore, this chapter is able to analyse the effects of the local government ICT network in relation to both its formal and informal policy outcomes.

This chapter is organised around four main sections. First, the formal IT Strategy process is outlined. Second, the policy outcomes of the IT Strategy review as they affected technical hardware are analysed, especially in relation to a significant move away from mainframe processing towards more distributed systems concentrated around an open systems architecture. Third, the main policy outcomes in relation to software are analysed, especially in the context of a rapid shift away from in-house development of software to the purchasing of commercial products to support organisational functions. Finally, the chapter considers the implications of the formal and informal policy outcomes of the local government ICT network for the broader issues affecting local government.

Formal policy outcomes - the IT Strategy process

To develop a thorough analysis of the major policy outcomes of the network, the case study concentrated on a six month period which spanned the publication of the Council's formal IT Strategy review and its subsequent policy outcomes. This strategy statement was the most highly visible policy outcome of the ICT network, and can be used as a heuristic tool to help identify the more opaque policy processes and outcomes. In order to consider the wider factors that influenced the policy making processes, it is important to take into account events both prior to the case study and subsequent to it. While the analysis here concentrates upon the major influences and outcomes during the six months of the case study, it also uses events from outside of this period to support the isolated instances under analysis, and to underline the long term nature of network relationships and policy processes. It begins with an analysis of the Council's first IT Strategy.

The 1988 IT Strategy

The Council developed and published its first IT Strategy in 1988. This was a natural development from the creation of a separate IT Department, and the appointment of a Director of Information Technology to lead the Department, and to represent the department's interests on the Chief Officers Group. The purpose of this initial IT Strategy was:

- to focus IT investment on Council priorities and policies.
- to increase the cost/beneficial use of IT and to encourage the involvement of users in this process.
- to organise the IT departmental functions to improve service delivery and to reduce unit costs.

(IT Strategy Review, 1990, para 1)

To achieve these broad objectives the strategy concentrated upon defining specific tasks for internal divisions of the department, with clearly defined targets and anticipated

accomplishment dates which were directly linked to broader Council policies. For example, an explicit link was made between the Council's overall employment strategy, and proposals to improve the quality of management information systems in the direct labour organisations of the authority. In addition, technical standards were defined, to which all departments were expected to conform.

The language and presentation of the 1988 IT Strategy suggest that its main purpose was to act as a benign and logical plan of technical details which supported the overall objectives of the Council. Consequently, it was presented as a continuation and consolidation of existing practice which should be welcomed by all rational participants. In retrospect, however, it is possible to see that the main function of the strategy at this stage was to ensure political consensus over the central role of the IT Department in defining the ICT framework of the authority, and to confirm its dominant position in determining ICT policies both corporately, and in individual departments. Although the strategy called for much greater user participation in ICT decisions, and expected user departments to contribute staff to ICT projects (sometimes in the form of long-term secondments), it also went to great lengths to ensure a consolidation of the IT Department's authority in ICT related matters. By defining standard procedures for the development or purchasing of hardware and software, the IT strategy was able to involve users in individual decisions, while at the same time make explicit the limitations of user jurisdiction and influence. Thus, the 1988 IT Strategy set about confirming the IT Department's domain by identifying the boundaries of external involvement in its decision making processes, and seeking consensus among chief officers and Council members of its authority in this sphere. Once the strategy had been approved by the Strategy Subcommittee of the Policy and Resources Committee (4 February 1988), the ascendancy of the IT Department on all ICT policy matters was confirmed.

The creation of a central IT Department and the evolution of an IT Strategy aimed at confirming the dominance of that department on ICT related matters is closely linked to developments in the broader ICT community. The growing recognition of the importance of information as a distinct organisational resource, particularly within government, gave added impetus to the need for central management of technologies that allowed for the

control, manipulation or communication of information. Consequently, SOCITM chart a growth in local authority IT strategies from 53 per cent of their respondents in 1987 to 93 per cent in 1992 (SOCITM, 1987 and 1992). Similar trends are observed by Price Waterhouse in other sectors of the economy (Price Waterhouse, 1986 and 1993). In short, there was intense pressure for organisations of all types to do more to manage their information resources. As recently as 1990, the Audit Commission was still arguing that despite the apparent importance of information to local government:

The most alarming problem is senior management failure to appreciate the potential benefits which IT offers...There are still authorities where members and chief officers remain sceptical about the strategic value of IT and the need to respond and adapt to changing circumstances (Audit Commission 1990, p5).

The pressure for more central control of information resources, therefore, clearly came from outside of individual authorities, from the broader ICT policy network.

It would be inaccurate to argue that the approval of the 1988 strategy represented the formal conception of the ICT policy network in the case study authority, as there is significant evidence of network activity prior to this event (for example, in bringing about the establishment of the IT Department in the first place). Nevertheless, this first strategy does represent a significant watershed in the evolution of ICT policy making processes, because it provided for a centralisation of authority within the IT Department, and a reduction of the influence of individual departments over both corporate ICT policy, and their own internal ICT needs. The impact of this change was subtle and went unnoticed among most departments, who welcomed the apparent additional and clearly defined involvement that they now had in ICT matters. Nevertheless, it was important in contributing significant authority and status to the IT Department, and laid the basis upon which more sophisticated changes were made possible in the subsequent IT strategy review.

The 1990/91 IT Strategy Review

The 1990/91 IT Strategy Review took place within the context of the issues identified above. Overtly, the IT Strategy Review that took place during 1990, and which was finalised in the spring of 1991, was intended to be a transparent and open process to which all departments of the Council were invited to contribute. The process involved consultation with the management teams of every Council department, as well as detailed internal review of the progress made since the previous strategy was published. In practice, the review process can be seen as being a means of reasserting the dominant values and policies of the ICT network and of increasing the IT Department's influence by encouraging other departments to take ownership of the strategy themselves. Having contributed to the process by which the strategy was supposedly developed, it became very difficult, if not impossible, for individual departments to later reject any of its proposals, or to argue for variations to them. Because most departments, and individual officers within them, still considered ICT issues to be secondary to their own policy issues, and the technologies themselves to be benign and inconsequential tools for the achievement of internal policy objectives, few contributions were forthcoming beyond the limits of individual complaints about specific operational problems. Consequently, the IT Department was able to use the review process to reinforce its own dominant values, and those of the network, and to usher in new strategies that increased its own autonomy and influence in relation to other Council departments.

It is the policy outcomes brought about by the IT Strategy Review that most of this chapter will concentrate upon. Although the final draft of the review, which was approved by the Strategy Sub-Committee of the Policy and Resources Committee on 21 February 1991, made 11 main recommendations, this section will concentrate upon the two most substantive outcomes of the review: the changes in the hardware strategy of the Council; and the changes in the software development policy of the Council. By exploring the policy outcomes under each of these headings it will be possible to illustrate the limited influence of internal departments over these changes despite their apparent access to the review process, and to analyse the more extensive influence of the local government ICT network in bringing about those changes which benefitted the needs of

individual actors within it. These changes are important because they structure the application of ICTs in the authority in such a way as to make only a limited and impoverished contribution to the role of the Council as service provider, and implicitly militate against their use to produce more sophisticated applications which might encourage the development of democratic and policy making roles by the Council. Consequently, it is important to concentrate not only upon declared policy objectives, but also upon actual policy outcomes.

