

Telehealth and Information Society: a critical study of emerging concepts in policy and practice

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To my Dad and my Family for the love and support

And

To the memory of my Grandma

ABSTRACT

This thesis explores a number of interrelated factors that influence the development of telehealth. Telehealth refers to health-related services that can be provided in electronic form over various telecommunications networks, including applications beyond clinical settings and reaching out to communities and homes. As such this study encompass different disciplines and draws not only on the medical tradition but also on information systems, social theory and ideas of information society.

The study is based on the fundamental claim that technology does not follow a pre-determinate path but is shaped by people, who in turn are constrained by historical conditions and current structures. The research takes into consideration a number of such defining structures, including the organisation of healthcare in Britain, the health policy process, strategies for the employment of information and communications technologies (ICTs), conflicting ethical traditions and their manifestations in evaluation processes, and visions of an information society.

The theoretical position and research approach is informed by critical theory. Thus the work focuses on the different, often conflicting, interests of varied stakeholders. It also unveils factors constraining social aims to which telehealth could aspire, e.g. reducing social exclusion and supporting empowerment of patients and citizens. Insights into these concepts and their practical manifestations are explored through a set of linked case studies, which investigate a variety of telehealth projects and initiatives in the London Borough of Lewisham.

The thesis' contribution is twofold – practical and theoretical. The practical contribution is aimed at those who work in and study telehealth, offering a new approach and focus that is not substantially found in other telehealth studies. In this the thesis makes a contribution to the ongoing debates about telehealth's potential implications for the healthcare process. The theoretical contribution is found in the thesis' re-affirmation of the applicability of critical theory to the development of ICT-based social and organisational innovations, re-conceptualised in the light of post-modern and information society theories.

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CHAPTER 1

Introduction

1.1 The scope of the thesis, research questions and research approach

This thesis explores the emergence of telehealth from perspectives that span the macro-level of national health policies, the mezzo-level of local strategies and the micro-level of projects. These interrelations are studied at a greater depth within the London Borough of Lewisham. Telehealth is used in this thesis as an overall term describing many forms of remote delivery of health care services.

The majority of literature on telehealth reports on individual projects and often on this (limited) basis makes claims regarding benefits of telehealth. Alternatively, ‘visionary’ works make sweeping statements about telehealth and its potential for solving (all) shortcomings of current healthcare systems, particularly in terms of (immediate) access to specialists and medical knowledge. This thesis attempts to demonstrate that in telehealth the study of the implications of a technology cannot be removed from the understanding of the processes of conceptualising, conceiving and using the technology. Furthermore, it argues, if indeed it is removed, then we risk falling into the trap of technological determinism (seeing technologies as having self evident meanings and thus ‘impacts’), or alternatively considering the ‘impacts’ as a result of rational, planned actions guiding implementation of technologies (without taking into account entrenched interests and emergent, unplanned consequences).

There is strong evidence to suggest that processes of conceptualising telehealth are undertaken at different interwoven levels, and this is why this thesis presents a multi-level view. Furthermore these processes result in concepts or meanings of telehealth that are not always obvious and may be contradictory. Thus, through the study of these processes, it is the aim of these thesis to find out how and by whom the meanings of telehealth are created, whose interests are voiced and taken into account, what are the overriding aims expressed for telehealth projects, and what ethical concerns guide these developments.

Potential different meanings may suggest varied consequences of telehealth. This thesis focuses on social implications, particularly in terms of social inclusion and empowerment. Finally, to apply this knowledge, this thesis also investigates how these conceptualisations of telehealth may influence health provision in the UK.

The research effort is guided by critical theory, which encourages questioning of 'obvious' meanings, assumptions and beliefs. The exploratory nature of this research means that it does not set out to test a well-defined hypothesis. Nevertheless, it seeks to address a number of research questions:

- How is the concept of telehealth taking form in Britain?
- What meanings telehealth acquires in national health policy and strategy, as well as in local strategies and projects?
- Considering those meanings, what are the potential social implications of telehealth, particularly in terms of social exclusion and empowerment?

The research approach flows from our theoretical perspective. Thus, studying policy texts is guided by the notion of the hermeneutic circle, and conducted through the lenses of critical theory and information society ideas (specifically Miles' framework described in Chapter Three), as well as Boland's fantasies of information (discussed in Chapter Five). The empirical work is conducted using a case study, that aims to explore developments in telehealth in the London Borough of Lewisham, from the perspective of local strategies of the Council and Trusts serving the area, and through the study of individual projects. Interpretation of the findings is informed by critical theory principles and related to Miles' framework, focusing on notions of empowerment and social exclusion.

These terms require some introduction here and are elaborated in Chapter Four. Empowerment is a fashionable term in current social policy and practice, as well as management and increasingly information systems literature. Empowerment, as a concept originated over 10 years ago from social work studies, to denote the support mechanisms needed by groups of less privileged people to fight oppression and injustice (Humphries, 1996a). Of course the ideas behind it have been developed for much longer (e.g. by Marxists and critical theorists). It is often used interchangeably with such terms as user involvement, participation and enablement. In much of the management and information systems literature it is seen in micro-terms, within boundaries of an organisation and largely divorced from political and socio-economic structures. In contrast, this research is interested in empowerment in the societal context, empowerment of citizens and patients and to a lesser extent employees.

Social exclusion is another concept that has gained popularity through the 1990s and it is widely used within current academic and political discourse across Europe in discussion of social policy (Byrne 1999). The issue of exclusion also often features in debates about information society, usually in the terms of a scenario of information rich and information poor. Exclusion here is generally framed in terms of both a lack of ability to access information, including lack of resources or access to technology, and a lack of knowledge or understanding as to what to do with information. Although now both terms – empowerment and social exclusion are used in everyday language (or maybe because of it), their meanings can be ambiguous and the definitions offered are often contested.

1.2 Concepts and context of telehealth

The terms telehealth and telemedicine are often used interchangeably, sometimes in conjunction with the term telecare. All three terms usually refer to health or medical services that can be provided in electronic form over various telecommunications networks. Other definitions emphasise the remote delivery aspect, without limiting it to new digital forms (e.g. including telephone consultations).

There are many more focused definitions. We list here just a few to illustrate the scope of the field and to highlight how different definitions emphasise different aspects. For example Bashshur (1995) provides a formal definition of telemedicine that implies the context of clinical setting and essentially communications between doctors:

Telemedicine involves the use of modern information technology, especially two-way interactive audio/video telecommunications, computers, and telemetry, to deliver health services to remote patients and to facilitate information exchange between primary care physicians and specialists at some distance from each other.

Field (1996, p 1) delivers a broader definition but one that conveys a strong image of telemedicine as a set of technologies:

telemedicine is the use of electronic information and communications technologies to provide and support health care when distance separates the participants.

McDonald, et al. (1997, p 84) distinguishes between telehealth and telemedicine, describing the former as delivering health-related services, and the latter as providing medical services, but also considering a policy/practice distinction too.

Telehealth = generic term, referring to all applications which involve the delivery of health related activities (e.g. a health service, education, and/or health information) over distance, using computers and telecommunications;

The principal use of the term 'telehealth' is in the context of policy development.

Telemedicine = term commonly used for applications which principally deliver medical services, but may involve other components, for example, nursing or allied health care. Examples of subsets of telemedicine are teledialysis and telepsychiatry;

The principal use of the term 'telemedicine' is in the context of the delivery of a clinical service.

Gott (1995, p 11) advances the term telehealth and describes it as:

The promotion and facilitation of health and well-being with individuals and communities, by use of telematic services.

These contrasting definitions illustrate that the boundaries between meanings of the terms are blurry. Sometimes telemedicine is used as an umbrella term but here we argue that telehealth has a distinctive meaning and the differences between medicine, care and health are important if we are to explore the benefits of technologies in health delivery without becoming too focused on narrow clinical applications. Thus, we propose linked working definitions in which telemedicine is seen as services that facilitate remote patient care in an institutional setting, for example, linking hospitals with remote surgeries and enabling remote diagnosis. Telecare refers to services that provide care for people away

from institutions, typically in their own homes, for example monitoring elderly patients as they lead their normal lives. Telehealth is then more encompassing, and also addresses opportunities for health promotion among a wide range of people including the young and healthy and in community settings. Thus telehealth implies an approach based on holistic understanding of a person or communities' healthcare needs and allows a focus on prevention as well as treatment.

Despite telemedicine being a more popular term, appearing in the titles of several journals and books and often mentioned in policy documents, we have deliberately chosen to use the term telehealth, precisely because it is more encompassing and refers to health not medicine. We see this distinction as important, reflecting an underlying philosophy behind the services provided and in our work. This research thus challenges the 'medical model' of telemedicine and rather promotes a social model of telehealth.

Many efforts to categorise the applications of ICTs in health care focus on telemedicine not telehealth. McDonald, et al. (1997), following Grisby, et al. (1993) suggests a system of classification based on disease state, clinical context and indication for use, medical speciality and telemedicine technology used. McDonald, et al. slightly modify Grisby's classification proposing the following categories: (a) interactive consultations (remote, rural, international or special circumstances such as an oil rig), (b) second opinions and case review (hospital or consultant-based), (c) home care (including tele-house call) and follow-up of medical, surgical, psychiatric treatment and rehabilitation of chronic disease, care of diabetes, asthma, heart failure and dialysis, (d) emergency use, for example chest pain diagnosis and ambulatory monitoring, (e) initial treatment and planning of triage for trauma and neurosurgery, disaster relief, and (f) interpreter service.

This classification, however detailed, is not very helpful for the purpose of this research, as it concentrates on telemedicine applications. It omits important parts of telehealth, including health promotion and prevention, and more generally the aim implied in adopting such technology. Other classifications are based on the technology used, and the type of interaction, i.e. pre-recorded (store-and-forward) or real-time. In the first instant information is acquired and stored in some format, before being sent, by some appropriate means (e.g. through telephone/ISDN lines, satellite communications, etc). The second option offers interactive communication between two (or more) sites.

A different way of viewing health care telematics is presented in the TELMED report (1996, p 83). Three macro-level 'visions' that highlight different approaches towards the user-empowerment, or more specifically that embody different user-orientations, are proposed:

- GP-oriented - privileging the GP as gatekeeper to service provision, backed up by integrated telematics services based on electronic patient records, hospital information systems, community monitoring systems and decision-support services from specialists.
- Patient-oriented - promoting the strategic importance of individual 'citizens' in their personalised 'information capsule', with access to information and support services based on interactive smart cards and Internet-based navigation and purchasing tools.
- Administrator-oriented, invoking the structured 'top-down' delivery of service provision retaining much of the existing hierarchical structures of the health care system, reinforced primarily through the use of telematics-based scheduling applications.

This is a particularly interesting classification for this work as it is people and systems oriented rather than technology based. It also highlights how ICTs in healthcare can be conceived of (as well as developed and used) to serve different interests.

Drawing on these different classifications we suggest a broader one, that highlights the main areas of application:

- telemedicine applications, e.g. linking GP surgeries to hospital consultants, remote diagnoses and operations;
- closed, bounded systems serving a well-defined, stable set of population, e.g. telecare systems monitoring and supporting elderly/frail people in their homes;
- open systems; these include public health information service and systems delivering information, facilitating communication and/or providing other services to more heterogeneous and often changing groups of people (with fluid membership).

This categorisation broadens McDonald's, et al. (1997) efforts to include public health information services, while at the same time grouping some of the categories proposed by them. The aim is to produce a simple classification that captures the main aspects of telehealth, without focusing on technologies or individual medical specialities. This classification can then serve as a starting point for an alternative conceptualisation of telehealth. Thus, we propose that telehealth applications could be seen through different

lenses that focus on their roots and context of application. Thus, we could envisage finding a conception of telehealth in a variety of terms:

- a 'drug' or a therapeutic agent in a medicine/health context
- a technology (in the making)
- an information service – in a social/community context
- an information system – embedded in an institutional/organisational context.

These different ways of conceptualising telehealth will highlight different issues and have implications for the development and the evaluation of telehealth. The above proposed conceptions reflect our research interests and intend to highlight different traditions and attitudes that may shape telehealth; thus they are drawn upon throughout this thesis. It must be noted that, while some telehealth initiatives fall more easily within one particular category, most can be seen as belonging to two or more categories. The following section elaborates upon these conceptions.

Different conceptions of telehealth

Understanding telehealth as a drug emphasises its role as a therapeutic resource at the disposal of medical professionals. It brings to the forefront ethical concerns, issues of evaluation and health outcomes and its role within established medical practices and professional norms. This, on one hand, implies the need for thorough tests and trials of medical technologies, on the other it situates this process within larger ethical, social and often political concerns. However, Cribb (1997), using an example of drug prescribing process, points out the limitations of technical rationality in healthcare. He challenges a technical and biomedical conception of good prescribing and undermines a relatively 'objective' framework for decision-making and evaluation.

Telehealth might also be considered as a technology in the making, emphasising how different groups contribute to its formulation, and how they appropriate it. It can be studied in home, organisational, inter-organisational or societal context. There is a considerable body of literature on technology design, development and diffusion/adoption processes, as well as on its role in society. Writings of social constructivists offer insights into process of conceiving, developing and using artefacts,

showing how organisational, political, economic and cultural factors influence the process of technological innovation and change (Bijker, 1997; Bijker, et al., 1987; Bijker and Law, 1992; Callon, 1986; Hughes, 1986; Hughes, 1987; MacKenzie and Wajcman, 1985; Williams and Edge, 1996). While diffusion theory (Rogers, 1995) centres on diffusion of innovations, particularly within and across organisations. An interesting perspective is presented by Swanson and Ramiller (1997) in their notion of organising visions. This is broadly based on institutionalisation theory but it also draws on social constructivists writings. It proposes that innovations are sustained through their organising visions, that incorporate interpretation activities (when innovations acquire identity), legitimisation and mobilisation activities (by which they gain recognition and acceptance). Swanson and Ramiller's concepts (and language) are applied in the next chapter to provide an overview of how the 'organising vision' of telehealth is taking place.