Policy outcomes: hardware

The final document produced as part of the 1990/91 IT Strategy Review used language that suggested continuity and convergence of policy over hardware issues, rather than any radical change or reversal of policy. It stated that among other policies it would:

- *continue* to use the ICL mainframe for all large scale processing and corporate information systems
- *continue* the trend towards departmental computing (IT Strategy Review 1991, para 7 - emphasis added)

In reality, the strategy review signalled a major shift in hardware policy away from mainframe processing, and towards distributed departmental mini-computer systems. Statements of this change were described within the strategy in terms of being logical and relatively minor variations to existing policy:

New computer applications will be acquired or developed with machine independence as an objective so that options for future equipment purchases are increased... The longer term aim is to become less dependent on one supplier and less dependent upon one central machine. (*ibid*, para 32).

The policy shift, therefore, is difficult to detect within the reassuring language of the review documentation, which stressed continuity and gradual evolution rather than radical or revolutionary change.

This shift in policy occurred over three related technologies. First, there was the shift in emphasis away from the mainframe, and towards distributed departmental systems. That is not to say that resources were diverted away from the mainframe: indeed, substantial

upgrades to the mainframe took place in 1993, over two years after the review, partly due to network interactions between the IT and Finance departments. Nevertheless, there was a recognisable decline in the value of the mainframe to the information needs of the Council in relation to other technologies. This can also be termed 'down-sizing', and was a common policy in many sectors of the economy at the time (for example; Unix News, November 1992). In principle, down-sizing went well with the broader decentralisation objectives of organisations, distributing direct control of information systems to the 'front-line'. It also met the demands of individual computer users who were dissatisfied with the remoteness of centralised mainframe systems, and wanted more control over their own information systems. The definition of control in these circumstances, however, was limited to meaning control over operational times and access arrangements, along with more involvement in deciding upon software: it did not include a desire for control over any of the more substantive information policy needs. This shift in hardware policy did not involve an immediate reduction of either mainframe capacity or expenditure on mainframe activities. It did, however, involve substantial new investment in mini-computer systems.

The change in investment priorities is important not so much for the technological changes that it brought about, as for the changes in political focus that it enabled. Within the Council the increasing expenditure on ICTs had begun to attract political attention. For example, as the IT Director explained, it was a common complaint among elected members of the Council's Policy and Resources Committee that expenditure by the IT Department on new computing resources was immoral when there were homeless people in the Borough (interview with IT Director 15-02-91). The solution to this problem was to place the responsibility for ICT investments with the functional departments, thereby developing a much closer link between ICT expenditure and service improvements. This form of departmental sponsorship was already part of the justification for mainframe expenditure, but allowed for a much stronger link to be developed once the hardware could be explicitly associated with individual departmental services. As well as meeting departmental demands for more control over their own information needs and fitting suitably with the broader decentralisation trend, the shift from mainframe to departmental mini-computers was used by the IT department to maintain its apolitical status.

The second policy change associated with the hardware policy concerned the communications network infrastructure of the Council. To support the distributed processing objective, the communications network of the Council was given increased emphasis, leading to the IT Director's repeated assertions in interviews that 'the network is at the heart of our business. It is one of our greatest strengths' (interviews with IT Director 15-02-91 and 21-05-91). Again, this change in emphasis reflected wider changes in the ICT community, placing increased importance upon information flows, and the hardware that supported it. Surprisingly, the strategy review documentation does not provide much indication of the increasing significance of the communications network, beyond spelling out its technical details. Indeed, the strategy review appears to suggest that the communications network is of only limited relevance to both the IT Department and its customers, labelling it as 'computer connections'. Evidence from the interviews with the IT Director and all of the assistant directors indicates that this was clearly not their view of its functions or abilities. Both individually and collectively the IT departmental management team saw the communications network as providing the central control over distributed resources (interviews with IT Director, 15-02-91; Assistant Director, Development, 22-02-91; and Assistant Director, Operations, 08-03-91 *inter alia*). Although they lacked the technical competence to comprehend the details of the technology, they recognised that by providing the central resources to interconnect all departmental machines the IT Department would be able to provide for the integration of information from disparate systems. More importantly, it would also continue to maintain a 'corporate' and technical hold over individual departmental systems, ensuring continued access to decisions over each individual system.

For different reasons, other actors in the ICT network supported this increased emphasis on the communications network. Not only did commercial actors (e.g. hardware and software manufacturers) have vested interests in supporting a central IT Department which would act as an advocate and champion from within the organisation for more ICT investments, but various actors were also pursuing complementary strategies which supported increased communication network activity. Most significantly, not only did ICL provide the case study authority with communications hardware in the form of its proprietary networking system (OSLAN), it was also positioning itself as a major player

in the area of systems integration (ICL Direction Statement, 1992; interview with ICL Senior Marketing Consultant, 10-05-93). Other hardware, software and consultancy companies were adopting a similar policy (Unix News, May 1993, pp71-72). By encouraging a new focus around communications networks, therefore, these actors could see increased marketing opportunities for themselves.

The third related policy change emerging from the IT Strategy Review concerned the operating systems which the new distributed computers were to run, and the open interconnectivity of these systems. Although the previous strategy had accepted the need for open systems, the 1990/91 review made a much greater commitment to them, not only by direct reference, but also in the actions that immediately followed its publication. The Unix operating system, together with a communications network based on GOSIP (the Government Open Systems Interconnection Profile published by the CCTA - now the Government Centre for Information Systems), were seen to be the key to delivering an open systems policy, and a number of investments were made to secure this policy objective. As already noted, the Council, through the IT Department, entered into an agreement with ICL to spend an agreed amount on ICL's open systems products in return for substantial discounts on their normal prices. These products included the ICL version of Unix (DRS/NX) the ICL mini-computers specifically designed for use with DRS/NX (the DRS3000 and DRS6000 range), and the ICL integrating system, OFFICEPOWER. The arrangement also included consultancy and training from ICL on open systems. Thus, the Council's open systems policy became intrinsically bound up with ICL's own interpretation of the OSI framework, and ICL's marketing strategy towards these technologies.

As with the broader move towards distributed processing, the open systems initiative came more from network pressures than from internal requirements. In particular various European Community directives (especially EC 87/95) were requiring public bodies throughout the whole of Europe to subscribe to open systems architectures. There were also various other international pressures to encourage the adoption of open systems policies, including international collaborative bodies that had been formed by the main commercial interests to support the general trend towards open environments, whilst

minimising the impact of these technologies on their own manufacturing and marketing activities (Pratchett 1994).

Interviews with chief officers within the case study authority, and with the IT Department's management team, revealed a consensus of opinion that open systems, and its manifestation through the OSI seven layer framework and the Unix operating system (where this was understood), were seen (and remain) as being benign and beneficent technologies towards which all organisations should aspire (interviews with Chief Executive, 09-03-93; Leader of the Council, 17-03-93; Assistant Director of Housing, 24-03-93). This consensus embraced the belief that an open systems policy based upon these specific technologies would benefit the authority for three reasons: first, they would allow the authority to reduce its dependence on individual hardware or software suppliers, providing greater choice and flexibility for future ICT investments; second, they would enable a greater degree of systems and information exchange within the authority, leading to a more integrated and effective use of both ICTs and information; and third, there was also a commonly held belief, stated most strongly by the Chief Executive (interview, 09-03-93), that only by investing in these 'leading edge' technologies could the authority hope to protect its own interests against the threat of fragmentation from CCT, in line with the broader Council objective of 'defending local government' (Chief Executive's report to Strategy Sub-committee of Policy and Resources, 5 July 1990). It is ironic, therefore, that none of these three benefits have yet been achieved in any great measure by the case study authority. Indeed, there is the paradox that in order to reduce its dependence on individual vendors the authority has invested substantially and exclusively in the hardware products of ICL, thus reconfirming its dependence on that manufacturer, at least in the short-term.

More significantly, while the introduction of a diverse range of functional systems on distributed processing hardware has been a success, the Council's ability to provide anything more than a superficial level of integration must be questioned. By October 1993 the authority had implemented 11 separate Unix based systems providing specialised departmental functions (an increase of four since the publication of the IT Strategy review in 1991), but although the technical connections between these machines had been

achieved, the knowledge and vision necessary to provide any integration of systems was lacking. Consequently, the systems have remained functionally disparate and corporately fragmented, compounded by an organisational culture which now emphasises the departmental ownership of information, and militates against its open exchange with other departments. It is a further paradox, therefore, that departments that profess the need for an authority-wide open systems policy also jealously guard their own systems from open exchange.

There is also a further irony in the argument that open systems, far from protecting individual functions from external competition, actually make individual services more vulnerable to external companies who are prepared to use ICTs for competitive advantage. For example, where the client and contractor functions of a particular service have invested in open system technology to provide integrated information, the in-house contractor is increasingly vulnerable to competition from other companies who can use the open systems architecture to ensure that their own systems can also exchange information with the client system. Consequently, the technology can no longer be used as a subtle form of exclusion by local authorities.

The effect on the Council's hardware policy of the 1990/91 IT Strategy Review has been significant. In a very short period the Council's ICT policy moved from being concentrated around a stabilised mainframe environment with limited networking capacity, into a highly distributed system based upon a sophisticated network, with the mainframe featuring much less significantly. The uniting feature of each of these technological changes has been the importance that they attached to open systems. Open systems were at the heart of the technological transition instigated by the IT strategy review, achieving a consensus among all those affected, and leading to significant investments in hardware. The outcomes of this policy change, however, remain ambiguous. While the expenditure on open systems technology was significant, the success of these systems in delivering the professed open systems policy is questionable. In particular, there remains an absence of integration between fragmented systems despite a policy aimed at overcoming such problems. Consequently, it is necessary to explain the sudden and dramatic shift in ICT policy by reference to events outside of the immediate control of the authority, and

especially by reference to the wider interests of the local government ICT network, and individual actors within it. This analysis will be more feasible once policy changes in software have also been explored.

Policy outcomes: software

Being intrinsically bound up with the changes occurring to the hardware policy of the authority, the software development policy of the Council also changed significantly as part of the 1990/91 IT Strategy Review. It involved a move away from the internal development of systems by teams of analysts and programmers, towards the purchasing or adaptation of externally purchased systems. While reflecting broader changes occurring in other sectors of the economy, the shift to purchasing rather than in-house development had profound implications for both the IT Department and the authority as a whole.

As with changes to the hardware policy, this change in software development policy was covertly signalled in the official documentation of the review, rather than explicitly announced. An announcement that the IT Department intended to wind down its development activities would have brought consternation from a range of interests within the authority, including trades unions, and internal departments who had development arrangements with the IT Department. Instead, the strategy review announced the introduction of a standard process to be followed for all future software developments that would involve a detailed specification of system requirements, and a tendering process by which the internal software development team could bid to produce the software in competition with external companies. While not explicitly rejecting internal developments, therefore, it reduced their likelihood, because it was manifestly evident that in all but the most specialised developments the in-house team would be unable to compete with the economies of scale and multiple sales that most software houses could achieve. By introducing the software development/acquisition process on the back of the IT Strategy Review, therefore, the IT Department signalled its intention to change from software development to software purchasing and management. The remainder of this section will concentrate upon the reasons for, and consequences of, this policy change.

The reasons for the change in software development policy are four-fold. First, and most obviously, the rapid move away from traditional mainframe systems to Unix based distributed processing required the equally rapid implementation of functional systems to support these changes. The IT Department did not have adequate programmer skills in the appropriate languages (such as 'C', Informix, Oracle) to embark upon such an ambitious project. Although its agreement with ICL included significant amounts of training for various IT staff in Unix skills, this training was restricted to the broad level of operations and maintenance programming, rather than systems development. In addition, the extensive hardware investments that were occurring as a result of the open systems and down-sizing policies acted to increase the demand from user departments for functional systems. The only feasible alternative, if the open systems initiative was to be seized, was to purchase software from those companies who had acquired the necessary skills.

Second, there was growing user dissatisfaction with the length of time being taken for various major in-house software developments, and the limitations of those packages that had already been implemented. This problem was discussed extensively at the first meeting of the IT Liaison Group (09-03-91) and was also mentioned in interviews by the IT Director (17-06-91) and the Assistant Director, Development (07-06-91). It was also compounded by the extensive and continuous changes to legislation that were requiring resources to be concentrated into responsive programming rather than new developments. At the same time, however, the Council were left with the legacy of a number of important operational systems (such as Payroll, Financial Information, Debt Recovery), which could not easily be abandoned. The combined solution of moving some staff towards software acquisition, while retaining others to maintain existing systems provided a useful short-term solution to the problem of legacies, while allowing for more rapid development to stem rising dissatisfaction among user departments. In this context the shift in software development policy can be seen as a pragmatic and logical managerial response to internal organisational problems.

Third, interviews with the IT Departmental Management Team highlighted a growing awareness of the increased competitiveness of the commercial software market in the local

government area (interviews with IT Director, 24-05-91; Assistant Director, Support, 31-05-91). As well as the traditionally important local government software developers (notably ICL and McDonnell-Douglas), a large number of other software companies of varying sizes had become interested in the local government market, and had started producing packages in collaboration with local authorities, targeted at specific functions. The IT Director was of the opinion that major legislative changes, such as those aimed at extending CCT, had been particularly significant in creating the opportunities for the expansion of the local government software market, encouraging both large and small companies to target this sector (interview with IT Director, 22-02-91). The increasingly competitive nature of this market led to the conclusion that better quality software could be purchased cheaper than it could be developed in-house. Consequently, the Department's management team recognised the need to reposition its activities in order to take advantage of the market without losing control of the systems involved. By developing a standard process for purchasing systems the IT Department was successful in securing a dominant position in the changing environment of software development. In this context as well, the policy shift can be seen as being a logical managerial response to a situation which threatened the Department's domain.

Finally, and following from this response to the threat upon the domain of the IT Department, the shift in software policy from internal development to purchasing and implementation, can be seen within the context of the Department repositioning itself within the local government ICT network. It is evident that there was increasing consensus within the ICT network generally, and within the local government ICT network in particular, that purchasing software was more efficient than developing it in-house (Audit Commission 1990, para 75-76; SOCITM 1990). This created a major dilemma for the IT Department, which had derived its central position and power within the network on the strength of its software development and operations skills. A withdrawal from software development would have had the potential to radically alter the power relations within the ICT network, effectively marginalising the IT Department. The policy emerging from the IT Strategy Review, therefore, was not simply the rational response of the management team to commercial pressures, but was also an attempt by the management team to protect the status of the Department, and to reposition it within

the network. By developing standards which enhanced the activities of its own staff in the software acquisition process the IT Department was successful in defining a new role for itself that ensured its continued presence at the heart of the network. In particular, it ensured that the IT Department would continue to act as the intermediary between external suppliers and internal departments, and that overall software policy would continue to be dominated by IT staff. Consequently, the outcome of this policy was not merely a change in emphasis between in-house and externally developed software, but was also a strengthening of the IT Department's position, giving it a renewed central role within the network. The argument here is that this is the principal reason for the major shift in software policy that emerged from the IT Strategy Review.