Telehealth as an information service implies a 'customer-oriented' approach, and should be seen within a wider framework of the information society, networked information services and the concept of the Information Highway (including such technologies as the Internet and the Web). This perspective brings to the forefront issues such as universal access and the tension between a right to free information and the trend towards commodification. Also, the quality of information, its source, media of communication and target audience are of importance. These issues are discussed in writings about information society (Dutton and Peltu, 1996; Heap, et al., 1995; Iacono and Kling, 1996), as well as in some telehealth literature, which focuses on the quality of information (Coiera, 1998; Eysenbach and Diepgen, 1998; Eysenbach, et al., 2001; McKenzie, 1997) but also more generally on consumer health informatics (Gustafson, et al., 2001; Jones, et al., 2001; Morris, et al., 1997)

If we consider a telehealth application as an information system, then organisational issues take a central stage. This may lead to examining telehealth, as for example, an extension of a hospital or GP information system. Many challenges, opportunities and problems concerning information systems in general are also common in healthcare domain. A number of authors from this tradition have characterised the healthcare sector as providing particular challenges for information systems development. There are numerous examples of information systems failures within the health domain and

acknowledgement of the problems of development and evaluation of such systems (Anderson, 1992a; Anderson, 1992b; Anderson, 1997; Anderson and Stephen, 1987; Kaplan, 1987; Kaplan, 1988; Mumford, 1993; Raghutathi, 1997; Rindfleisch, 1997; Sheaff and Peel, 1995a). Authors also emphasise the challenges in introducing ICTs in medical contexts and organisational structures and social/power relationships are particularly significant within healthcare organisations, which incorporate many influential professions who are independent of management and draw on different cultures and beliefs. Other obstacles to the implementation of ICTs in health care organisations noted include the lack of an information or IT culture, the difficulty of modelling complex and uncertain problems, and the sensitivity of data (privacy and confidentiality) as well as instances when patient safety may depend on timeliness, accuracy and availability (Aldridge, 1995).

This brief introduction to different aspects of telehealth illustrates the multiplicity of issues and problems, but also indicates that telehealth can be a challenging and rewarding field to research.

1.3 Rationale for the interest in telehealth

Telehealth has been chosen as a topic for this research, partly because it is still in its infancy (as is argued in Chapter Two, its organising vision is still being created), whilst at the same time it is enjoying increasing interest with many new technologies and services currently under development. This is not to say that telehealth is a new discipline; limited applications have been used for some time, for example health monitoring systems used by NASA astronauts, and the provision of remote healthcare advice in isolated regions. Other, more recent developments include using the Internet for communicating with others in similar situation (e.g. forming health support groups), exchanging information (in whatever form) via electronic links with a GP or a hospital, self-diagnosis with the help of expert systems, remote consultations and surgeries. We see a situation in which telehealth has a potential to grow but at the same time its growth is by no means assured, due to, for example, security concerns, legal problems, lack of interest or resistance from potential users and doctors. For example, doctors may see telehealth applications as lacking proven 'value', or undermining their authority; older people may oppose health monitoring systems fearing that they would replace home visits from health/community workers; people may find it difficult to complement the patient-doctor relationship with a patient-computer interface. We can also see the future of telehealth as linked to national policies, and more broadly to the emergence of (some form of) information society.

Telehealth is not a well-researched area, although this is now slowly changing, but the majority of studies still report on single pilot projects. Such works concentrate on technical and functional aspects and often presents simplistic models of benefits of such applications. There are of course exceptions, including works which strive to present more balanced and in-depth view and go beyond simple analysis of feasibility and cost benefits of different projects (Brennan, et al., 1997; Consortium for the European Commission Directorate General XIII, et al., 1996; Darkins and Cary, 2000; Gott, 1995; McDonald, et al., 1997; Wootton and Craig, 1999). We believe that our particular interest, in policy and strategy issues, ethics and evaluation, as well as the focus on an urban inner London area adds another distinct dimension to the discussion. In this we seek to go beyond immediate and operational concerns, considering technological

specifications or legal matters, user acceptance and narrow cost-benefits, and attempt to address fundamental assumptions about the nature and the role of telehealth, highlighting the underlying philosophy behind both strategies and projects. Thus we see this research as complimentary to other works in this area, bringing a reflexive, critically informed analysis. Our research has been given a geographical focus (Lewisham Borough) because we are interested in studying the cumulative and architectural level changes implied by telehealth, rather than single isolated projects. This approach offers an interesting community-level view of developments in telehealth and enables exploration of current and potential links between projects and their likely contributions within a community. It also links well with wider issues of social policy, including social exclusion and inclusion. As telehealth services may effect the lives of many people, this work's findings should be of interest not only to academia but also to the industry, e.g. to health providers, telecommunication companies or other bodies considering delivering telehealth services, as well as to policy makers.

At a broader level, we propose that the healthcare domain itself can be seen as reflecting many general issues of information society; as a testing ground where conflicting ideas are expressed and tried out. This relationship is also reciprocal, that is, information society defines a context for health and telehealth, and in turn influences and shapes the emerging society (e.g. what fundamental ideas it represents). Telehealth may thus be seen within a wider process of empowering citizens and workers, democratisation of public institutions and making service delivery process more localised and responsive to people's needs. Thus telehealth can, at times, promote a view of communities and individuals as more active participants in the health process, not passive receivers of medical treatment, and be developed and used with the aim of limiting social exclusion.

1.4 Theoretical background

The relationship between society and technology has been studied for many years and from different perspectives. These studies are based on different assumptions regarding the role of technology in a society, ranging from many flavours of technological determinism (pure or more sophisticated), via ‘middle’ approach to social determinism. From this literature, the writings of Ellul, Winner and Postman spurred us to adopt a more critical view of the influence of technology (in our case telehealth) in society, and provided an inspiration for the use of critical theory. Thus, this section briefly introduces their works before outlining other main theoretical influences on this research (mainly critical theory, post-modern and information society theories).

1.4.1 *Initial readings*

Ellul, Winner and Postman warn us against surrendering to technology. Ellul (1964) paints a picture of a society dominated by technique¹ where moral values are gradually being eroded, and depicts the power of technique taking hold in every aspect of life. Ellul warns that a process of technological change is self-generating, self-determining, and inevitable. Although Winner (1977) disputes (to some degree) this view he shares Ellul’s belief in the ‘self-augmentation’ of technique. He proposes that advanced technologies require other technologies and economic conditions (resource, labour, etc) that can only be achieved by applying sophisticated techniques. Thus “... one must provide not only the means but also the entire set of means to the means” (p 100). Winner, in critiquing a position of voluntarism which suggests that people have the ability to make choices or exercise control over the course of technological change, points out the limited nature of such choice. He observes that citizens of technological society understand less and less about the fundamental structures and processes sustaining them and therefore find it increasingly difficult to contribute to the steering of technological systems towards common, clearly understood aims. Thus although by no means a technological determinist, Winner shows how technology in the end restricts our choices. In a similar vein Postman (1993) illustrates how in certain societies (which he terms ‘technopolies’)

¹ By technique Ellul means any complex of standardised means for attaining a predetermined result.

technique and technology subjugates other forms of life (e.g. cultural). When this happens people stop questioning certain fundamental assumptions and concentrate on details (how to do things rather than what and why).

Thus authors such as Ellul, Winner and Postman urge us to study society and technology in a 'holistic' manner. Not just to concentrate on analysing the impact of technology on society, not even to limit the enquiry to the subject of the increasing complexity and rate of change in modern society, but to study "... the very existence of advanced technology in the life of man" (Winner, 1977). Furthermore, these authors question the idea of technological progress and are wary of its consequences. Their message is clear: we must not just look at how better to employ technology but also consider if it should be employed at all. The responsibility of a scholar must be to make others aware of the fundamental problems with the pervasive vision of technological progress. We come back to this theme of questioning assumptions and beliefs, and the dangers of reification in Chapter Three, when discussing the works of critical theorists. In the remainder of this section we introduce the specific social theories to which such authors led us.

1.4.2 *Theoretical perspectives*

The exploratory nature of this work requires that it be presented through a variety of theoretical perspectives. Broadly speaking, this work lies with the interpretative tradition, but it goes beyond it or seeks to extend it. Firstly, because it focuses not only on individual accounts but also on underlying structures. (Macro-structures, if at all, taken into account in interpretative studies, tend to be considered as being in the minds of the participants. We come back to this point in Chapter Three). Secondly, because it rejects relativism and takes a normative stance. Thus, this thesis goes beyond interpretativism and draws on critical theory, primarily as developed by Horkheimer and Marcuse, and extended by contemporary researchers, for insights into issues of emancipation, domination and power. Critical theory promotes a particular way of thinking and studying phenomena, it encourages a critical approach, based on questioning established order, dominant assumptions and beliefs. This research thus considers, as telehealth technologies and services are being developed, how and whose interests are taken aboard and what aims are being pursued. In this the works of critical theorists help to

understand the complexity of the situation, the underlying processes taking place (e.g. processes of communication and construction of meaning), and to consider whose voices are silenced or misinterpreted, thus to avoid (hopefully) over-simplifications and misrepresentations. Importantly, critical theorists contest the notion of inevitability and show how we are conditioned to accept a techno-economic regime and believe alternatives to be unrealistic. In this way they hope to 'empower' people to see beyond such beliefs and to achieve a new level of awareness. Thus their works force the researcher to address her assumptions and beliefs and the way they influence her work.

Developing out of, and taking us a little further, information society and post-modernist works offer distinct perspectives that take into account recent developments. In particular, this thesis argues that post-modernism does not have to be understood as a total embracing of relativity and a rejection of any normative values, but rather as a fragmentation of the grand narrative and a questioning of meanings. Understood in this way, post-modern theory can enrich critically informed work without undermining its fundamental assumptions. Similarly, (often utopian?) information society ideas do not necessarily render critical theory obsolete. We argue rather that information society should be seen in its historical context, and not as a radically new form. But, even if we consider information society as a substantially different society, for example where Marxist or capitalist concepts no longer apply, the struggle for emancipation is still a valid goal.

Works on information society point out the increasing importance of information, the potential of ICTs for changing structures, either of private enterprises or public administration, altering the labour market and the way we organise ourselves and work (Miles, 1996). Also, increasingly they study how our private and social lives are influenced by new technologies. The Internet in particular is seen as having a great impact, changing the way we access and distribute information, express ourselves and interact with other people either on individual or group basis. Thus although it is our (society and group) norms and values that influence technological developments, technologies in turn subtly alter our perceptions and values. This thesis primarily concentrates on meanings that telehealth acquires, but it also explores the transformative potential of telehealth. Thus, we are interested in the discourse of information society implied in the field, and in

particular how it addresses social exclusion and/or integration, diversity of choices and lifestyles, and issue of empowerment.

We argue that such technological developments do not come about in isolation but are a product of their times, they are shaped by people (or groups of people) who in turn are influenced by prevailing trends (socio-economic trends, societal norms and beliefs, other technological developments, etc.) and structures (organisations, government, etc.). Information society theories provide us with (plausible) interpretations of such trends and structures and (to some extent) their implications for technologies.

We must recognise that the literature of information or postmodernist society, as well as that of critical theorists, does not specifically concentrate on the process of developing technical artefacts (more on their 'impacts'). Thus this research also utilises diverse schools of thought that have roots in the sociology of science movement and are referred to as the social constructivist programme. These theories offer additional insights into the process by which technologies are conceived, produced and used, but their limitations (particularly their relativism²) make them unsuitable as the over-riding theoretical position of a critical study.

² The social constructivist programme concentrates on exploring the origins of innovations, largely without considering their social consequences, or making any moral judgements.

1.5 Structure of the thesis

This dissertation is divided into eight chapters. This chapter presents main themes developed through the thesis. It introduces the research topic, the rationale for choosing it, the research questions and approach, the work's significance to different communities. Next, different definitions of telehealth are presented and a brief summary of developments in this area is given. Then, the main issues concerning telehealth are signalled and the context of telehealth is outlined. This is followed by a discussion of the theoretical basis for the work.

Chapter Two takes further the exploration of telehealth, depicting how different considerations (political/societal, organisational and medical) may influence it, and what claims are being made on behalf of telehealth. In doing so, the chapter adopts Swanson and Ramiller's (1997) concept of 'organising vision'. Our focus is not on an adoption of technology in a particular organisation(s) but on its mobilisation in a societal context. The chapter describes the interpretation, legitimisation and mobilisation activities of telehealth, taking place in the UK. It concludes that all those activities are still continuing and that telehealth is still a fluent and contested concept. Particularly, it identifies social implications of telehealth (e.g. as in terms of social inclusion and empowerment) as an interesting area deserving more attention.

Studying meanings of telehealth and their potential social implications is a difficult task that requires a theoretical grounding that can take into account the complexities involved. As argued in this chapter, critical theory supports such an undertaking. Thus, Chapter Three discusses the main tenets of critical theory, and their relevance in the light of more recent developments, particularly postmodernism and information society theories. It presents arguments for and against different approaches and considers their applicability to this study. Chapter Four describes the research approach, focusing on the hermeneutic circle, and introduces the framework adopted in the study.

Having established the broader context of the research, identifying areas of focus, as well as proposing how the research will be conducted, Chapters Five to Seven describe the research undertaken on the three levels (society/policy, local/organisational and

individual projects). Chapter Five is concerned with the meaning telehealth acquires in national health policy and strategy documents. Chapter Six introduces the case study, outlining local telehealth strategies and initiatives within the London Borough of Lewisham. Chapter Seven describes individual telehealth projects taking place in or related to the Borough. The interpretation of findings is guided by critical theory, with particular attention paid to notions of social exclusion and empowerment, and their manifestations in evaluation practices.

Conclusions of the research are summarised in the final chapter. This is followed by the outline of the contributions and limitations of the dissertation. Finally, areas for further research are proposed.

CHAPTER 2

Organising vision of telehealth

Using Swanson and Ramiller (1997) concepts of organising visions of information systems innovations, this chapter discusses the organising vision of telehealth. It covers interpretation, legitimisation and mobilisation activities by which innovations acquire identity, and (sometimes) recognition and acceptance by a particular (changing) community or communities. This chapter focuses on the struggle that takes place to define and sustain such meanings for telehealth. It explores the vision's different dimensions, i.e. the medical, organisational and societal. It also discusses the ethical traditions from which telehealth stems to show the norms and values underpinning telehealth. These dimensions reflect interests of this research and are not intended to be comprehensive. (For example, market aspects are only treated very briefly.) This approach stems from our belief that telehealth should be seen within a context of emerging information society (a socio-economic context), international and national health policy, organisational structures of healthcare provision and technological development and change. Some of the ideas highlighted in this chapter, for example about the nature of information society and the meanings telehealth acquires in health policy documents, are discussed at a greater length in Chapters Four and Five respectively.

2.1 The concepts of 'organising vision' and related approaches

2.1.1 **Organising vision**

In order to support our exploration of telehealth we adopt the language introduced by Swanson and Ramiller (1997). Although their paper deals with issues of adoption of new technologies for information systems in business organisations, it is of interest and relevance to our research, because it goes beyond boundaries of one organisation and describes a process by which innovations acquire identity, and (sometimes) recognition and acceptance by a particular (changing) community. Thus, the authors argue that:

... an interorganizational community, comprised of a heterogeneous network of parties with a variety of material interests in an IS innovation, collectively creates and employs an *organizing vision* of the innovation that is central to decisions and actions affecting its development and diffusion. That organizing vision represents the product of the efforts of the members of that community to *make sense* (Weick 1995) of the innovation as an organizational opportunity. In so making sense of the innovation, the community in effect also defines it and creates it. (p 459)

Swanson and Ramiller argue that such a community makes sense of a new technology through shared experiences, e.g. via industry journals, meetings, presentations, conferences, etc. An organising vision opens some of the possible 'windows of opportunity' that are historically situated, both technologically and socially, and makes the adoption of an innovation a possibility. The authors identify three important aspects of the information systems (IS) innovation process facilitated by organising vision: interpretation, legitimisation and mobilisation.