Conclusions

The analysis of policy outcomes has concentrated upon the IT Strategy process, and especially the 1990/91 IT Strategy Review, because it provides both evidence of the formal ICT strategy of the Council, and a useful framework of changes with which to compare the actual policy outcomes that have emerged. The concentration on policy outcomes highlights three main changes in ICT policy. First, there was a shift in hardware policy from the traditional emphasis on ever-expanding mainframe systems to a new focus on 'down-sizing', employing distributed mini-computers based around specific departmental functions. Second, there was a sudden emphasis on open systems, with the new departmental mini-computers all adopting Unix as their operating system, and the network architecture conforming to OSI standards. Third, there was a shift in application software development policy, away from the traditional approach of developing software in-house to meet customised demand, and towards the structured acquisition of standard software which could be adapted to meet user needs. Despite being signalled to the Council as representing a logical and incremental policy of ICT progression, in practice these initiatives represented a radical change in the ICT policy of the Council.

These policy outcomes are important not only because of the short-term change in technological trends that they emphasise, but also because of the longer-term and more

systemic effect they are having upon the broader process of change occurring in local government. This concluding section is concerned with the full range of issues that the identified policy outcomes and their associated changes imply. It concentrates upon three principal issues raised by the outcomes.

The extent and nature of change identified in the policy outcomes highlights the increasing sophistication of ICT applications in the case study authority. The process of creating a distributed architecture based around a complex network of mini-computers demanded a much more elaborate range of mechanisms for maintaining both the physical technology and its supporting systems than that associated with conventional mainframe computing. This down-sizing process led to a fragmentation of system and operational responsibility across different groups of users. It also demanded that both the IT Department and the consumers of its services acquired new skills and new ways of working. This combined with the shifting emphasis away from in-house software development and towards packaged systems to create a climate of extensive and complex ICT change in the authority. Within a short period of time every department in the authority was faced with fundamental changes to both the physical equipment that they used to perform their functions and the underlying systems employed. On the one hand this dynamic process of technological change shows the Council to have been responding effectively to the opportunities that new ICTs presented, especially in the context of rapidly changing legislation that required authorities to take on new functions and to radically alter the ways in which old functions were performed. In this respect technological change was an inevitable and healthy consequence of the broader technological and political environment of local government. On the other hand the rate and extent of change also had the effect of creating a bewildering and confusing climate in which strategic choices for individual functions were articulated almost exclusively in terms of the technology being implemented. Operational systems were reorganised to take account of the new technology. The overall effect of the changes inherent in the policy outcomes was an increasing level of technological sophistication and complexity which further distanced users from control over their own operational systems and made them more dependent upon ICT experts. In particular, the Council became increasingly dependent upon a limited number of external organisations for ICT support: namely, ICL as the main

hardware supplier, and a small number of software vendors and consultancies for systems training and support. In short, the local government ICT policy network gained a considerable degree of influence by supporting a process of technological sophistication across a range of applications.

There is also a question over the extent to which the pace of change, and the increasing organisational dependency on a limited number of core network actors, was unique to that authority. The evidence shows that far from being unique, the Council was part of a national trend in its choice and application of particular ICTs. For example, in 1988 distributed computing was of little interest to the SOCITM annual survey of IT trends, and a question on the broader issue of open systems interconnection (OSI) found only 19 per cent of authorities claiming to have implemented any systems in support of such ambitions (SOCITM 1988). By 1990, however, 60 per cent of authorities had implemented unix based systems (SOCITM 1990) - the most ostensible (though not necessarily exclusive) sign of a commitment to OSI. By 1993 this figure had risen to 85 per cent of authorities (1993). Consequently, the move towards distributed computing through a process of 'down-sizing' based especially on unix platforms, was clearly a national trend in local government, and indeed in other sectors of the economy (see for example Price Waterhouse 1991), and was in no way unique to the case study authority.

The national trends for software development are also mirrored by the Council's experiences. Thus, SOCITM (1990) illustrate a general trend between 1984 and 1994 in which in-house development of applications software declined from 60 per cent to 41 per cent of all systems, while the adoption of externally developed packages increased from 33 per cent to 50 per cent. As with the case study authority the national trend in software development was away from in-house products and towards the implementation of packaged solutions to the immediate problems confronting local authorities. The significance of the similarity between national ICT trends and those experienced by the case study authority is not simply that change was widespread. Rather, it is that the policy outcomes and their subsequent consequences have been experienced throughout local government. Thus, local authorities have all experienced a degree of technological sophistication and complexity as they have moved towards distributed systems of

computing. More importantly, they have all become increasingly dependent upon a limited number of core network actors for technical advice and support to maintain and develop ICT applications. The principal conclusion from the policy outcomes, therefore, is that the ICT policy network remains an important influence over ICT policy, and indeed, continues to increase its dominance in local government.

A further issue arising from the policy outcomes concerns the distinctive values and approach which the continued dominance of the ICT policy network had on ICT investments and their application in local government. The argument here is that the limited number of core actors and their interdependencies provided for a closely shared set of values across the network. Although each actor may have contributed different resources to the network, have had different reasons for participating in it, and expected to gain different advantages from it, they nonetheless operated with a shared appreciative system. This shared appreciative system was developed through the continuous interactions and resource exchanges that lie at the heart of the network and which were analysed in chapter 7. It ensured that all actors held a common world view on what the main issues were and the ways in which they should be addressed. It was articulated in the form of a consensus on both the technologies adopted and their application in particular contexts. Thus, it included a preference for down-sizing, an emphasis on unix applications, and an increasing focus upon externally developed software solutions. Moreover, it included a consensus that the application of these particular technologies was the best solution to the broad range of structural, organisational, financial, functional and managerial changes which were being experienced by local authorities. The point here is that the convergence of local authorities on a particular set of technologies, and their application to specific functions to fulfil common purposes, was not inevitable. Despite facing a common set of challenges and opportunities each authority nevertheless had its own distinctive problems and advantages which made it different from all others. Indeed, as Stanyer (1976) argues, every authority is a mini-political system in its own right. Without the powerful and enduring influence of the ICT policy network it would have been expected that different authorities would employ different technologies, or would arrive at the same technological solutions at different times. Even where the same technology was deployed it would be expected that different authorities would find

different applications for it or develop its organisation in different ways. This has not been the case. New ICT investments and applications show a considerable degree of consistency across local government. The case study provides a broad reflection of the key values and policies of the ICT network, and its consequent policy outcomes.

At one level the implications of these three issues are manifest. They imply a narrow definition of the problems and opportunities faced by local government which have emerged from within the complex application of new ICTs in a climate of extensive and relentless change. At the same time they also imply an equally narrow technological response in which one form of ICT and one method of organising and applying it, is conceived as being the only appropriate solution for local authorities. In short they imply a single shared mind set that was unable to look beyond the immediate difficulties confronting local government, and unable to conceive alternative ICT applications for local authorities. Consequently, they imply a limited and impoverished set of ICT applications for local government which have missed many of the alternative technologies and applications that local authorities might have explored to better effect. At a broader level, however, these issues have more profound and systemic implications for local government. They imply not only that local authorities have missed, and continue to miss, many technological opportunities, but also that local government is becoming inadvertently constrained by its ICT applications into an exclusive focus on service functions which is ultimately destructive to its role in the UK polity. It is these more systemic implications for the future of local government that the concluding chapter addresses.

**CONCLUSIONS:
ICT POLICY MAKING AND
THE FUTURE OF LOCAL GOVERNMENT**

Introduction

This final chapter draws together the theoretical and empirical analyses conducted in earlier chapters in order to reach conclusions on the significance of the ICT policy network and its influence on the long term agenda for local government in Britain. It argues that the ICT policy network is inadvertently, but nonetheless effectively, shaping the broader agenda of change in local government by concentrating ICTs around aspects of service delivery to the virtual exclusion of the equally important democratic and public policy making roles of local authorities. In the long run an over-emphasis on the service delivery role for local government could undermine the legitimacy and importance of this institution within the British polity and lead to its gradual demise within the emerging patterns of local governance. The processes through which ICT policy emerges, therefore, are of profound importance not only for the relatively narrow perspective of technological developments, but also for the broader institutions of local government.

This chapter concentrates on three sets of conclusions. First, there are those about the ICT policy making process in local government and the principal influences on this process. Second, there is a set of conclusions about the importance of ICTs, and ICT policies, to the ongoing process of change and reform occurring in local government. This is closely linked to the analysis of technological trends and to the underlying values which are implicit in the adoption of some technologies. Finally, there are conclusions about the implications of contemporary ICT policies and investments for the long term future of local government. While all these conclusions are important, this third set is most significant because it emphasises the fundamental importance of contemporary ICT

policy processes for the long term evolution of British government. This chapter deals with each of these three sets of conclusions in turn.

ICT policy processes in local government: influences and trends

This first set of conclusions concerns the specific way in which ICT policies are developed in local government, the principal influences on them, and the key technological trends that emerge from this process. Earlier chapters concentrated upon the role of the ICT policy network in developing and constraining ICT policy change in local government. But there is a danger of over-emphasising the importance of the ICT policy network to the extent that other important influences on ICT policy are ignored or marginalised. It is also necessary to analyse the broader influences on local authority ICT policies within the context of the more direct influence of the ICT network. Such an analysis highlights not only the relative importance of various influences on ICT policy but also the relationship of the ICT network to these influences and its role in mediating and manipulating such influences.

There are a broad range of social, economic and political factors which are shaping and influencing the ICT policy process in local government. For example, new employment practices and working patterns, changing social patterns of behaviour and dependencies, emerging political priorities and ideologies, and changing cultural aspirations and expectations, are all making differing but important demands upon the existing institutions of government. This, in turn, generates pressure for the innovative application of ICTs in particular areas, and helps shape ICT policies in particular organisations. Within this broad range of factors, however, two specific influences are especially pertinent to the analysis of local government ICT policy making: central government instruments for change, such as legislation and statutory instruments; and the process of technological innovation occurring across various other sectors of the economy. By concentrating upon each of these in turn it will be possible to reach conclusions on the importance of the ICT policy network in mediating these influences, and on the technological trends that local government is likely to pursue in the immediate future.

Central government instruments for change

Central government has an array of mechanisms at its disposal for effecting change in local government, most notably legislation, statutory instruments, circulars and other such tools. In the recent history of central-local relations these instruments were frequently used to control and inhibit the activities of local government, but more recently, to radically restructure its functions and responsibilities (*cf.* Gray 1993, Stewart and Stoker 1995, Wilson and Game 1998 *inter alia*). In the context of the ICT policy network and its effect on local government policy outcomes, however, there are three important conclusions.

First, the extensive and pervasive legislative programme that local government has been subjected to almost continuously since the Local Government Planning and Land Act 1980 has provoked an emergent strategic philosophy within local authorities. The legislation has both forced local authorities to adopt strategic positions in relation to enabling and local governance, and generated new opportunities for authorities to assess and develop strategic ambitions that reach beyond the confines of their immediate functional responsibilities (Leach *et al* 1994, Collinge and Leach 1995). Consequently, a clearer diversity of strategic options and opportunities is emerging as part of the move towards different forms of enabling (LGMB 1993), although the extent to which individual authorities are consciously adopting one strategy in preference to another is at times questionable. The key issue to emerge here is the extent to which it is possible to identify a clear move towards more strategic planning by authorities either as a deliberate response to the legislation or in some instances, in spite of it. The different models of decentralised, community-oriented or residual forms of local government which different authorities are actively pursuing implies that there has been both a deliberate response to the legislation, and an attempt to achieve very different visions for local communities despite the apparent conformity that the legislation may have imposed on authorities across the country. More significantly, the move towards more strategic planning by local authorities leads to an assumption that ICT policies are developed to support and enhance strategic visions, rather than to dominate them as has been the argument so far. But the danger is that far from supporting or underpinning a variety of strategic visions, ICT

investments and the actions of the ICT policy network are effectively constraining and preventing local authorities from realising their strategic ambitions, and sometimes even pushing strategy in a different direction.

Second, the rapid and far-reaching organisational and operational changes demanded by centrally imposed reform has had the effect of monopolising organisational resources, especially those associated with ICTs. Throughout the late 80s and early 90s IT managers in local government continuously reported through SOCITM that legislation was the most important factor guiding their development policies. For example, SOCITM (1988) cites legislation affecting community charge, competitive tendering, education and housing as being the four most important influences on ICT policies that year. Six years on SOCITM (1994) cites compulsory competitive tendering (this time of the IT function itself) and local government review as being the most resource consuming factors affecting IT departments - all of which were directly driven by legislative changes. Central government changes, therefore, have diverted ICT resources away from the 'real business' of IT departments (SOCITM 1994) and concentrated their policies upon the narrow requirements of specific functional and operational changes. This has been compounded by the very tight deadlines required by much of the legislation. For example, the failure of the community charge after just one year (for political as much as operational issues) led to first a treasury refund of £140 to each tax payer in the 1991 budget and then the hurried development of a new property based tax to replace it (Sanderson 1995). As Travers (1995) effectively demonstrates, local government was involved in administering and collecting three taxes within 1100 days. This inevitably had a significant effect upon both the physical ICT resources required to process these taxes (especially during the several years that the taxes ran concurrently to collect debts from previous years) and the staffing abilities of local authorities. Indeed, as the case study showed, the financial implications of the various legislative changes, besides those of the community charge and council tax, have dominated the ICT requirements of local authorities in recent years. The main effect of the legislation in this respect has been, on the one hand, to provide a focus for ICT investments around the reformed operational functions of local authorities, but on the other hand, to reduce the opportunity and scope for innovative ICT developments in the other functions of local government. Consequently, while legislation has encouraged

local authorities to adopt a more strategic approach to their functions and responsibilities, it has also narrowed the potential for individual authorities to pursue alternative strategies because their prime organisational resources, and especially ICTs, have been tied up in supporting centrally imposed change.

Finally, it is important to acknowledge the incidental effect which the extent and pace of change has had upon particular actors within the ICT network. The breadth and depth of different legislative measures affecting local government has meant that authorities have often lacked the organisational or technological resources to implement appropriate systems on their own. As a result they have become increasingly dependent upon the systems developed by external suppliers. As the case study showed, this dependence on external suppliers has increasingly been limited to a few key actors who are able to demonstrate a specialised knowledge of the field, and are able to forge relationships with the authorities that extend beyond what might be considered to be a standard commercial one. Because they are able to achieve economies of scale by marketing systems to a large number of authorities these actors are not only able to increase their dominance by undercutting the costs of individual authorities in developing particular systems, but are also able to claim a special role in mediating between the civil servants who are drafting legislation and individual authorities. For example, in the drafting of the Council Tax legislation ICL development staff were involved in advising civil servants what was technically feasible in the timescale and what was not (interview with ICL marketing consultant, 10-05-93). In short, the extent and variety of legislation has strengthened the position of the ICT network by encouraging closer relations between actors while at the same time making local authorities more dependent upon the resources which it controls.