During interpretation a common 'story' is developed to describe the innovation's nature and explains its purpose within the broader social, technical and economic context. This process reduces possible uncertainties regarding the innovation itself and its application. Interpretation is complemented by the process of legitimisation of the innovation. This is when the rationale for adopting the innovation is being built, when questions of why we should adopt it are being addressed not only in technical but also in business/organisational terms. The final aspect of organising vision, mobilisation, entails all activities leading to activating, motivating and structuring the entrepreneurial and market forces that emerge to support the material realisation of the innovation. This includes vendors bringing new products to the market, the proliferation of trade journals, conferences and expositions. The organising vision provides images that those involved in selling their products (hardware, software and services) can refer to and perpetuate.

Although, Swanson and Ramiller refer to interpretation, legitimisation and mobilisation as 'aspects' of organising vision rather than its stages, nevertheless the paper creates an impression that processes of IS innovations development and adoption are to some degree linear. However, the three aspects discussed do not simply constitute pre-defined stages that neatly follow each other and are always easily identifiable. Certainly, the development and adoption of telehealth technologies was not, and still is not a smooth process. Also, sometimes mobilisation has to take place before legitimisation can be undertaken, e.g. legitimisation of telehealth involves evaluation of projects and that requires mobilisation of considerable resources (particularly if pilots are to be undertaken on a large scale).

Despite this, the ideas presented above are very interesting, as they not only provide a language for a discussion on adoption of innovations but also suggest how such a process can be studied and visualised. The authors point out that the organising vision may fluctuate, i.e. become more or less visible and even be rejected, without resulting in the adoption of an innovation.

Swanson and Ramiller (1997) draw on number of theories, including institutional theory, adoption theory, actor network theory (ANT) and social constructivism of technology (SCOT). Of those, we have found the ideas of social constructivism (Bijker, et al., 1987; Bijker and Law, 1992) and ANT (Callon, 1986; Latour, 1987) of particular relevance to our research, complementing organising vision concepts.

SCOT introduces the concept of *interpretive flexibility* - demonstrating that the technological artefacts are culturally constructed and interpreted, i.e. the flexibility is manifested in how people think of or interpret artefacts and how they design them (Pinch and Bijker, 1987). Thus there are always a number of possible outcomes in the way technologies are conceived, designed and used (MacKenzie and Wajcman, 1985; Williams and Edge, 1996). More controversially, SCOT proposes that an artefact may become closed or stabilised, where the problems relating to its introduction are resolved or *appear*, to the relevant groups, to be solved.

ANT suggests that technological innovations are developed and adopted (or not) through the building of networks of alliances between human and non-human actors.

What distinguishes ANT from other approaches is that it rejects outright the distinction between technology and society and proposes that both should be studied in the same way. It thus not only signifies the important of social and technical aspects of the network, but their fusion.

ANT and SCOT are criticised on a number of points, but mainly for their relativism³ (Button, 1992; Russell, 1986; Winner, 1993). In addition, SCOT's concept of stabilisation of an artefact is disputed by those who point out that technologies are highly malleable not only at the stage of conceptualising and designing them, but also during use (Cooper and Woolgar, 1993; Woolgar, 1996). This is particularly true of information technologies. (A more detailed account of those approaches can be found in Appendix A.)

Despite their shortcomings (in terms of their applicability to this research) the writings of social constructivists and ANT theorists offer an interesting accounts of the forces shaping technological developments, and even though they do not constitute our main theoretical framework, they implicitly enrich our research and many other critical studies (Doolin, 1998; Doolin and Lowe, 2001; Whitley, 1999).

We are also aware that the charge of relativism can be applied to the organising vision approach, as it is to social constructivism. Swanson and Ramiller do not consider whose voices may be suppressed or never heard in the community building the organising vision. Nor they are concerned with the ethical consequences of innovations. These are aspects that are addressed by critical theorists, whose writings are discussed in Chapter Three. Furthermore, they present a view that omits the role of the state, the government's policies and strategies.

However, for the purpose of this chapter we have found the notion of organising vision especially useful. The concepts and vocabulary of organising vision are particularly suited to delivering a high-level account of telehealth as an emerging phenomenon, and we do not want to concentrate on how and why a specific artefact has taken a particular design (the majority of SCOT theorists conduct very detailed studies of specific artefacts). Also, the organising vision approach focuses on the present, while the majority of case studies

³ Relativism in this instance implies lack of an evaluative stance or any moral or political principles that might guide people in their judgement regarding the possibilities of new technologies.

using social constructivist approach look to the past (this is particularly true of the research conducted by founders of social constructivism). Furthermore, Swanson and Ramiller apply the concepts of the organising vision to the IT field, and thus make it particularly relevant to telehealth.

2.2 Organising vision framework

While using concepts of organising vision we have given them our 'flavour' by focusing on aspects that are of particular interest to this research. Thus, under interpretation, legitimisation and mobilisation activities, we discuss three different dimensions of telehealth's organising vision: the medical, organisational (information systems) and societal. The first dimension explores the nature of telehealth and the medical tradition in which (at least partly) it is embedded. Here we consider evolving perceptions of health and medicine and the ethical traditions of medicine. The organisational dimension describes the increasing role being sought for ICTs in healthcare delivery, in the context of organisational changes in the NHS. The last dimension includes the overview of the vision of telehealth in relation to society (information society) and how this vision acquires meanings in policy documents.

These three dimensions do not intend to be comprehensive; rather they reflect our particular interests, i.e. our bias towards policy and societal focus. They also reflect our preoccupation with underlying meanings of telehealth, i.e. meanings that organising visions construct; rather than with researching all the forces involved in the creation of the vision. We believe that there are important ethical questions concerning telehealth, and that organising vision is not only about market forces, but also about establishing a deeper, ethical meaning of a particular artefact or a set of technologies. Thus, we explore these themes in this chapter and throughout this thesis.

We focus on evaluation practices when discussing legitimisation activities, because we believe that evaluation can be perceived as a practical manifestation of a variety of concerns, including ethical, organisational and societal, and is indicative of what is expected of telehealth, what aims are given priority and whose voices are considered. It could also be said that in evaluation the theory and the practice meet.

The table below shows some of the questions we seek to answer in relation to each of the dimensions suggested. The questions are not comprehensive, rather they are signposts indicating the issue considered in the following section.

Table 1 Activities and dimension of organising vision of telehealth

ACTIVITIES	DIMENSIONS		
	Medical	Organisational (Information Systems)	Societal
Interpretation	What are the recent trends reflecting attitudes towards illness, health and medicine? What role can telehealth play in the context of those trends and within (changing) medical practices?	What roles ICTs and telehealth in particular acquire in the NHS? How does telehealth relate to the meanings given to ICTs?	What is the place of telehealth in the vision of information society?
Legitimisation	Is telehealth medically sound and technologically feasible?	What is the evidence of telehealth's benefits? How telehealth services fit in with or change the process of healthcare delivery?	Is telehealth socially (ethically) desirable?
Mobilisation	To what extent the medical community engages in the mobilisation activities?	What are the forces supporting the vision of telehealth? How organisations (the NHS) sustain the organising vision?	What mobilisation activities are undertaken in the context of wider information society initiatives? What part does the government play in mobilisation activities?

2.3 Organising vision of telehealth

2.3.1 *History of telehealth*

An organising vision is always historically situated, with past developments influencing current ones. Thus telehealth's history (or one version of this history), outlined in this section, is an integral part of its organising vision.

The organising vision of telehealth has been constructed for over thirty years, although some maintain that the roots of telehealth are much older. For example, Darkins and Cary (2000) point out that healthcare messages (e.g. warnings about a plague) were exchanged from the early ages using primitive communication means e.g. flags. However, even if we confine our definition of telehealth to more modern communication means, occurrences of telemedicine have taken place since the 1920s (or even earlier). For example, when physicians on shore used ship-to-shore radio to communicate medical information to those at sea (Moore, 1999). Wallace (1998) suggests that the documented use in 1897 of a telephone for remote diagnosis is perhaps the first example of telemedicine. One of the earliest implementations of interactive television for medical consultations was in Nebraska in the late 1950s. A microwave link was used to conduct telepsychiatry consultations between a state mental hospital and the Nebraska Psychiatric Institute (Moore, 1999; Perednia and Allen, 1995). Another project which has its roots in the 1950s was a joint effort of NASA and the US Public Health Services to provide telehealth services (teleconsultations) for the Papago Indians from the Reservation in Arizona (Moore, 1999). The National Aeronautics and Space Administration (NASA) is usually acknowledged to have played an important role in the early development of telehealth, and provided much of the technology and funding for initial projects in the US. However, Craig (1999a) argues the efforts of a few individuals using readily available commercial equipment have been just as important for the development of telehealth. Such early applications of telehealth were often driven by the concern of access to medical services; they focused on remote populations not served by medical specialist or even primary care workers (Collins, et al., 2000). Thus, the early, and most prevailing, image of telehealth as service for remote populations was established (i.e. the first interpretation of telehealth).

It was not until the 1960's that a more significant number of projects were conducted. However, most of the projects from the 1960s through to the early 1980s did not survive the end of grant funding or trial financing (Darkins and Cary, 2000; Perednia and Allen, 1995). Thus, even since the 1960's the organising vision of telehealth cannot be seen as a linear, phased process. In the 1960s telehealth (or rather telemedicine as it was referred to) had reached (although in a limited way) the mobilisation stage, only to be nearly totally abandoned later on, and having to go through the process of legitimisation once again. Many books on telehealth (or telemedicine) attribute this to high

telecommunications costs, problems with technologies, their lack of stability and difficulty to use, as well as lack of business plans and adequate project management, and an inability to interface telehealth with mainstream health care provision (Darkins and Cary, 2000; Field, 1996). Perednia and Allen (1995) suggest that the single most important cause of telehealth programs failure might have been an inability to justify them on cost-benefit basis. The organising vision never managed (using Latours' (1987) language) to enrol a sufficient number of allies. Yet, although the vision floundered and lost its visibility, telehealth was sustained in some specialised areas, finding niches in NASA, the USA military, Antarctic survey stations and offshore oil exploration rigs (Darkins and Cary, 2000). For these applications finance was often not a problem and what is more, there was no obvious and feasible alternative.

Out of this small enclaves of survivors, in the late 1980s and the 1990s the vision re-emerged again on a wider forum and telehealth projects have become more widespread (Perednia and Allen, 1995). This interest in using telehealth to provide healthcare to the general population was renewed first in Scandinavia (particularly Norway) during the late 1980s (Darkins and Cary, 2000). In the early 1990s US, Australia, Canada, and to a lesser extent the UK joined in. Although the organising vision of telehealth has developed differently in different countries, and amongst other factors, depends on the country's geographical and socio-economic situation, national policies, telecommunications and information technology (IT) saturation, the history of adoption of innovations, and specific/localised circumstances, a number of common reasons for the renewed interest can be suggested. These include increased pressures on the healthcare provision and technological advances, coupled with cheaper telecommunication services.

2.3.2 *Interpretation activities since the 1990s*

As the above brief history illustrates, interpretation activities have been taking place for a number of years and continue, as the general public and health service staff only now becomes familiar with the terms telemedicine, telecare and telehealth, and starts to experience it in everyday healthcare, and in the contemporary context we see interpretation activities taking place concurrently with legitimisation and mobilisation activities. Similarly, in the literature on telehealth all of these activities are often undertaken simultaneously, although the focus is on interpretation and legitimisation.

This literature can be categorised into introductory / general texts, those focusing on particular aspects of telehealth, (e.g. legal (Stanberry, 1998) or community applications (Brennan, 1995; Brennan, et al., 1997)), comparative reviews of existing trials and their findings, as well as (usually short) reports on specific telehealth trials. Specifically, interpretation takes place in texts introducing telehealth and its various definitions and categories, describing its history, benefits and challenges, and more generally, the vision behind telehealth. There are also comprehensive reports conducted by varied research bodies, often to inform the policy makers (AHRQ, 2001; Consortium for the European Commission Directorate General XIII, et al., 1996; Doze and Simpson, 1997; Hailey and Jacobs, 1997; McDonald, et al., 1997; Peppiatt, 2000). Also, telehealth increasingly is considered in more general books concerned with applications of ICTs in healthcare. Such books tend to provide a more balanced view of telehealth, while the industry journal publications remain very descriptive, usually offering a simplistic, technological view (McLaren and Ball, 1995; Pelletier-Fleury, et al., 1997).

Despite these interpretation and legitimisation efforts telemedicine (and to some extent telehealth) is still often considered in very simplistic and over technologist terms, as our interviewees pointed out:

There is a belief that telemedicine is a thing, something you can get hold of. It is not. It is a group of technologies. It is as much a control thing as it is a technology. It is not a thing, it is not a computer. (Telemedicine Manager, Corporate Department, St Thomas' Hospital)

In the white policy paper part of the telemedicine vision is about fancy, sexy stuff, e.g. an idea of a camera mounted on paramedics helmets. The sort of thing that looks good on the news and so on but might not in fact actually deliver that much real business benefits than some the other things. (The Associate Director, Information Systems at Lambeth, Southwark and Lewisham Health Authority)

Furthermore, the terms telehealth, telemedicine and telecare are still fluid and constantly re-interpreted – both in the literature and in practice. Initially the term telehealth was seldom used – the focus was clearly on telemedicine and its ‘high tech’ end. What caught people’s attention was the ability to perform remote operations, different forms of robotics and real-time teleconsultations. In recent years a more encompassing view has been taken that promotes telehealth, and highlights its applications not only in medical context but also in health (preventive) and social/community settings (Brennan, et al., 1997; Gott, 1995; Yach, 1998). For example, the term telehealth recently appeared in a book title - ‘Telemedicine and telehealth’ (Darkins and Cary, 2000). These authors see

telehealth as an umbrella term, yet they still felt the need to include in the title the term telemedicine as well. This is, we suspect, because telemedicine is still recognised more widely, perhaps even more so in the US. However, even in the UK, the term telemedicine is used more often than other terms, for example in the context of UK's health policy (DOH, 1997; NHS Executive, 1998). Nevertheless, the organising vision has not yet ensured that either of the terms – telemedicine or telehealth – are established. In the words of the IT Consultant and Telemedicine Manager at St Thomas' Hospital: "Telemedicine is just a word, a title map". The term may even become obsolete, when (if) telemedicine has proven itself as means of augmenting healthcare delivery (Pedersen, 1999). This view was also expressed by one of our interviewees:

In a long term telemedicine is an almost dead term. It has a very short-term future. People will just use the technology as they use a fax, telephone or PC. You don't have a photocopier, email manager – why should we have a telemedicine manager? There is glamour hype around telemedicine but it is neither glamorous nor new but it is deemed to be sexy. (Telemedicine Manager, Corporate Department, St Thomas' Hospital)

This illustrates that the success of an organising vision may lead to the adoption and sustained use of innovations it promotes but ironically also to the demise of the vision itself. This phenomenon is acknowledged by Swanson and Ramiller (1997) who suggest that when the innovation comes, in time, to be taken for granted, the need for sensemaking subsides and the organising vision fades away. Thus as relevant technologies become more ubiquitous, telehealth would become embedded in the normal provision of health and healthcare services. McDonald, et al. (1997) suggest that this integration may happen within five to ten years. (With hindsight a rather optimistic estimate.) Furthermore, the boundaries of telehealth are blurred and some of the applications could be classified under health telematics or informatics umbrella and integrated in the mainstream IT applications in this domain.