Technological innovation

The general implications of technological change in relation to broad social, political and economic trends, and especially the emergent paradigm of informatization in public administration, were analysed in some detail in chapter 2. The significance of technological innovation for local government, however, is particularly apparent because

of the effect which the general process of technological innovation is having upon the relationship between local government and other aspects of the polity and economy. Technological innovations are seen by many as radically altering social, political and economic relations across the world, creating among other things new 'virtual communities' which replace existing territorial ones based on local communities. While much of this can be dismissed as utopian or dystopian speculation it is nonetheless the case that these new technologies are having profound effects upon extant institutions and organisations of the state and their relations with others. For local government the ongoing process of technological innovation has the potential to call into question the fundamental role and purpose of elected local authorities in emerging social, political and economic relations. For example, it questions the role of local democracy in an increasingly international polity. Similarly, the need for local knowledge that local authorities were uniquely equipped to deliver is becoming less relevant in a centralised political climate that emphasises uniformity over diversity and national standards over local responsiveness. At a broad level, therefore, technological innovation has the potential to challenge the roles and relationships of contemporary political institutions such as local government.

More directly, however, technological innovation has important effects upon the immediate ICT policies of local government. The case study emphasised the importance of open systems technologies in local government and their influence upon the case study authority. It showed that the implementation of an open systems architecture reflected more an acknowledgement of contemporary technological trends and pressures than any strategic positioning by the authority. Similar arguments can be made for other ICT innovations such as relational databases, data-warehousing and other technologies that enable authorities to store and manipulate information. Local authorities are often involved as much in following technological trends as they are in realising true advantages from their ICT investments. In following these trends, however, authorities are not only subscribing to particular technological fashions. As chapter 2 argued, every technological choice carries with it inevitable organisational and political consequences. This is not necessarily an argument for technological determinism, but it is a realistic acknowledgement that in choosing and implementing particular technologies organisations

also change structures and processes, leading to different information flows and different aggregations and balances of power across and between organisations. In the long run they also create technological and institutional legacies which must be accommodated in any future changes or reorganisations. The technologies that local authorities are choosing, and similarly, those that they are rejecting or ignoring, therefore, become of great importance not only because of the financial and organisational resources which they consume in their implementation, but also because they have long term and often irreversible effects upon the structure and processes of the organisation.

The important issue here, however, is which factors determine preferences for particular technologies and which factors lead to the widespread adoption of some innovations and the rejection of others. The simple response to this is that some technological innovations are more suited to the 'business' of local authorities than others and provide more appropriate solutions to the immediate problems which they confront. But this simple response ignores the sophisticated process of policy making which local authorities are engaged in and the influence of different professional and commercial groups over policy decisions. In particular, it ignores the systemic values and influence of the ICT policy network which provides the underlying basis for most ICT decisions in local government.

Conclusions on the ICT policy process and the ICT policy network

The principal conclusion that emerges from this analysis is that the ICT policy network does not exist in isolation from broader socio-economic or political factors and, therefore, does not have autonomous power to determine ICT policies in individual local authorities. Rather, it shapes ICT policy in response to a range of broader influences. Most significantly, centrally imposed changes have focused ICT policies almost exclusively around coping with the organisational and functional changes demanded by central government, and have led to an increasing dependence among authorities upon a limited number of private sector actors. These actors are the only ones who can supply the requisite technologies within the very tight timescales imposed by the centre.

In this respect, the role of the ICT network is not to determine ICT policy, but to mediate between internally and externally generated demands for organisational and institutional reform on the one hand, and technological innovations on the other: that is, the role is one of matching new technologies to the changing organisational and functional demands of local government. But this assumes that the disparate set of actors who comprise the ICT network have both the competence and the motivation to achieve this coupling. The processes, values and interdependencies analysed in the case study suggest that such concerns are not the primary focus of the ICT network. Indeed, there is an absence of coherence between on the one hand the development of legislation affecting local government, and on the other hand, technological innovation and the process of selecting or rejecting particular innovations which accompanies it. The most simple but effective illustration of this has been the review of local government structure in England conducted by the Local Government Commission. During the process of negotiating specific structural changes Sir John Banham, the first chair of the Commission, highlighted his ambition to take account of the opportunities offered by new ICTs in deciding new structures for each area. The Commission's final recommendations in each area, however, ignore the potential structures that new technologies may have facilitated, and owe more to the specific success or failure of the campaigns conducted by individual authorities than any overarching strategy on the part of the Commission (Wilson 1996). Similar arguments can be made for the changes that have occurred in the arrangements for care in the community, which have placed much greater emphasis on inter-agency cooperation but without reference to the potential or actual role of new technologies in the coordination or development of such co-operation. The consequence has been an *ad hoc* and uncoordinated response across the various organisations affected which has led to a number of highly publicised, and sometimes fatal, failures in service provision.

Indeed, despite the publication of a number of government reports on the potential role of ICTs in the development and delivery of public services (for example, CCTA 1994, Office of Public Service 1996) there appears to be very little attempt to consider their potential application in the development of new legislation. Although ICT companies such as ICL have been involved in advising on legislation this has been at the point at which detailed specification was being developed. There is no evidence that ICT

considerations are entered into in the gestative periods of legislation, and ICT professionals are involved only to advise on how to deliver legislative changes, rather than to assist in developing legislation which will seize the new opportunities offered by ICT innovations. The implications of this for ICT policy making in local government are substantial. In the absence of a coherent and coordinated relationship between new legislation and technological innovation, there exists great scope for the relationship between them to be interpreted and mediated by the ICT policy network. Thus the ICT network is able to select those technologies which best suit the values and ambitions of its actors, rather than those which would necessarily be most appropriate to deliver the objectives of the new legislation. In the short-term this may involve some detailed negotiation and compromise both within the policy network, and between network actors and those responsible for developing or implementing the legislation. In the long run this may mean that the very systems developed to support new legislation are incapable of fully meeting the broader objectives of the legislators and become a major contributory factor to the goal displacement which is widely acknowledged to have afflicted much of the Conservative government's legislation directed at local authorities in the 1980s and early 1990s (Laughlin 1996).

The development of ICT policies is not an isolated process which occurs within a narrow group of actors. Rather, ICT policies emerge from a complex interaction between broad social, economic and political changes and the immediate preferences of the ICT network. Consequently the ICT policy network is important not because it determines ICT policies, but because it mediates externally generated change and innovation, and shapes it according to the extant values and preferences of its own members. In this respect the internal ICT policy process is indifferent to the broad political and socio-economic objectives of local government while only superficially addressing immediate operational and managerial demands. Policies which emerge from this process, therefore, reflect the specific interests of the ICT policy network rather than the broader interests of local government.

ICT policies and local government reform

This second set of conclusions concerns the importance of ICTs, and ICT policies, to the ongoing process of change and reform occurring in local government. The ICT policy network shows not only a shared focus on the same policy area, but also a more deep-rooted consensus on the role and purpose of ICTs in organisations which amounts to a shared set of values and perceptions. Thus, the interdependent relationship between various network actors and the continuous bargaining and exchange of resources analysed in chapter 7 does not simply demonstrate a general interest in the policy area of ICTs. Rather, the interactions and exchanges which are the most manifest feature of the empirical analysis conducted earlier both reflect a shared appreciative system and continuously reinforce and amplify the values of this system across the various actors. The close relations between core actors and their relative isolation from influence or interference by other actors outside of the network leads to a commonly held set of values across the network. These include: a common acceptance of the role of ICTs in organisations, concentrated around the enhancement of efficient service delivery and the provision of management information to support it; agreed ways of organising the ICT function which concentrates ICT resources, or at least control of those resources, in a centralised ICT department; agreed standards on the value of particular technologies and their application in specific organisational contexts; and an agreed emphasis on performance measurement and financial return on ICT investments which focuses organisational attention upon proving efficiency savings from the implementation of systems. These shared values and perceptions in turn lead to an undue emphasis on service delivery as the primary, and in some instances the only role, for ICTs in local government. The shared appreciative system of the ICT network gives so much emphasis to implementing ICTs in support of the service delivery functions of local authorities that other potential applications are overlooked. More than this, many potential applications which might support the democratic or public policy making roles of local government are ignored or avoided because they do not fit within the dominant values of the ICT network. This is not a deliberate attempt on behalf of individual actors to subvert ICT policies in local authorities. Rather, it is a collective and systemic bias in favour of the service delivery applications that are easily understood and accepted within the

appreciative systems of the network actors, and away from the other potential systems which do not easily fit within those values or perceptions.

This set of values and perceptions, shared across the ICT policy network, provides an interpretive framework through which the distinctly different demands of new legislation and technological innovation are evaluated, mediated and matched. Thus, the appreciative system which emerges from the ICT policy network forms a policy filter. This is not to argue that the ICT policy network is able to autonomously select which technologies are used to implement which pieces of legislation. But it is to argue that, in the absence of any deliberate or coherent attempt to develop a relationship between legislative and technologically driven changes, the ICT policy network is well placed to fill the policy vacuum that exists. In the absence of any other influences to direct the relationship between these two disconnected forces for change, the values and preferences of the ICT policy network are dominant. This leads to a set of ICT policies and outcomes which are clearly distinguished from the strategic choices and policies being developed at a corporate level by individual authorities. Although the ICT policies and strategic choices have an inevitable impact upon one another their potentially divergent nature means that there is as much scope for tension between them as there is harmony. The ICT policy network, therefore, interprets and mediates legislative and technological changes in ways which conform to the collective values and perceptions of its actors, rather than in ways which necessarily reflect the strategic demands of individual authorities.

It is important to consider the extent to which the values and perceptions of the ICT network are in conflict with those of other groups within local government, or lead to policy outcomes that are incompatible with the strategic choices being pursued by individual local authorities. In arguing that the appreciative system of the ICT policy network predominates in creating a policy filter to interpret and mediate between legislative and technological changes, the key inference is not that the underlying values are necessarily opposed to, or challenged by, other extant values in local government. But it does not automatically follow that the biases of the ICT network will always be consistent with either the strategic ambitions of individual authorities or the broader role and purpose of local government. The values of the ICT network are only partially

consistent with the broader interests of local government. Their dominance in mediating change, however, means that the systemic values and biases of the ICT policy network are inadvertently capturing not only the ICT agenda in local government, but also the broader agenda of change. In selecting particular technologies to support and implement changes the ICT policy network is helping both to establish the direction of change and to constrain the options for future change. The implications of this are that the ICT policy network is leading individual authorities in directions which they would not rationally choose. Furthermore, the technological and organisational legacies that they are creating are reducing the opportunities for authorities to change direction in the future. Consequently, not only does the ICT policy network provide a deep-rooted set of values and preferences which dominate the agenda of change in individual authorities: this dominance also has profound but largely ignored consequences for the future of local government as a whole.

The link between contemporary change processes and the ICT policy agenda is multi-faceted. There is an important link between the underlying values of the ICT policy network, the technologies which it supports, and the ways in which changes are implemented in local government. There is also an important link between contemporary changes and technological legacies in local authorities. The shortcomings of existing technologies are sometimes the reason that particular organisational reforms are effected - more often, however, the technological legacy is one that determines which information processes and flows are most important, and hence, which technological applications are most appropriate in individual organisations. Existing technologies, therefore, can have important influences on the broader reform process in local government.

When the limitations and biases of new ICTs are added to the structural legacies of existing technologies their effect in shaping the nature and direction of change can be substantial. Observable trends in the technological investments of local government, therefore, are important not only within the context of the ICT policy network, but also for the broader evolution of local government. The case study identified three significant trends in ICT policy: a trend towards down-sizing and distributed processing which emphasised an increasing technological sophistication in ICT provision in local

government; a move towards open systems with particular emphasis upon Unix platforms as the primary architecture for departmental systems; and an increasing dependence upon external software producers for the development of application software to support the main functions of local authorities. All of these were identified as being a direct consequence of the influence of the ICT network on ICT policies in local government. Equally significantly, however, all of these point to particular technological futures which the ICT network is mediating and influencing.

The emphasis upon down-sizing, distributed processing and open systems is leading to an increasingly disaggregated and fragmented ICT architecture in local authorities. This is not a direct product of the technologies being implemented. Indeed, open systems and other technologies that facilitate distributed processing are, in principle, better able to deliver coherent links between disparate functional systems than the traditional computing technologies employed in local government which depended more upon proprietary systems that could not always communicate with one another. But the important aspect here is that the political processes through which these new technologies are being filtered are militating against such cohesiveness. Thus, the implementation of open systems in individual departments provides both the catalyst and the tool for achieving greater departmental autonomy. To this extent, these technologies are a force for greater fragmentation and disaggregation of local government, rather than unification. But it is the political and organisational context within which open systems, and other technologies that support distributed processing, are being implemented that are leading to their use as a force for fragmentation. It is not that technological innovation is leading to fragmentation of functions within local government *per se*. Rather, it is that the ICT policy network is supporting and encouraging the adoption of these technologies, oblivious to both the context in which they are implementing them, and their long term implications for the organisations of local government. Most significantly, the ICT policy network does not appear to accept any responsibility for providing the integrative forces necessary for overcoming fragmentation, preferring to place the onus for this on the corporate organisations of local government.

Linked to this process of fragmentation, local authorities are becoming increasingly dependent upon external software suppliers for applications software. This dependence not only makes authorities subject to the vagaries of the market place and the obvious limitations that software producers can impose on individual authorities once they have locked them into their products through a process of creating technological legacies. More importantly, it also makes authorities dependent upon the systems that they produce. Authorities have to conform with the structures and processes which the software demands, rather than developing their own structures and processes in response to local demands. Consequently, authorities have to place considerable trust in external developers to provide satisfactory structures and processes. Given that these considerations are not central issues for software developers, there is a danger that authorities will find themselves increasingly operating systems and processes which do not match their own strategic or operational needs. A dependence on external software developers is also likely to lead to the loss of internal systems skills from within the authority. This was particularly evident in the case study where the move towards open systems and unix based packages had meant that many of the existing ICT skills within the authority became obsolete overnight. The long term implications of this erosion of internal skills is significant. As well as creating a vicious circle of dependence in which each technological advance is likely to further remove internal skills, it also calls into question the long term ability of authorities to develop effective ICT policies. In other words, the more dependent local authorities become on external software developers the fewer ICT skills they will retain in-house. Once internal skills have been lost authorities will be even less capable of developing and directing their own ICT policies and will become even more dependent upon external suppliers for such direction. Furthermore, they may become even more distanced, if not wholly excluded from, the very policy network which is tacitly framing much of their organisational and institutional future.

While it is impossible to speculate on the types of technologies that are emerging in local government two clear trends are identifiable that are likely to continue: a process of increasing fragmentation and disaggregation which is not being countered by a similar process of technological and political integration at a corporate level; and an increasing dependence on external software suppliers which is having the long-term effect of

deskilling local government and reducing its capacity to take charge of its own ICT policy making. This second set of conclusions, therefore, suggest that the ICT policy network not only raises long term issues for the reform of local government, but that the policies emerging from it also pose more immediate threats for its existing organisations.

ICTs and the future role and purpose of local government

So far this chapter has emphasised the importance of the ICT policy network in mediating and shaping the external pressures for change, and the significance of this policy process for the broader process of change in local government. This final section is concerned with the longer term implications of ICTs for the organisations and institutions of local government in relation to its emerging role and purpose: implications which threaten the very foundations of local government in the British polity.