From the perspective of organising vision this discussion about the terms is not purely about semantics but is of some significance, because it draws telehealth's boundaries and suggests emphasis on different types of applications or preferred ownership. The organising vision of telehealth is performed at different levels – organisational, inter-organisational, national and international. Its discourse appeals to and draws on different traditions. We could say that the organising vision of telehealth has many inter-woven dimensions. The next section describes such interpretation activities from the perspective of medical, organisational (inter-organisational) and societal dimensions.

Medical dimension of interpretation activities

In the contemporary context the medical dimension is perhaps the strongest, reflected in the usual preference for the word telemedicine. The word telemedicine comes from the Greek *telos* (distance) and medicine. The practice of medicine has strong ethical underpinnings and it is partly within this tradition that telehealth acquires its meaning(s). Thus, in the following paragraph we discuss the main ethical perspectives guiding the developments of medicine and their expression in the organising vision.

Ethics in medicine is usually seen as based on deontological principles of seeing an action as right or wrong in itself depending on its conformity with a moral rule, and not on consequences. This is then overlaid with a utilitarian ethic of maximising good and bringing about the greatest happiness to the greatest number. (For elaboration on these concepts see (Cornford and Klecun-Dabrowska, 1999; Cornford and Klecun-Dabrowska, 2001)). Thus the medical tradition is based on patients' rights, doctors' duties and attempts to balance different interests (of varied patients or patients/citizens groups). It also reflects to a degree an Aristotelian account of virtues and the values of a profession. We see a reflection of deontological ideas in pre-occupation with the safety of telehealth (to ensure that telehealth does not impair clinician judgement and does not do any harm). Utilitarian concerns are manifested in claims that telehealth can contribute to more equitable healthcare and enable better use of (limited) resources (Yach, 1998). Aristotelian virtues are recalled in the discussions about implications of telehealth for professionals roles, the nature of doctor/patient relationship, and perhaps, more generally, the quality of patient/citizen lives.

According to Lain (quoted in Sosa-Iudicissa, 1997) one could distinguish four phases and attitudes of the medical role: *spontaneous medicine*, driven by instincts of protection and comfort, *empirical medicine*, based on experience of previous actions and their results, *magic medicine*, present in one form or another in all cultures throughout the centuries, and finally *technical medicine*, rationalising what and why something is being done. The last phase began in Greece towards 500BC and has lasted till present times, becoming the dominant mode of operation (particularly in Western cultures), but without totally eradicating other types of medicine. Ever since the 18th Century the scientific view of the human body (and its separation from the mind) has been promoted in Western countries

and *technical medicine* has become even more dominant, but also critiqued. Immediately, we could consider telehealth as an embodiment of *technical medicine*. But this is only one interpretation. For example, telehealth systems facilitating group support (e.g. over the Internet) can be classified as *spontaneous medicine*, while applications supporting holistic approach to body and mind (e.g. those facilitating self help or health promotion) might be seen as *magic medicine*. We should also note, particularly in the UK policy documents, the parallel emphasis on *empirical medicine*, e.g. as manifested in the establishment of National Institute for Clinical Excellence (NICE) and the drive towards evidence based medicine.

In discussing telehealth, Gott (1995) suggests that there is a growing world-wide dissatisfaction with scientific reductionism as the dominant social and economic paradigm. This feeling is also present, to a degree, in the medical community with the technical and medical model on which healthcare has been based in the twentieth century seen as problematic. The emphasis on new, sophisticated technologies and treatment techniques, specialised medicine, and more focused secondary and tertiary care have contributed to the dramatic rise in health care expenditure. Yet, in recent years they have failed to deliver the expected improvements in the health of Europeans. In reaction to this, alternative models of medicine, health and healthcare have emerged, reflected for example in the growing interest in non-traditional (non-western) medicine, in the move from the biomedical view of the body (still a dominant paradigm) to the more holistic approach. Hence, the focus is slowly shifting from illness to health and from the individual to the population. These alternative approaches at first dismissed by the medical establishment have now found a place in the mainstream healthcare delivery (e.g. osteopathic or acupuncture treatments can be received under the NHS). Furthermore, there is a growing acknowledgement that illness and health can be defined in different terms, for example social rather medical (e.g. disability may be seen as an exclusion from certain services and places rather than physiological disorder). Our research indicates that patients are increasingly acknowledged in the policy documents and in parts of the medical/health community as having an active role to play in the healthcare process.

At the same time, in the past half century health provision in the western world has undergone a continuous process of managerialist rationalisation. This can be seen, for example, in the long history of reorganisation of the UK's National Health Service

(NHS) and in the recent trend towards evidence-based medicine (DOH, 1997). Critics see the process of managerialist rationalisation as a medicalisation of peoples' problems, people themselves, and the services that they are offered (Hillier, 1987). An exclusively medical or technical response to a patient's illness is seen as inadequate or even unethical (Simpson, 1994). This view has its implications for telehealth services, particularly telecare, in positive and negative terms, as they may lead to medicalisation of often social problems. For example telecare services may potentially lead to reduction in personal contact and result in health teams responding to emergencies only rather than providing care (Fisk, 1995)

It is within the context of such (established and new) practices and emerging trends that telehealth's organising vision is taking place. The medical dimension of telehealth is played out in an organisational context, as well as being influenced by societal trends. These dimensions are discussed in the following sections.

Organisational dimension of interpretation activities - ICTs in healthcare

As the study conducted by Aas (2001) illustrates introducing telehealth (or telemedicine using the author's term) has varied organisational consequences, including organisational restructuring, new job descriptions, relocation of the place of work and effects on employees not directly involved in telehealth. In short, it affects people who directly work with telehealth and those who do not. These are issues given little consideration in the policy vision of telehealth.

Equally, we argue here, the organisational context has implications for telehealth's vision. Thus, this section highlights organisational reforms of the NHS, the trend towards 'modernisation' and rising importance of information systems and information in the NHS. (These issues are elaborated on in Appendices B and C.)

We focus on the NHS because it dominates the healthcare provision in the UK (only approximately 7% of care is delivered by the private sector (Atkinson, et al., 2001)). Furthermore, Atkinson, et al. (2001) claim that because in the UK the government both provides the legislative and regulatory frameworks, as well as delivery of care, IS

development is not shaped by market, business drivers or by suppliers, and IS strategy needs to be ‘politically aligned’, with the government’s priorities⁴.

Historically, the bulk of information and IT investment in the health sector had been on national research and for demonstration projects (e.g. the national Hospital Standard Systems Project), business management systems (e.g. regional payroll, supplies, Family Health Services Authority administration, the national Standard Accounting System), as well as mainly stand alone, departmental projects (Peel, 1995). These usually were administrative support systems, although some were clinical (e.g. renal systems). Very few systems were designed for community-based or general practitioner services.

Throughout the 1980s spending on IT in the health sector grew. However, according to Sheaff (1995b) it was not till the health system reforms in the early 1990s that information was perceived as a vital resource. The pressure of containing costs of healthcare in the face of increased demand lead to administrative reforms, including the split between purchasers and providers of care and attempts to professionalise health services management. This created the need for sophisticated information systems. In addition, public health programmes, that followed Health for All 2000 initiative (WHO 1984) and policies set in the white paper Health of the Nation (DOH 1992), require epidemiological databases for targeting, managing and monitoring innovations (e.g. breast screening). Finally, Sheaff (1995b) considers the politicisation of health care as another factor in the rise of information systems. This is because the government needs increasing amounts of data to legitimise and (less often) to ground health policy.

Raising costs of healthcare provision have prompted the UK government to embark on a plan of modernising the NHS. Recent health policy papers (DOH, 1997; DOH, 1998; DOH, 1999) have all envisaged an expanding role for ICTs, covering not only administrative and management functions, and collecting data on the health of the population but also enabling the delivery of information and care to communities and into homes. *'The New NHS: Modern. Dependable'* (DOH 1997) places greater emphasis than its predecessors on the role of ICTs in the healthcare delivery process and describes telemedicine and telehealth services they would enable. Following this *Information for*

⁴ Although we would not want to dismiss the market forces and suppliers (as we believe they do play a role in the organising vision of telehealth), they are largely outside the scope of this research.

Health: An Information Strategy for the Modern NHS 1998-2005' (NHS Executive, 1998) sets out strategies for the employment of ICTs in the NHS. The strategy document re-emphasises the need for accurate and instantly accessible information. It identifies four distinct groups and their information needs: patients, healthcare professionals, managers, planners and the public, and discusses how ICTs may provide ways of addressing those needs. The paper looks at ways of exploiting the new technology, wherever appropriate, to provide as much service as possible in or close to the convenience of the patient's home. In this it promotes a number of telehealth initiatives, including *NHS Direct* (a nurse-led service offering health care advice via telephone) and telecare services. It also emphasises the role of information systems and telehealth services in supporting co-operation between different parts of the NHS. The services proposed include email, enhanced by the ability to transfer images, on-line referrals and hospital booking appointments.

In these policy documents telehealth is being interpreted in the context of both, information requirements of various organisations within and beyond the NHS (e.g. in terms of inter-organisational co-operation, in addition to facilitating administrative and managerial tasks), as well as healthcare and information needs of the population. This illustrates that both dimensions, organisational and societal, are interrelated, and the organising vision of telehealth extends beyond medicine, health and healthcare institutions. Thus the following section introduces the societal dimension of telehealth. (These policy papers, the strategy document and their local implementations in Lewisham area are discussed in more depth in Chapters Five and Six respectively.)

Societal dimension of interpretation activities

Here we continue the discussion regarding changing perceptions of health and healthcare, placing them within the context of information society, seen from the policy perspective, and highlighting their relevance to the organising vision of telehealth.

The debates about medicine, health and wellness, and proposals for more primary sector based and holistic model of care, introduced in the medical dimension have permeated societal and policy discourse. However, according to Gott (1995), these developments not necessarily constitute a major shift in practice. Even the emphasis on primary care

does not fundamentally undermine the dominant model of health, as there are significant differences between primary health care services and primary medical services. Thus:

Primary health care services are characterized by integration of medical with social, educational and other proactive health services, and draw on a social model of health. Primary medical services are characterized by reactive, individualistic and preventive treatment and care activities, and draw on a medical model of health. (Gott, 1995 p 14).

Taking the discussion about different models of healthcare further, Smith (1997) evokes the metaphors of “industrial age medicine” and “information age healthcare”. In the first instance (current system) the emphasis are placed on the supremacy of professionals and institutions. In the second (possible future) model – patients become “informed consumers” and professionals – facilitators and partners. As many authors propose, telehealth could play an important part in this process (Baker, 2000; Darkins and Cary, 2000; Peppiatt, 2000; Smith, 1997), although of course it is not as simple as providing ‘information at the fingertips’ for citizens and some people may not wish to take decisions regarding their healthcare or may take wrong decisions (Coulter, 1999; Darkins and Cary, 2000). Such concerns with analysis of patients and citizens information needs, and ways of addressing them with the aid of ICTs, are seen as a part of emerging discipline of consumer health informatics (Eysenbach, 2000; Tetzlaff, 1997). Eysenbach (2000) divides consumer health informatics applications into two categories. The first includes community informatics resources that provide health information to socio-economically and geographically diverse populations, via health kiosks, community online networks or the Internet, e.g. as described by Morris (1997). The second category incorporates clinical informatics resources, which are delivered to select groups or patients. For example, systems provided for those suffering from chronic illness, like cancer, diabetes, Alzheimer’s disease or AIDS, etc. (Brennan, 1995; Brennan and Ripich, 1994a; Doughty, et al., 1998; McGregor and Freiwald, 1997; Payton, et al., 1995a; Payton, et al., 1995b; Smyth, et al., 1997; Tetzlaff, 1997).

Although, the consumer-oriented discourse may lead to (a partial) empowerment of patients it also might, in its extreme, result in commodification of information and healthcare. The path taken depends (at least partially) on the visions of (information) society. Thus the reminder of this section focuses on organising vision of information society and telehealth as depicted in policy documents, while theoretical perspectives on information society and related writings on post-modernism are discussed in Chapter Three.

In policy terms the concept of information society was embraced by the European Commission (EC) in the early 1990s. Two influential documents: the White Paper on *'Growth, Competitiveness, Employment: The Challenges and Ways Forward into the 21st Century'* (European Commission, 1994) and the *Bangemann Report on the Global Information Society* (Bangemann, 1994) set the overall recommendations for Europe in the information age. They highlight the importance of new information and communications technologies in the creation of new society and see the deployment, dissemination and access to information technologies as a key to the economic development of Europe. They stress the need for accurate and up-to-date and usable data available via cross-national information infrastructure.

According to the Bangemann report (1994), information society has the potential to improve the quality of life and the efficiency of social economic provisions and to reinforce cohesion. Although the report recognises a risk of creating two classes: 'haves' and 'have nots', at the same time, it put across a very optimistic view of the near future when it states that Europe's citizens and consumers can expect: "A more caring European society with significantly higher quality of life and a wider choice of services and entertainment." (Bangemann, 1994, chpt 1 p 2).

Similarly, in the UK, the organising vision of telehealth (and more generally ICTs) is being created, in part at least, from the perspectives of information society. Telehealth is promoted as one of the services offered in information society, often in the context of 'on-line' community, in the healthcare setting (within and beyond the NHS structures) and as an extension of healthcare information systems. For example, the Green Paper *'Creating the Superhighways of the Future: Developing Broadband Communications in the UK'* (DTI, 1994) envisages that the way we receive different services as consumers (e.g. leisure and information services) and as citizens (health, education, social services, etc.) would change. It identifies telemedicine alongside teleworking, teletraining and links between administrations as a priority application.

The Government sees its role as promoting the use of new ICTs and information services through providing a regulatory framework and by using such services within the government agencies and between the government and the public (CCTA, 1995). The

recently published White Paper '*Modernising government*' (HMSO, 1999) proposes a number of reforms that are intended for restructuring the way government works and the way services are offered to people. It places 'information age government' in the centre of the service modernisation process.

Information technology is revolutionising our lives, including the way we work, the way we communicate and the way we learn. The information age offers huge scope for organising government activities in new, innovative and better ways and for making life easier for the public by providing public services in integrated, imaginative and more convenient forms like single gateways, the Internet and digital TV. (HMSO, 1999, chpt 1 p 6)

Specifically, the paper sets targets for the electronic delivery of public services (25 per cent by 2002 and 100 per cent by 2008⁵) to which all public agencies need to attend. It proclaims that "The NHS will use IT to transform the way health services are delivered." (p 1 in chpt 5) and singles out *NHS Direct* and *NHSnet* as important initiatives.

Such policies and rhetorical stances both influence the discourse of the telehealth organising vision (or in Swanson and Ramiller terms interpretative discursive activity), and the material activity (practical activities and objects). The discourse helps to interpret telehealth as integral part of the services to be offered in the information society, and more specifically in the context of other on-line services provided by the government. These interpretations are then enacted in practical projects (e.g. *NHS Direct*).

But the vision of information society itself is not just about cheaper telecommunications and delivering services electronically. It is about the fundamental nature of society, the dominant values and principles and terms in which citizenship will be defined. In this political discourse ethical dimensions are reflected in arguments about the potential of ICTs to improve quality of life and the efficiency and cohesion of our social and economic structures including in areas of health provision. Telehealth is thus often hailed as a way of making healthcare more equitable, particularly in terms of reaching across geographical boundaries. However, at the same time concerns are voiced about further exclusion of those without access to IT and skills to use it. The vision is also marred by tensions between different interests, for example, between citizens' right to (free) information and the protection of intellectual and institutional property rights. There are

⁵ This deadline has been now brought forward from 2008 to 2005.

also issues of patient and community confidentiality and individual autonomy and choice (Yach, 1998). Telehealth seen as information service (e.g. applications delivering health information over the Internet) is entangled in disputes about security, privacy and quality of information (Cerberus, 1997; Eysenbach and Diepgen, 1998; Hjelm, 1999; McKenzie, 1997; Morris, et al., 1997; Silberg, et al., 1997; Stanberry, 1998; Tyler, 2001) and beyond these – commodification of information. Our discussion of (some) of those concerns (we focus on social exclusion and patient/citizen empowerment), taken up in the following chapters, is informed by critical theory concepts introduced in the next chapter.

Summarising, the interpretation activities have produced varied meanings of telehealth. Within the organisational dimension telehealth is seen as an extension of IS and applied to improve co-operation between different parts of the NHS (and beyond it) and to re-focus care around patients. This organisational focus is linked to a medical one, as many of applications may have mixed medical and organisational aims (e.g. diagnosis of illness aided by ICTs and improving communication between primary and secondary care). Those services may be directed at socially excluded groups, and thus have community / societal dimension as well. Telehealth applications for delivery of health promotion and advice are often interpreted within strong concerns with information society, where telehealth is seen in terms of citizens' rights to quality health services and information (Morris, et al., 1997).

2.3.3 *Legitimisation activities*

The concepts of telehealth established (or rather forged) through the interpretation activities become concretised and tested in the legitimisation aspect of the organising vision. Proponents of telehealth make claims with regard to telehealth's medical, organisational and societal benefits and drawbacks. These claims are then tested (or not) in practice, mainly through evaluation exercises. This section lists the claims about telehealth and then discusses evaluation frameworks proposed. Because the nature of the claims spans all three dimensions (medical, organisational and societal) this section will not preserve this somewhat artificial division.

Policy documents, discussed in the last section, could be constructed as legitimisation activities, in so far as they promote telehealth as a solution to many ills of the healthcare provision, including varying service levels (due to geographical distances or diverse standards), long waiting times for services, over-reliance on secondary and tertiary sectors, lack of co-operation between different organisations, etc.

Legitimisation is also performed in more general texts discussing telehealth's potential benefits, problems with realisations of those benefits and possible negative effects (Darkins and Cary, 2000; McDonald, et al., 1997; Wootton and Craig, 1999). It is also undertaken by works surveying telehealth trials to demonstrate the current state of telehealth and to question validity of the claims made by its proponents (e.g. looking at reliability of trials' findings) (Collins, et al., 2000; Whitten, et al., 2000), or ones discussing evaluation practices and suggesting evaluation approaches and frameworks (Field, 1996; Lobley, 1997; Taylor, 1998a; Taylor, 1998b; Taylor, 1999).

It is often suggested that for patients, telehealth may offer the availability of better quality of care, enhanced sense of security (telecare), convenience and cost-savings, better level of service or better trained and supported personnel (thus able to provide better care) (Yach, 1998). It is argued that telecare allows greater flexibility and responsiveness, and enables the elderly to be cared at home (Coyle, et al., 1995; Sixsmith, 2000), as well as providing safety, security and health benefits (Sixsmith, 2000; Whitten, et al., 1998), and means of interacting in a client-centred manner, promoting client autonomy through education and improved communication (Warner, 1997). However intrusiveness and control aspects of telecare, its impact on patients and their carers' well being need to be considered (as early discharge of patients from hospitals may place additional burden on their carers), as well as issues of medicalisation and commodification of services (Fisk, 1995; Fisk, 1997). Nevertheless, Whitten at al. (1998) found that elderly patients were satisfied with home telenursing and that the technology itself was not important to them (was not a problem). Similarly, Erkert (1997) claims that elderly or disabled people are very pragmatic users of technology, and acceptance issues they face are no more complex than with other groups.

Beyond these claims, the rhetoric of patient/citizens empowerment is being employed in telehealth discourse, particularly within society context and policy agenda. Thus the

policy documents discussed previously create an image of empowered population served by informational resources, so they can make decisions about their own health and participate in the process of setting healthcare policy. These themes are taken up by Gann (1998) who although dismissing the cliché that information is power, nevertheless points out the importance of information for patient/citizen empowerment and social inclusion, and the opportunities IT offers for dissemination of information. Discussing potentials of ICTs in health, Milio (1992) argues that a group, rather individual, utilisation of new technologies offers most benefits for enhancing the health of communities. While Yach (1998) suggests a number of potential social benefits that might be realised through telehealth services. Such ideas, particularly the relationship between telehealth and the processes of empowerment and social inclusion (or exclusion) are further developed throughout our thesis. The theoretical discussion of empowerment and social exclusion is provided in Chapter Four.

Despite all this, McDonald, et al. (1997) point out that information on the benefits to patients is largely anecdotal and few issues have been explored with patients in any depth. Consumer and community voices are largely missing from public discussions about the extension of telehealth services and the range of needs experienced by communities. Many projects have minimal involvement of patient or consumer representatives on steering or advisory committees. Mair and Whitten (2000), upon conducting a systematic review of studies of patient satisfaction with telemedicine, concluded that all studies (32 were identified) reported good levels of patient satisfaction. However, as the authors point out the methodological deficiencies (low sample size, context and study design) of the published research limit the generalisability of the findings. Furthermore most studies were judged as rather superficial and did not try to address communication issues in depth, i.e. to consider the types of consultations most suitable for teleconsultations, the quality of interpersonal relationships with this medium, and possible effects on the doctor-patient relationship and on the quality of healthcare delivery. This view is supported by Collins, et al. (2000) who states that, with few exceptions, telemedicine satisfaction studies to date have tended to be small, anecdotal, and exploratory or feasibility studies lacking good quality rigorous evaluative data. Thus their generalisability is limited. Also, their reliability and validity may be questioned because they have failed to discuss the rationale for inclusion or exclusion of particular items within evaluation, and this evaluation is often conducted by the researchers involved in the projects. Many of

the projects reported were also operational for varying lengths of time, which further prevents a satisfactory analysis (Whitten, et al., 1998).

It is also often claimed that telehealth will benefit clinicians as they would be able to provide a better and more timely service, as telehealth will limit the variations in care and standards between regions, or by automating clinical documentation will reduce amount of administrative work needed (Calico, 1996). It can also facilitate peer support, education and skill support for more junior clinicians (Alusi, et al., 1997; Hjelm, 1999; Wallace, 1998). However, all these claims, as well as cost cutting potentials of telehealth are not well documented (AHRQ, 2001; Consortium for the European Commission Directorate General XIII, et al., 1996; Lobley, 1997; McDonald, et al., 1997). Only a few researchers attempt to conduct cost analysis, taking into account social costs and benefits of telehealth services, and considering other alternatives to telehealth. The results are not necessarily favourable to telehealth (Halvorsen and Kristiansen, 1996; Wootton, et al., 2000). Wootton (2000) concludes that the use of real-time teledermatology, in the context of a particular trial, was not cost effective for society in comparison with the conventional alternative. He points out that this may not be so in other circumstances, where distances to hospitals are longer and the telemedicine utilisation rates are greater, or when the equipment becomes cheaper.

Roine, et al. (2001) conducted a review of telemedicine literature in attempt to assess effectiveness and cost-effectiveness of telemedicine. They conclude that such evidence is still limited. They found relatively convincing evidence of effectiveness⁶ only in teleradiology, teleneurosurgery, telepsychiatry, transmission of echocardiographic images, and the use of electronic referrals enabling email consultations and video conferencing between primary and secondary healthcare providers. In terms of cost-effectiveness it seems that teleradiology can be cost-saving. Whitten, et al. (2000) attempted to conduct a meta-analysis of telemedicine projects with regard to costs associated with telemedicine. They conclude that they were unable to make conclusive statements about cost-effectiveness of telemedicine. This is because of the lack of any real data in most of the studies. Most reports of the results omitted important factors (e.g. number of patients and consultations involved in the trials), longitudinal data collection was nearly non-

⁶ It appears that the authors see effectiveness as judged by clinical outcomes and administrative changes.

existent and cost analysis lacked uniformity. Similarly, Hakansson and Gavelin (2000) report problems with published accounts of economic analysis and conclude that even when assessments were conducted, they were mostly limited to feasibility studies. Furthermore they pointed out that due to the broad scope of telemedicine it makes little sense to talk about its cost-effectiveness in general.

McDonald, et al. (1997) suggest that telemedicine demonstrated its ability to reduce costs in some managed settings such as home care, military establishments and prisons, but overall cost-effectiveness has not been proven (e.g. as applied to rural areas). Even where telecare is concerned, the limited research conducted points to some saving, though not necessarily for all kinds of users (Fisk, 1997). However, it is envisaged that telehealth linked to a range of other information technologies and integrated with traditional medical IS would be more effective and would help to improve the efficiency of healthcare (Balch and Tichenor, 1997; Directorate-General Information Society and Inmarsat Ltd, 1999; McDonald, et al., 1997). But by increasing access to telemedicine, it could still increase costs, for example due to necessity of following-up teleconsultations with face-to-face visits (Cross, 1998), expansion of treatment into areas where it is currently absent (Lobley, 1997), or due to inappropriate use of technology (by referring more cases than necessary in order to increase confidence) (McDonald, et al., 1997), or by involving more rather than less providers and procedures in the management of patients. Also, Taylor (1999) questions the belief voiced by some (Vierhout, et al., 1995; Wootton, et al., 2000) that 3-way telehealth teleconsultations (between consultants, patients and GPs) and online transfer of results would result in less referrals made by GPs.

All these opinions are still very much speculative. The experience of the *NHS Direct* exemplifies how predictions of cost-effectiveness may not materialise. A study by Munro et. al (2000) indicates that in its first year *NHS Direct* did not reduce the pressure on NHS immediate care services, although it may have restrained increasing demand on one important part, general practitioners' out of hours services. McInerney (2000) acknowledges this finding but suggests that this may be due to the NHS failure to market the services.

McDonald, et al. (1997) point out that difficulties encountered world wide have been to a large extent human, social and organisational, rather than technical. This view is echoed by others (Darkins and Cary, 2000; Wootton and Craig, 1999; Wyatt, 1998). Clinical medicine is considered inherently conservative (Sanders and Bashshur, 1995). There tends to be a low tolerance of disruption of practice routines. Clinicians may not be willing to accept a technology for which they do not perceive a need. Thus, it is important to investigate how telehealth fits in with organisational structures and relationships (or to what extent it may alter them), and with cultural beliefs and social norms (of clinicians and patients), and how it effects medical practice, the doctor-patient relationship, employment and job satisfaction. Tanriverdi and Iacono (1999) list technical, economic, organisational and behavioural knowledge barriers as inhibiting the diffusion of telehealth. Other problems include lack of technical and clinical standards (lowest acceptable level of performance for clinical use) and standardisation of clinical terms, protocols and format of medical records. If these are overcome there are still legal problems with liability, certification or credentialing, reimbursement methods, security and confidentiality of data (Stanberry, 1998). Wells and Lemak (1996) argue that challenge in telehealth utilisation has been not in initial adoption of systems but rather in their sustained use.

The legitimisation problems described in the literature summarised above are also discussed at the various telehealth (or as they are usually called telemedicine) conferences. The story that arises from these conferences is that telehealth is still an emerging discipline. The projects described are usually bottom-up and small scale. There are numerous problems with sustainability of projects once the funding runs out. Thus the workshop run during the 1998 'Telemedicine: A strategy for the NHS' conference concluded that a) there was a lack of understanding of telemedicine and issues involved; b) there was no coherent image of the telemedicine community; and c) a better dissemination of research results (e.g. as done by the Telemedicine Forum) and provision of information to patient groups were needed. Other challenges identified were: lack of central, integrated funding (there are separate budgets for General Practitioners (GPs), social services and district nurses – something which has been recently tackled by the government), different perceptions of telehealth services (substitute for existing ones or an additional service) and of the pace of technical change, etc. Question posed included: who are the patient groups most likely to benefit, what types of telecommunications

technologies will prove most useful, what are the likely barriers to implementation of home telecare strategies?

Two years later, and the doubts about the evidence of telehealth's benefits, particularly its cost-effectiveness, were cast again by Paul Taylor presenting at Telemedicine and Telecare in the NHS 2000 conference, while the panel discussions were dominated by potential implications of telehealth on workloads of different healthcare professionals.

Such discussions illustrate how the participants still battle to define benefits and costs of telehealth. What has changed in the last three years, is that there seems to be a greater understanding of issues involved. Most participants recognise the need for a holistic approach, where telehealth is integrated within day-to-day healthcare provision, and where the same technologies are utilised for a number of services to make them more cost-effective. Also telehealth is beginning to be seen in its national context, in the relation to the government's policies and strategies and wider local initiatives. No longer is telehealth seen as bridging only geographical distances, but also social, cultural and organisational boundaries. There are controversial issues remaining. As we have mentioned, the benefits of telehealth are still not proven in real life settings, particularly in urban areas, where benefits are not so clear-cut and alternative services are more readily available.

Evaluation

Central to legitimisation activities of telehealth is the discussion on evaluation. It addresses a vital question – how or rather by what means can telehealth be legitimised.

Telehealth services pose unique challenges for evaluators because they are not homogeneous, and the technologies used are often not well established and sometimes in prototyping phases. The dominant perception of telehealth that is revealed in published studies is still as a medical technology or treatment and this is reflected in both the content and methods of evaluation. Thus, the assessment is often limited to questions considering feasibility, clinical performance and safety, rather than asking to what extent an innovation may fit in with or change the process and the structure of health service delivery or the experience of patient groups (Lobley, 1997; Wallace, 1998).