The concluding argument is a simple but important one: ICT policies and investments only support one of the three roles of local government - that of service delivery. Of the three roles identified for local government service delivery is the one that is most challenged by the emergence of single-purpose agencies in the new structures of local governance. As the only institution beneath Parliament that is currently subject to direct universal election, local government can claim a unique role as the catalyst for democracy and as the focus for public policy making at the local level. But as the provider of services it is less well placed than many other agencies which are better structured to deliver particular services and less constrained by the need to balance conflicting political and democratic priorities. In emerging patterns of local governance local authorities need to concentrate fewer of their resources and efforts on this aspect of their activities, and concentrate more upon their democratic foundations and public policy making roles. But the underlying values and technologies of the ICT policy network are concentrated around the tangible and quantifiable aspects of service delivery and management and are unable to support innovations which might be targeted at the more abstruse and intangible values of democracy or public policy making. The ICT policy network, and the policies that emerge from it, therefore, support and entrench a focus upon service delivery that may in

the long run lead to the demise of elected local government. If local authorities are unable to give greater emphasis to their democratic and public policy making roles - and the innovative application of ICTs is an essential means of engendering such roles - then they cannot claim any separate legitimacy for their existence. But to achieve this authorities must first overcome the systemic bias of the ICT policy network and its exclusive focus upon the application of ICTs for service delivery and management.

Public administration has tended to marginalise the study of ICTs in government, treating it as a largely technical and peripheral subject which does not have any great consequence for the real issues and challenges facing modern bureaucracies. In analysing the political processes that surround ICT policy making in local government this thesis has directly confronted this complacency. It is not simply that the ICT policy making process is inherently political in nature, although the application of the policy network concept to this area has effectively illustrated that this is the case. More than this, it is that the policy outcomes of the political processes that occur within and around the ICT network have profound and enduring effects on the wider organisation and structure of politics in local governance. The process of technological innovation and its subsequent implementation is intrinsically and irrevocably intertwined with extant political processes. Likewise, shifts in the aggregation of power or influence and the changes in political processes that accompany them, are intertwined with the continuous process of technological innovation that is affecting all organisations. The nature of the relationship between politics and technology was analysed in detail in chapter 2. This chapter argued that the dynamic relationship between political processes and technological innovation has profound effects upon all aspects of social, political and economic life. These effects range from the impact of new technologies on the individual, for example, in changing patterns and practices of employment, through to the broad social, political and economic consequences of informatization and the shifting patterns of inter-organisational relations that they engender. Thus it argued that, in the absence of an overarching vision with which to guide socio-economic and political change, the complex and dynamic relationship between politics and technology will lead to an incoherent, confused and ambiguous set of changes which may well have unforeseen but extensive social, political and economic implications. This indicates that it is necessary to look beyond the

immediate technological changes occurring in local government, in order to understand and analyse the more profound effects that technological changes are having upon the structure and organisation of local authorities, and upon the long term role and purpose of local government.

As chapter 4 demonstrated, there is little consensus over the proper role and purpose of local government in the modern polity. Indeed, it is evident that such a consensus has never existed, although the recent interest in new patterns and structures of local governance has challenged established interests in local government and placed renewed emphasis upon underlying tensions. These have highlighted the on-going ambiguity and uncertainty which surround the role and purpose of local government. In structuring and dominating ICT policy in local government, the ICT policy network is filling this policy vacuum and is providing tacit but effective direction to the reform process. While this influence may well be inadvertent and undeliberate it nonetheless provides an underlying structure and direction to the otherwise incoherent and confused range of changes that are affecting local government. This direction may not be in the long term interests of either local government as a whole, or individual groups within it.

The final and most important conclusion from the theoretical and empirical analysis undertaken by this thesis is that the direction of change which the politics of ICT policy making supports and engenders in local government militates against the long term interests of the very institutions and organisations which policy makers are seeking to improve. The policies of the ICT policy network are inadvertently but nonetheless effectively undermining the value of local government in the modern polity. In the long term, therefore, the political processes that surround ICT policy making may be responsible for the eventual demise of local government.

APPENDIX 1

SAMPLE INTERACTION ANALYSIS FORM

At the beginning of each week participants were issued with three copies of this form on different coloured paper:

- Green - Meetings
- Blue - Written Correspondence
- Pink - Telephone Conversations

IT MANAGEMENT TEAM - ANALYSIS OF INTERACTIONS

TYPE OF INTERACTION NAME WEEK ENDING.....

Internal Dept	Elected Member		Other Local Authority		Central Government		Professional Body		User Group		Software Supplier		Hardware Supplier		FM & Consultancy		Other		
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	

APPENDIX 2

GUIDELINES TO STUDY PARTICIPANTS

A copy of these guidelines was issued to all study participants at the start of the interaction analysis.

IT MANAGEMENT TEAM
NETWORK ANALYSIS

GUIDELINES

The four members of the IT Management Team have all agreed to participate in the 'Analysis of Interactions'. The following notes provide guidance on the completion of the interaction forms:

1. The analysis is divided between written, telephone and face to face interactions:

Written Interactions	-	blue forms
Telephone Interactions	-	pink forms
Face to Face Interactions	-	green forms

2. Each form consists of 10 categories into which the local government IT policy network can be classified. (See attached 'Definition of Categories' for details of the classifications). Each category is further divided between incoming and outgoing interactions, defined as being:
 - In - Those interactions in which the participant officer is the principal recipient of information.
 - Out - Those interactions which are initiated by the participant officer.

3. Each participant will be issued with a copy of the forms on a weekly basis. (NB. A separate form will be issued for each type of interaction, as at 1 above). The participants are requested to complete the forms as events occur, by placing a single tick or other mark in the appropriate category.

4. The forms will be collected and analysed on a weekly basis, and replacement forms issued.

5. The weekly analysis will be complemented by a brief interview with each participating officer, in which the participant will be asked to identify the salient features of the past weeks interactions, and to make any other comments which are considered to be relevant to the analysis. Notes of these interviews will be written up and agreed by the participating officer before being filed with the case study data.

Lawrence Pratchett
4th February 1991

IT MANAGEMENT TEAM
NETWORK ANALYSIS

DEFINITION OF CATEGORIES

- Internal Dept** - All other Council departments, including Direct Service Organisations etc. This category specifically excludes interactions which remain entirely within the IT department, or those with elected members of the Council.
- Elected Member** - Any interaction with an elected member of the Council.
- Other Local Authority** - Other local authorities within the United Kingdom, including the Shire Districts, Shire Counties and Metropolitan Districts. This category also includes the residual bodies of the Metropolitan Counties.
- Central Government** - Members of Parliament, Central Government Departments (eg Dept of the Environment), CCTA and other government agencies (eg NHS). This category also includes any non-elected local agencies which are controlled by central government (such as development corporations etc).
L
- Professional Body** - The British Computer Society and other professional bodies, including those not directly related to IT (eg CIPFA). This category also includes the national IT bodies such as the NCC and the Society of Information Technology Managers (SOCITM), but excludes those bodies which do not have a single professional bias.
- User Group** - This category is restricted to those groups which deal with a single issue or item (eg Community Charge), including software and hardware user groups which are not directly controlled by the proprietary company.

- Software Supplier** - Any vendor of software, including packaged, bespoke and contract developments. This category includes companies offering contract staff for systems development etc.
- Hardware Supplier** - Any vendor or manufacturer of specialised computing or telecommunications equipment and materials, including peripherals. This category includes specialised stationery etc, but excludes general office equipment.
- FM & Consultancy** - Any external agency offering consultancy or facilities management.
- Other** - Any other interaction not covered by the above, including Trades Unions, general enquiries etc.

APPENDIX 3

STANDARD INTERVIEW FORM

This form was used as the principal tool for recording the iterative interviews and for confirming discussions from previous weeks.

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