As evaluation becomes debated in the literature and at the conferences (e.g. 'Telemedicine: A strategy for the NHS' September 1998 and 'Telemedicine and Telecare in the NHS' June 1999⁷), there is a particular tension seen between those who advocate evaluating telehealth projects through the strongest medical approaches, randomised controlled trials (RCT), and those who point out their limitations (Heathfield, et al., 1998; McDonald, et al., 1997).

The argument put forward against RCT is that this method does not allow for contextual, complex issues to be addressed (McDonald, et al., 1997), is difficult to generalise and has not yet provided any major indication of improved patient outcomes or cost effectiveness (Heathfield, et al., 1998). The conference participants suggested that RCTs are often flawed in their design, slow, expensive and providing only limited information. Due to the rapidly changing nature of technologies, it was felt that the 'principles', not the technology itself should be evaluated. Action research was presented as an alternative to RCT. Some pointed out the need to undertake evaluation of telehealth projects in their normal settings (rather than under laboratory conditions), focusing not only on the clinical or therapeutic outcomes but also on changes to work processes and institutional structures. On the other hand, trials' advantages were noted, particularly the opportunity to include standard criteria, which could allow for meta-analysis of results of different trials. However, as some of the participants pointed out, telehealth or even telemedicine is not homogenous or generic, and no one project may be used as a model or a 'gold standard' for other projects

Nevertheless, others see RCT as providing the strongest evidence of telehealth effectiveness as compared to case control studies and even more so to descriptive studies and expert opinions (Ferrer-Roca, et al., 1998). While one of our interviewee saw RCT as upholding the scientific values against commercial interests:

Randomised trials are used by the scientific community as a way of settling arguments. They are the 'golden standard'. I think it looks like in the US, telemedicine is much more commercially driven, and they have a different ethos and relationship with the commerce than we do in this country. I think that the way telemedicine is legitimised in this country and how it gains credibility is via scientific trials, not commercial interests. Scientific legitimisation is indeed what we would like. What many of us worry about is that driven by commercial interests telemedicine might be put to

⁷ Both organised in London by the Telemedicine Forum of the Royal Society of Medicine in association with the IHSM Telemedicine and Telecare Programme.

use untested, or when it is unnecessary, with unproven benefits. (Senior Research Fellow (Telemedicine), Royal Free Hospital and University College Medical School)

Summarising, it seems that some practitioners feel that RCT is the most important method ('the only one to assess impacts of telehealth'), others consider it just one of the methods that should be used, while others question the need for RCT altogether. Interestingly, our interviews revealed that the attempt to conduct RCT is, in some cases, motivated more by a desire to achieve credibility, as RCT is still seen as the established, 'scientific' method in a medical community. This would confirm research results in other IS domains that suggest the use of formal methods of evaluation for the purpose of legitimisation (Introna, 1997).

Taylor (1998a; 1998b) suggests that, in order to assess the value of telemedicine (the term he uses), it is necessary to consider effects on patient management and societal benefits. Based on a survey of telehealth systems and services evaluation, he constructs his own evaluation framework (Taylor, 1999). His approach suggests that assessment should consider if telemedicine is first safe, second practical and third worthwhile. Thus the focus of evaluation develops from the (technical) system, onto the services delivered and experienced, and finally to the health outcomes achieved. Field (1996) calls for evaluation to be considered as an integral part of project design, implementation, and redesign, and understood as a continuous learning process going beyond a single project. The suggested content of evaluation includes questions about the clinical process of care, on patient status, health outcome, accessibility, costs, and acceptability when compared to alternative health care strategies.

We argue that, as telehealth activity grows, it needs to address questions that go well beyond the medical or clinical context, and which develop from a concern with information society, and ones that reflect ethical dimensions of different traditions within telehealth. (We develop these points further and present an evaluation framework in our paper (Klecun-Dabrowska and Cornford, 2001).)

2.3.4 *Mobilisation activities*

In parallel to legitimisation activities mobilisation is taking place. Overall, the telehealth market is growing rapidly. In 1995, the estimated size of the world telehealth market was

\$21.23 million, with teleradiology and telepathology systems accounting for an additional \$55 million, and predictions of annual industry growth rates of 35% between 1997 and 2002 (Moore, 1999). The commonest applications of telehealth are in radiology, mental health, cardiology, ophthalmology, orthopaedics and dermatology (Craig, 1999a).

The National Database of Telemedicine (<http://www.dis.port.ac.uk/ndtm/uktm.htm>)⁸ lists 66 projects in the UK. However, as our research and the literature (Peppiatt, 2000) indicate not all the projects taking place are included in the database. Telehealth projects vary in type and scale, some are conducted by a single organisations, while others have many international partners.

Professional associations, conferences and journals offer a variety of forums for disseminating information about telehealth. It is interesting to note that even in the late 1980s it was difficult to publish research results of telehealth projects, at least that was the experience of one of our interviewees. This changed when the Journal of Telemedicine and Telecare was established in 1995 (published by the Royal Society of Medicine Press, London). There are handful of other journals the field, including two peer-reviewed journals: Telemedicine Journal, and Telemedicine & Telehealth Networks. There are also a number of trade magazines and newsletters, including Telehealth magazine, Telemedicine Today, and Telemedlaw (all three published in the USA). Articles related to telehealth now appear in many journals, either general, IS or medical, e.g. Communications of the ACM, JAMA, BMJ, as well as in the press. There has been a dramatic increase in such publication; according to Taylor (1999) a Medline search in December 1998 found 387 papers published on the topic in 1997⁹, compared to six in 1987. My own search on the 28th of March 2001, using the same search terms, resulted in listing of 4166 articles published over the years to date, in the year 2000 alone there were 678 publications.

We also increasingly see general IS conferences incorporating healthcare tracks or minitracks, e.g. European Conference on Information Systems (ECIS 2000 and 2001) or Hawaiian International Conference on System Sciences (HICSS 2001). There are also

⁸ Accessed on 08/02/00

⁹ The keywords used in this search were: telemedicine or teleradiology or telepathology or remote consultation.

conferences devoted to health informatics and telehealth (telemedicine and telecare) specifically, e.g. Healthcare Computing Conference and Exhibition HC2001, National Conference and Exhibition 2000, titled 'Healthcare Provision in the Digital Age', TeleMed - an annual conference run in London. Additionally, a number of conferences, which address the role of telehealth in the NHS, have been organised by the Telemedicine Forum of the Royal Society of Medicine. The growing interest in health informatics in the medical community is reflected in the popularity of the World Congress on Health and Medical Informatics (MedInfo).

Taken together, these conferences offer a platform for academics and practitioners to meet, exchange views, discuss controversial issues, and learn about different projects and products. Thus at such conferences all activities of the organising vision – interpretation (at least to some extent), legitimisation and mobilisation - take place. The list of participants in the NHS specific conferences attended by the researcher¹⁰ also demonstrates the multi-disciplinary nature of telehealth (and its different dimensions), and a presence of diverse groups of stakeholders. Thus, the representatives of academia were from medical schools, faculties of medicine from different universities, health informatics and information systems departments. The medical profession was represented by general consultants (e.g. A&E), radiologists, GPs and nurses. There were also a number of managers from NHS Trusts, as well as representatives of the government (from the Department of Health and NHS Executive). There were also healthcare and telemedicine consultants and representatives of different companies, including private healthcare providers, suppliers of telemedicine equipment and larger multi-facet businesses like British Airways and BT. Significantly, there were no representatives of patients groups.

This variety of media through which telehealth's research is channelled supports the claim that telehealth is viewed as a part of different disciplines. IS in healthcare (and health in IS) is gaining importance and within this field telehealth slowly establishes itself. It is being interpreted, legitimised and at the same time different sources become engaged in the mobilisation process. In medical and healthcare management circles telehealth is now routinely considered (or at least it needs to be according to government's

¹⁰ The researcher attended the following: Telemedicine: A strategy for the NHS (September 1998), Telemedicine and Telecare in the NHS (June 1999 and June 2000).

guidelines.) Yet posed with a question: Are people in the UK more aware of telemedicine now? - a member of the NHS Executive, Telemedicine Policy Team responded:

I think there is a greater awareness but it is still very patchy. There are forums that exist for discussing things, like the RSM Forum, UK Telemedicine Association. These are all full of enthusiasts, so it is all like preaching to the converted. I think there is still a large number of people who are unaware of what it is. I think generally if you talk to someone about telemedicine: 'Oh yes that's video conferencing'. And they don't see that it is a lot wider. [...] I think there is a lot of general public unawareness of what telemedicine is and its impacts. Telemedicine is one of those things, where it is an easy concept for the public to catch on without really understanding what it is. I think it is one of the areas if not the area of ICT that is explicitly mentioned in the Labour party manifesto. So at the end of the day it will no doubt happen because it is there.

It is worth noting that this interview was conducted in May 1999 and that the UK is a relatively late entrant to the field of telehealth. This is partly because of its geographical composition. Most areas are relatively well served by traditional health services and only some communities are remote. Distances to the nearest doctor or hospital are much smaller than in the USA, Canada or Australia.

In order to raise the awareness and provide advice about telehealth the government established Telemedicine Policy Team. Also, the government promised in *Information for Health* (NHS Executive, 1998) the establishment of the Modernisation Fund for the NHS, totalling £5b, with £1b allocated over the next few years to modernising the collection, storage and use of information. The recently published NHS Plan (DOH, 2000) pledges an extra £250m for IT investment and sets deadlines for the following services:

- Electronic booking of appointments to be in place by 2005.
- Access to electronic personal medical records for patients by 2004.
- The facility for telemedicine available in all health services by 2005.

However, the impact of the policies and strategies has been reduced, because although the policy papers and the IM&T strategy are keenly encouraging developments of telehealth, this has not translated into large-scale action by the government (i.e. government sponsored programs or large amounts of funding allocated specifically for telehealth). Large funds have gone only towards *NHS Direct* and A&E modernisation. The Telemedicine Policy Team has only two key workers and no financial means for supporting projects.

Telemedicine is quite high profile because of the government commitment to modernisation. And it is often quoted by both the Prime Minister and the Secretary of State for Health in terms of what they want to see happen. Having said that there isn't an explicit budget or a direct telemedicine initiative that has been sponsored by the government. NHS Direct is seen as a telemedicine project and that I think that's where their main focus and concentration is (NHS Executive, the Telemedicine Policy Team Member).

Nevertheless, we see mobilisation taking place on many levels, including organisational, inter-organisational and national, as well as in co-operation with other countries (usually European). As one of our interviewees suggested:

I think that the mixture of policy and business opportunities will eventually determine telehealth. [...] You've got to have both, the grand vision and local initiatives. [...] You have to recognise that there are market pressures at work, it's a complex process by which people adopt technology, and it very often happens through a set of narrow horizontal developments. (The Associate Director, Information Systems at Lambeth, Southwark and Lewisham Health Authority)

These activities are further discussed in Chapters Five to Seven, which examine the mobilisation process from the national health policy and strategy, local strategies and individual projects' perspectives. Chapter Five discusses an example of *Local Implementation Strategy* (LIS) developed for an area of London. LIS documents specify how the developments proposed in *Information for Health* would be implemented in a particular locality, and thus they play an important part in mobilisation activities.

2.4 Summary and conclusions – the compellingness of telehealth's organising vision

In this chapter we have tried to show how an organising vision of telehealth is being created. As we indicated, this is not a straightforward process, but one that happens within many dimensions and with changing significance over time.

This overview of telehealth leads us to conclude that in the UK, all activities of organising vision of telehealth are still taking place, particularly legitimisation and mobilisation. The telehealth community, although expanding, is still fairly small, populated by enthusiasts from different disciplines, including IS and medicine, trying go beyond a 'pioneering phase'. Most projects are run as research rather than service-based projects (Curry, et al., 1997a; Peppiatt, 2000; Wallace, 1998). The community is still striving to define its place, to make telehealth more visible. The government's interest in telehealth is helping to raise the awareness.

Swanson and Ramiller (1997) list different characteristics of organising vision that contribute towards its overall compellingness. We use this list here to assess the compellingness of the organising vision of telehealth.

How compelling people find the rhetoric of the organizing vision is an index of how well the organizing vision informs (i.e., supports interpretation) and persuades (induces legitimization). [...] we speculate that the organizing vision's compellingness is a function of several things, including: its distinctiveness, which is key to its ability to attract and hold people's attention; its basic intelligibility and informativeness, which are determined by the richness and coherence with which it is spelled out; its plausibility, or fit to broader, pre-existing frames for thinking in the relevant domain of application; and of course its perceived practical value, which is determined relative to social and material contexts and in the light of mobilization activities. All these factors may vary over time, and as they do so, the overall compellingness of an organizing vision rises and falls. (Swanson and Ramiller, 1997 p 469)

Over the years, the organising vision of telehealth has managed to put across a distinctive (but a bit confused) message. The most overriding expectation is of telehealth having a potential to improve existing services and bring new ones to individual patients and populations. This is often coupled with claims of cost efficiency and effectiveness. Thus the organising vision proposes telehealth as a solution to (all) problems (in healthcare). It also promotes telehealth as the 'future of services'.

Initially telemedicine was the sole focus of the vision and still different (but co-existing and interwoven) concepts of telehealth are present: technological, medical, organisational (information systems) and social (information society). These often raise different expectations of telehealth and result in different interpretations and applications.

Thus the technological dimension embodies the focus on creating new and exciting technologies. It co-exists with a medical dimension that seeks medical solutions to health problems. Both culminate in high-tech applications in highly specialised fields, e.g. teleradiology and tele-operations (performed by junior consultants remotely supervised by specialists or conducted by a remotely controlled robot) (Meek, 2001).

In parallel to these, the organising vision of telehealth is also developed in a broader social context. It is directed at wider often disadvantaged groups or populations (e.g. disadvantaged geographically or through an illness) and aimed at addressing their health and social problems. For example, services, like teleradiology are intended to make specialist care more accessible, while patient-centred applications, e.g. for diabetes

sufferers, aim at facilitating self-care and providing social support (e.g. through e-forums). More generally, the societal vision of telehealth promises the delivery of informational resources to the population to manage their own health, and to participate more actively in the healthcare process.

The organisational dimension (telehealth as an information system) promotes telehealth as having potential to alter the structure of healthcare delivery and the process by which patients are cared for (Smith, 1997; Wallace, 1998). For example, by supporting primary care workers, as well as facilitating inter-disciplinary and inter-organisational provision of care.

These different dimensions suggest that the organising vision is not set once for all. Not only does the vision's visibility (and coherence) change, but its nature (i.e. its message) may alter as well, and telehealth may acquire alternative (or complimentary) meanings. This is acknowledged by one of the researchers interviewed:

The thing is the history of telemedicine understandably was developed to overcome genuine problems of geographical distances. People used to think about this as being the same medical service delivered by a different vehicle. What we have realised is that the actual vehicle changed the product. In fact it may be as beneficial to overcome communication problems just as an application to overcome geographical distance. (Senior Research Fellow (Telemedicine), Royal Free Hospital and University College Medical School)

But we also see that, up to the late 1990s, the organising vision has failed to inform (or convince) the wider population in the UK (including health professionals) about potentials of telehealth. One reason for this lack of informativeness might have been the way the organising vision was constructed, its message diminished by the confusion about telehealth's boundaries and terms used to describe it. More fundamentally, perhaps, the problem lied with the nature (core) of the message. Perhaps, its plausibility was (and still is to some extent) undermined because it does not fit broader, pre-existing frames of thinking (e.g. does not fit the organisational context) and its practical value (social and material context) was hard to sustain (e.g. due to costs of equipment and communications amongst other problems). However, telehealth has increasingly gained plausibility in relation to discourse of empowerment and social exclusion, as well as through trends towards health promotion and primary-care based services. Its practical value has increased due to technological developments, resulting in better quality and cheaper equipment and communications. The vision has also utilised an argument of

cost-effectiveness in the face of ever-increasing costs of caring for patients. These changes produced circumstances in which the organising vision could (relatively) thrive again.

Nonetheless, the arguments about benefits of telehealth do not appear to be resolved, beyond evidence presented by a few predominantly small-scale projects. Legitimisation activities are not over yet. It seems that without results from larger-scale projects based on RCT (or at least some sort of rigorous evaluation) many practitioners and health managers will not be convinced of benefits of telehealth (and indeed the promised benefits may not be there). On the other hand, small, low budget projects whose benefits will be evident from practice, rather than through formal evaluation, may provide an alternative (or complimentary) avenue.

Despite this, although the government indicated the need to further demonstrate the practical value of telehealth¹¹, its policies are based on the assumption that telehealth *has* a practical value and it just needs to be actualised. For example, the government's requirement of considering telehealth in local implementation plans will force the NHS trusts to consider telehealth applications (at least superficially, to satisfy the requirement).

So, overall is the organising vision of telehealth compelling? The answer is more so now, than before. Certainly it has gained far greater visibility (and to some extent informativeness), particularly through the policy process, and the legitimisation and mobilisation processes have been intensified.

One could also suggest that its compellingness as a research subject has increased greatly, thus making this thesis particularly timely. The remainder of this thesis takes further the investigation of telehealth as emerging phenomena initiated in this chapter. It explores what meanings telehealth acquires in interpretation, legitimisation and mobilisation activities undertaken in policy and practice. Drawing on those meanings, it then considers the validity of some of the legitimisation claims made, particularly as to empowering and socially inclusive potentials of telehealth. In conducting this analysis it draws on critical theory concepts and adopts hermeneutics as the overall research

¹¹ In answers to parliamentary questions, the government spokesman re-iterated that telehealth services will only be introduced where there is clinical need and evidence from research and evaluation indicates that it is appropriate to do so. (Baroness Hayman, Hansard 1998).

method. The theoretical foundations and methodological concerns are addressed in the following two chapters.

CHAPTER 3

A critical approach to telehealth

This chapter presents the philosophical assumptions underpinning this thesis. These are discussed at some length, recording the journey the researcher undertook reflecting upon her ontological assumptions, and to critically review different theories. The importance of this chapter is threefold. Firstly, the theories reviewed in this chapter have influenced the whole research effort and thus form an integral part of this thesis. In writing this chapter, the researcher was forced to face her assumptions and to elucidate her view of the world (*weltanschauung*) and thus to become more self-reflexive. Secondly, this explication of the researcher's theoretical standpoint gives the reader a point of reference against which he/she can judge this work, either as a fellow believer in critical theory tenets or a follower of a different paradigm. Finally, the theories in which this thesis is grounded increase the researcher's understanding of processes of development, adoption and use of technological innovations, as well as issues of empowerment, power and social exclusion, and thus hopefully support a better account of telehealth.

The chapter opens with the discussion on alternatives to the scientific paradigm in information systems research. Then, the main tenets of critical theory - this work's chosen theoretical approach - are outlined, and the relationship between critical theory and interpretivism is discussed. This is followed by a more in-depth consideration of ideas developed by Horkheimer, Adorno, Marcuse and Feenberg and their relevance to the field of telehealth. More recent theories are also discussed, including post-industrialism, post-modernism, post-structuralism and information society theories. Finally, critical theory is re-visited and its validity and currency is discussed in relation to these theories.

3.1 Introduction to theoretical position

Broadly speaking research into telehealth could focus on the creation and development of technologies, the process of adoption of telehealth in organisations or adopt a broader perspective viewing telehealth in the societal context. In this research we have adopted such a societal focus. This means that although we are investigating small-scale projects, our analysis goes beyond local issues and considers telehealth in the context of society. This research strives to understand not only how telehealth is being developed but to what purpose, and whose voices are being represented in creating its meaning. It considers telehealth in the context of national health policy and the aims of bringing quality care to everyone regardless of their social class or geographical location, empowerment and social cohesion.

We describe the process of finding the focus for this study and the relevant theory at length because during that period our own views became formed. Critical theory was not chosen lightly or by accident but through thorough research into available alternatives. We would also like to make a point that different approaches can offer different insights and often (although of course not always) can be complementary. This is particularly true of approaches that are based on similar ontological assumptions. For example, we started our search for insights into the area by reading constructivist studies of technology literature. Although, ultimately a critical approach is adopted, different schools within constructivist studies of technology (or as MacKenzie and Wajcman (1985) call it – the social shaping of technology movement) are discussed (refer to Appendix A). This is because they provide complementary views on the subject and re-enforce the point that technology is socially shaped rather than pre-defined or autonomous.

According to Hope (1996, p 57) “Critical theory is not a scientific paradigm. Rather, it is a reflexive and politically inspired mode of enquiry, which is sensitive to the discontinuities and conjunctures of history.” Is this then, a valid approach in information systems research?

Galliers (1985, 1991), and Galliers and Land (1987) argue that the scientific paradigm is not the only valid approach in research of information systems. Indeed, other less traditional approaches may be more applicable in many circumstances and research methods must then consider the nature of their subject matter and the complexity of the real world. In order to illustrate their point and to assist researchers in their choice, the authors compiled a taxonomy of IS research approaches. The taxonomy divides approaches into two categories: 'empirical' and 'interpretive' and identifies the situations in which individual approaches are best suited for the general topic area. Galliers (1985) argues that there is an urgent need to broaden our understanding of technology utilization and its impact on organisations and society as a whole. To achieve such understanding varied research methods should be applied depending on the different content and context as well as aims/objectives of the research. Since the publication of these papers their call has been taken up by many researchers in the IS community, including the author of this thesis. For example, Lyytinen and Klein (1985) propose the critical approach as a plausible alternative to the hard science approach (see section 3.2.6 for discussion of critical theory in IS).

We do not wish here to re-iterate the positivism versus interpretivism debate. Arguments for interpretative approach are more than adequately articulated in the papers discussed above as well as various other works (Fitzgerald and Howcroft, 1998; Guba and Lincoln, 1994; Klein and Myers, 1998; Lee, et al., 1997; Walsham, 1993; Walsham, 1995). Anyway, as Robinson and Richardson (1999) argue, such polarisation of debate between positivism and interpretivism may not be the best way forward. They articulate problems with the both philosophical views and present an alternative, Marxist-based, critical approach. Such a critical approach is gaining recognition in IS field. However, most of the recent works in critically informed information systems research have been concerned with Habermas' writings (Hirschheim and Klein, 1989; Hirschheim and Klein, 1994; Lyytinen, 1992; Lyytinen and Klein, 1985; Ngwenyama, 1991; Wilson, 1997). By going back to Frankfurt School theorists (Horkheimer, Adorno and more recently Marcuse) and their modern students (mainly Feenberg) we hope to draw attention to these works and demonstrate their relevance to IS.

Our research is guided by the critical theory position on technology articulated by Feenberg (1991, p 14):

The dominant form of technological rationality is neither an ideology (an essentially discursive expression of class self-interest) nor is it a neutral requirement determined by the “nature” of technique...Critical theory argues that technology is not a thing in the ordinary sense of the term, but an “ambivalent” process of development suspended between different possibilities. This “ambivalence” of technology is distinguished from neutrality by the role it attributes to social values in the design, and not merely the use, of technical systems. On this view, technology is not a destiny but a scene of struggles. It is a social battlefield, or perhaps a better metaphor would be a *parliament of things* on which civilization’s alternatives are debated and decided.

This definition sets out the challenge for this research, i.e. to explore the ambivalence of technology and its different potentials. Chapters Five and Six show how different meanings of telehealth are forged in national and local polices and strategies. Chapter Seven records the struggles undertaken at the project level. The last chapter brings the findings together, illustrating varied potentials of telehealth that may be harnessed for emancipatory aims, and showing how structures (e.g. policy, organisational structures, social trends) may condition and constrain developments in telehealth.

3.2 Critical Theory

3.2.1 *Introduction to critical theory*

Critical Theory cannot be described in a few pages. Perhaps the term theory is misleading – critical theory is not homogenous and those who are classified as critical theorists did not present a unified front. Immediately, we can distinguish two different traditions concentrated around the Frankfurt School and more recent work of Jurgen Habermas. Writings of critical theorists are diverse, covering many disciplines. For example, Adorno was a philosopher, sociologist and musicologist while Friedrich Pollock was an economist, and specialist on problems of national planning. Nor would this researcher claim to grasp all the varied concepts put forward by critical theorists, as they often presuppose extensive knowledge of other philosophers’ writings. Nevertheless, the researcher believes that she has gained sufficiently in-depth understanding to be able to conduct the research and interpret its findings.

Critical theory rejects the tenet of traditional science that the researcher needs to take a role of an uninvolved observer and his or her work should be free of value judgement. Its origins are in the objective idealist tradition. Critical theorists attempted to develop

further the concept of critique by exploring the conditions and limits of reason and knowledge (Kant), reflecting on the emergence of spirit (Hegel), and focusing on specific historical forms, e.g. capitalism (Marx) (Held, 1980).

Meaning, in the critical tradition, defies the positivist imperative of reducing it to structural variables. At the same time, by referring to normative values, it goes beyond relativist interpretations. The central idea in the critical perspective is that all social phenomena are historically created and conditioned. Social conditions, often constraining emancipation and limiting one's potential, are created and recreated by man. They cannot be easily changed because they are related to structures, which are historically constituted. These ideas are echoed in Giddens (1984) notion of duality (agency and structure). Nevertheless, critical theorists aim to support people in the realisation of their potential and, through altering dialectic relations, influence structures that limit them. Traditionally, critical theorists aimed to unmask the essence of capitalist society and encourage social change through a revolution of consciousness. Thus, the first step of opposing oppression is realising that one is actually being oppressed. (This is increasingly difficult, as modes of oppression have changed, and the capitalist system is based on creating and then fulfilling our desires. The problem lies in that these desires are often 'false', inducing the need for consumerism lifestyles and side stepping the issue of happiness (Marcuse, 1970).)

3.2.2 *Critical theory and interpretivism*

Critical theory is seen as either a separate paradigm (Burrell and Morgan, 1985) or as a type of interpretative research (Alvesson and Willmott, 1992; Denzin and Lincoln, 1994). For example, Burrell and Morgan (1985) situate critical theory in the 'Radical Humanist' paradigm (in the subjective quarter of the sociology of radical change) within their framework of sociological paradigms.

These different views tend to depend on different definitions of interpretivism. Thus, interpretivism is sometimes defined as a paradigm, encompassing ontological and epistemological assumptions, or as an epistemological stance and/or a methodology, also as an umbrella term for qualitative research (Denzin and Lincoln, 1994).

In order to discuss the relationship between critical theory and interpretivism it may be useful to provide a brief introduction to interpretivism. Its underlying tenets are that social reality is socially constructed and thus it can be interpreted in many different ways. A social scientist is not an objective observer - his or her priori knowledge and system of beliefs may effect the outcome of the study or even alter the system being studied (Hills, 1997). This implies that the application of scientific methods alone are not valid for studying social phenomena and that a claim of repeatability, reductionism and refutability of findings cannot be made unreservedly. Rather, the researcher attempts to understand and explain the social world primarily from the point of the actors directly involved in the social process. The philosophical base of interpretative research is then hermeneutics and phenomenology.

Robinson and Richardson (1999) point out that the most radical interpretative school, which believes that subjectivity is all that constitutes the world, is rooted in solipsism. By defining 'reality' as existing only in each individual mind and leading to constant multiple re-interpretations of the world, it cannot offer a consistent position by which one lives one's everyday life.

The other position within interpretivism asserts that an external reality can exist, but is unknowable independently of human sense making. This view is gaining hold in IS research but it faces three related problems: the nature of its knowledge claims, the explanation of the determinants of human subjectivity, and inability to go beyond the reflection of reality in terms of meaning to see the world as a whole, with both subjective and objective elements (Robinson and Richardson, 1999). Thus if everything is relative how can a researcher claim that his/hers interpretation is better than others, and if such claims cannot be made why should we be interested in just another story? (Refer to Walsham (1993) for his arguments on validity of claims).

Robinson and Richardson (1999) argue that research in IS, particularly critical research, should be based on conceptualisations that both integrate and distinguish subjectivity and objectivity, where objectivity has to be the original and dominating moment in this unity, and that a theory of knowledge acquisition has to be both social and dialectical.

In information systems research, critical theory is often seen within the interpretivist framework. For example, Boland (1985) draws no clear distinctions between phenomenology and hermeneutics and infuses them with critical thinking. Lyytinen and Klein (1985) see critical theory and interpretivism as complimentary, that is they argue that hermeneutic and interpretative methods should be applied in critical research (although they see empirical methods as valid too). Walshaw (1993) sees both phenomenology/hermeneutics and critical theory as theoretical perspectives contributing to interpretative research. On the other hand, Orlikowski and Bauroudi (1991) argue that interpretative and critical philosophies are distinct, pointing out the lack of evaluative perspective in interpretivism. Jonsson (1991) also identifies positive, interpretative and critical approaches as three broad types, or philosophies, of research approaches.

Summarising, the arguments for seeing critical theory within the interpretivist paradigm are twofold: pointing out similarities in philosophical assumptions of both approaches, or considering hermeneutics as a methodology that can be applied to critical research. We accept the second argument without reservations. In this research we use hermeneutics as a methodology within a critical approach. We also believe that on the ontological level both theories are complimentary. Nevertheless, we believe that they do differ on a number of points, mainly normative stance and the different (although not totally opposite) relation to reality and subjectivity (we have elaborated these points above). In essence, critical theory attempts to avoid interpretivist reduction of explanation to meaning descriptions, and also the positivist search for general laws, based on cause and effect.

It is then helpful to distinguish between research that applies critical theory tenets (e.g. concepts regarding the nature of society, technology and human consciousness) and critically informed research, e.g. critical ethnography, that adopts the normative stance and some, but not all, of the concepts. (One could argue that critical theory is heterogeneous and thus it is impossible to strictly define critical theory-based research.) This research falls somewhat between the two categories. It is more closely based on critical theory, than critical hermeneutics or critical ethnography, but perhaps falls short of being ‘true’ or orthodox critical research (particularly in that it does not directly culminate in action towards emancipation).

3.2.3 Critical theorists

Habermas

Currently the works of Habermas are enjoying increasing popularity; perhaps because he seeks to construct a universal theory, not only to pose questions but to provide (some) answers. It is difficult to summarise his diverse works in few sentences. It could be said that Habermas seeks to incorporate central notions of hermeneutic tradition within the bounds of critical philosophy. Thus his works are often seen as an extension of hermeneutics (Jerald, 1990). His main concerns are the problems regarding the nature of communication and self-consciousness and their role in the causation of social action.

His early work (1972) elaborates the theory of *knowledge-constitutive interest*. He proposes that there are three means (media) by which human beings transform the world, i.e. work/labour, communication/language/interaction and power. These give rise to three cognitive interests, inherent in all human beings, i.e. technical, practical and emancipatory interests. In turn, these interests form the basis for three types of theory, all necessary for human development; these are empirico-analytic sciences, hermeneutic sciences and critical sciences.

Thus, Habermas constructs a broad framework for classifying research according to interest. The emancipatory interest is concerned with elimination of distortion from interaction and communication. The critical sciences based on the emancipatory interest help to reveal and correct these distortions. The final goal is equal participation for all concerned in the decision-making process - through emancipation. In his later work Habermas develops a theory of *communicative action*. He proposes four conditions of ideal speech situation, that is “validity claims of comprehensibility, truth, truthfulness, and rightness” (Habermas, 1979 p 3). “Whereas the theory of knowledge interests focuses on the origins of distorted communication, the theory of communicative actions shifts the emphasis to the most general conditions of intersubjective communication as such” (Morrow and Brown, 1994 p 151).

However insightful Habermas theory is, it seems to us over-reliant on linguistics (representing what is called ‘a linguistic turn’ in critical theory¹²). Although language and more generally communication play an extremely important role in formulating our understanding of social reality, it is my belief that other aspects of such reality, e.g. social structures (families or organisations), power (beyond its manifestation in language, e.g. through direct actions or policies), ‘means of production’ or technology deserve equal attention. Although one could argue that language forms conditions of our self-consciousness and thus social reality – this hypothesis is not explored in this thesis. In addition the separation of different knowledge interests seems to be somewhat arbitrary.

Furthermore we subscribe to Feenberg’s (1991; 1999) critique of Habermas’ over-reliance on claims to rationality. His essentialist treatment of technology and other forms of technical action implies that technology is (in some sense) neutral. Although Habermas agrees that technological development is influenced by social demands (thus by no means subscribing to simple technology deterministic view), he does not believe in the notion that there are a variety of technical rationalities and that technology’s essence itself can be changed. This is a position we disagree with, accepting contrary arguments developed by Frankfurt School theorists (particularly Marcuse) and later on by the constructivist studies of technology. Further critique of Habermas, particularly his theory of knowledge constitutive interests, on which the majority of (at least early) critically-lead works in the information systems discipline are based on, comes from Clarke (2001). Clarke suggests that this choice may be simple ‘temporal convenience’ rather than a result of thorough examination of alternatives. He claims that the theory supports a predict and control approach that perpetuates a view of human domination of nature, in contrast to a more ecologically friendly stance of the Frankfurt School theorists.

The Frankfurt School – Horkheimer and Adorno

The Frankfurt School’s representatives are credited with the initial development of critical theory in the 1930’s, drawing on German idealist thought and Marxist tradition (Held, 1980). They were concerned both with interpretation the relationship between the

¹² ‘Linguistic turn’ in philosophy is associated with continental hermeneutics, structuralism, pragmatism, and Wittgenstein’s theory of language; it rejects the traditional subject-object polarisation in favour of the primacy of an interactional subject-subject model (Morrow and Brown, 1994). It may involve study of language use and communicative practices in ‘real’ social settings.

individual, society and nature, the meaning of culture, etc. but also with transformation of the conditions leading to oppression. Such a revolution, aiming at changing existing political and economic conditions was to be achieved not through a military effort but through critique and self-discovery. Thus for Horkheimer, Adorno and Marcuse the process of liberation entailed a process of self-emancipation. What they sought to show is that socially created rules and conventions are only portrayed and perceived as the natural order of things and equated with natural laws. Essentially things do not have to be as they are. They can be changed. And yet, they showed how those choices are progressively limited by the conditions in society. For example, Horkheimer and Adorno (1972a [1944]) expose as false the Enlightenment claim to free people from myths. They point out that old myths were replaced by new myths – the product of instrumental rationality. Reason, by becoming universal, overreaching and removed from specific situations and things, stopped serving humans in their quest for freedom and happiness and became an end in itself.

We see a reflection of this problem in the rationalisation of medicine, concentration on the 'body' and the disease rather than a human being, resulting in the substitution of care with treatment and de-humanisation of services (discussed in Chapter Two). Telehealth, seen as a collection of technologies that can be applied to increase efficiency (efficiency of diagnosis or more generally of healthcare services), may re-enforce these trends. To avoid following 'instrumental reason' and applying 'technological rationality' we need to explore alternatives to technology (e.g. making organisational changes, introducing community-led projects that do not focus on technology).

Extending such ideas from 'Dialectic of Enlightenment' Adorno (1991), in a number of essays, provides a critique of the culture industry. He paints a vision of a monolith culture – bridging the differences between high and low culture and as a result – resulting in dumbing down, conformist culture for masses (but not mass culture, i.e. not produced by masses). Such culture is aimed at pleasure rather than happiness, satisfaction rather than reflection and ultimately what it offers "is freedom from thought and negation" (Adorno, 1991 p 167). It also closes the possibilities of other realities or at least makes them appear to be unattainable.

3.2.4 Critical theory and technology – Marcuse and Feenberg

Marcuse builds on works of Horkheimer and Adorno. In his essay ‘Some social implications of modern technology’ (1987) he argues that the development of modern industry and technological rationality undermines individuality and critical reason and submits the individual to increasing domination by the technical-social apparatus. In ‘One-dimensional man’ (1970) Marcuse considers the notion of human personality and the totality in which it is located, as well as modes of repression. He argues that a modern technological society is essentially totalitarian and its institutions are used to limit freedom, repress individuality and the scope of human experience. The base of domination shifts from personal dependence (master-slave relationship) to dependence on the ‘objective order of things’. “Scientific-technical rationality and manipulation are welded together into new forms of social control” (Marcuse, 1970 p 121). Technology as a political force is aiding this process. The separation (seemingly?) of facts and values, the ‘neutrality’ of science effectively freezes social reality, and thus serves the existing order. Our subjugation to consumerism makes us blind to alternatives. Self contained and self-perpetuating, the technological world allows change only within its realm, “... thus emerges a pattern of *one-dimensional thought* and *behaviour* in which ideas, aspirations and objectives that, by their content, transcend the established universe of discourse and action are either repelled or reduced to terms of this universe” (Marcuse, 1970 p 27). In one-dimensional society people lose their abilities to discern more liberating possibilities and engage in transformative practices. This is because the society shapes their aspirations, hopes, fears and values and distorts needs (manipulating our true or vital needs and creating false needs).ⁱ Thus, meanings we give to telehealth are restricted to our own experiences and are governed by ‘technological attitude’.

Marcuse’s criticism is also directed at the dominant modes of research and philosophy which take the existing society as their unquestioned frame of reference thus both narrowing the scope of study and sometimes influencing (closing) its findings. This criticism applies to the majority of research in IS, based as it is on managerialist assumptions.

Nevertheless, as Kellner (1984) argues Marcuse’s theory, however bleak, should not be viewed as a negation of any possibility of change, and as a total, absolute co-option of

forces of conflict or criticism into the prevailing reality. This denial of total one-dimensionality is hinted in the ‘One-dimensional man’ and more forcefully argued in his later writings. Nor is his account a-historical. Marcuse although often accused of lack of historicism (Offe, 1988) and charged with technological determinism does not remove the technology from its social reality. He believes that the capitalist mode of production helps to structure science, technology and technological rationality. Thus he does not perceive technology as autonomous but as an instrument of social control and profitability by the ‘vested interests’ which control society. In his later writings he champions the idea that technology (radically reconstructed) could become a positive force that can be applied to free people and make possible the reconstruction of new society (Kellner, 1984). But this radical reconstruction demands a reversal of both the ends of technological progress and the very forms of technology. He creates a vision of full automation that frees people from oppressive labour and helps to create a post-scarcity society. However this vision becomes somewhat utopian and rather vague when describing how this new society is to be achieved.

Yet Feenberg (1988) believes that Marcuse’s theory can serve as the basis for constructing a solution which avoids the excess of both utopian technophobia and uncritical acceptance of given technology as fate. He articulates this as the need to contextualise technologies taking into account more and more of the essential features of the object, bringing together its many dimensions. In Feenberg’s (1988 p 253) own words:

... the essential flaw in scientific-technical rationality, by which it is bound to biased application, lies in its reified decontextualization of the objects it constructs. Thus it should be possible to at least advance toward a new technology by multiplying the contexts and technical systems that interact in any given application to take into account more and more of the essential features of the object. The initial steps in this direction are obvious and concern the integration of ecological, medical, aesthetic, and work-democratic considerations into the existing technologies to begin the movement toward a better society. Thus just as technical practice now incorporates the requirements of domination in its basic structure, in a free society it would instead incorporate the requirements of peace and freedom.

3.2.5 Critical theory and information systems

In the field of information systems the call to follow emancipatory principles of critical theory have been explicitly voiced by a growing (although still somewhat limited) number of researchers (Doolin and Lowe, 2001; Hirschheim and Klein, 1989; Hirschheim and

Klein, 1994; Jonsson, 1991; Lyytinen, 1992; Lyytinen and Klein, 1985; Myers and Young, 1997; Ngwenyama, 1991; Saravanamuthu and Wood-Harper, 2001; Wilson, 1997) and others. In addition there is an increasing body of work that, while not referring explicitly to critical theory, nevertheless undermines positivist approach to understanding information systems and proposes more ‘progressive’ accounts of IS development (Checkland, 1981; Hirschheim, et al., 1984; Kling, 1996; Mumford, 1983; Mumford, et al., 1985). However, Soft Systems Methodology and socio-technical approach are criticised for their inadequate treatment of conditions conspiring against elicitation of everyone’s views (e.g. due to unequal resources, power, capabilities, etc) and reaching true consensus.

Here we discuss works devoted to application of critical theory in IS. Lyytinen and Klein (1985) propose the critical approach as a plausible alternative to the hard science approach in information systems research. Their argument stems from a belief that the social nature of information systems calls for other then engineering approaches. From an ontological point of view they claim that information systems do not constitute an objective reality but are formed by knowledge rules, and therefore conditioned by their own social history. Critical theory can help to provide a broader approach to information systems, taking into account social aspects such as user resistance, alienation, uncontrolled development and lack of use. Furthermore, it provides ethical underpinnings for information systems research, seeing emancipation as the objective of knowledge. Thus according to the authors:

The purpose of information systems research is not to inform fellow researchers of ‘Universal’ laws. But it can help systems analysts and users to inform and help themselves. (p 230)

Ngwenyama (1991) advocates a more systematic application of critical theory to information systems research and considers the reasons for its relative neglect in our field, that is, a radically different position and different language. He discusses the main concepts behind critical social theory and its application to information systems research and practice. He then outlines a methodology for practice-oriented research. By demystifying critical social theory he aims to open the discourse on the subject. He urges researchers to focus on more practical concerns rather than limit discussions to abstract philosophical ideas. He sees the moral stances of critical theory as one of its strengths.

Lyytinen (1992) gives an excellent overview of information systems' works that are informed by critical theory. He asserts that the applications of critical theory in IS can be divided into the following three categories:

1. criticism of the underlying instrumental rationality bias in information systems, and their 'management ideology';
2. criticism of the dominating research canons and the imperfections of the 'scientific' programme; and
3. classification and criticism of existing 'technology-driven' development models and the exploration of alternative approaches to develop and use information systems. (p 168)

Lyytinen (1992) points out shortcomings of critically informed work in the IS discipline; these have also been noted by us. Firstly, overall critical theory had a very modest impact on IS research. Secondly, the majority of studies have been observing imperfection in the existing research by applying basic elements of critical theory to IS. Acknowledging this dearth of critical research in IS, Hirschheim and Klein (1989) resolve to write a hypothetical 'story' about critically-lead IS development with a systems analyst assuming a role of an emancipator. Despite, offering interesting insights, we believe that their paper follows too rigidly the three knowledge interests introduced by Habermas, and as a result it creates an artificial dichotomy between them. For example, it advocates application of functional approach to the technical knowledge interest (related to work/tool making).

Since Lyytinen and Hirschheim & Klein wrote their papers critical theory has gained a foothold in IS research. For example, the 1st Critical Management Conference in July 1999, Manchester, included an Information Technology and Critical Theory stream and in July 2001 an international workshop on (Re-) Defining Critical Research in Information Systems took place in University of Salford. In the information systems discipline, critical theory has been receiving increasing recognition in the area of IS design, particularly within the participatory design (PD) movement (Asaro, 1999; Waring, 1999).

Although Howcroft and Wilson (1999) do not explicitly refer to critical theory, they evoke its spirit when criticising traditional PD approaches. They emphasise conflict rather than consensus, pointing out that true participation is hampered by lack of shared goals, different stakeholder interests and different levels of power and Machiavellian

techniques employed by management and IS professionals, etc. Asaro (1999 p 2) goes further, stating:

... PD and its related methodologies are best understood as models of the integration of technological practice into social critique. Rather than seeing PD as merely the insertion of public dialog within technological design practice ... we should see it as an exemplar of a critical practice of designing technological systems.

This is an important point that can be equally applied to telehealth technologies and services, suggesting the supremacy of social aims over technical goals, and demanding real commitment to those aims, rather than a nod towards them.

Asaro (1999) also points out that in the design process there will be other values of feasibility, utility and efficiency in play, and competing with democratic ideals. Thus, critical research, apart from promoting abstract democratic ideals in general, must identify common problems faced in such contexts, and search for ways of resolving them. What is more, Asaro maintains that we cannot just state that these issues can only be sorted out locally, but rather we must seek to create bridges between the problems and conflicts of local contexts and a global discourse of ideas, principles and methods, which can be utilised in a variety of local contexts.

This is an ambitious programme, one that (with great limitations) we have decided to undertake in this PhD research. Thus we seek to link local experiences of telehealth projects, strategies of different hospital and community Trusts to national health policies, and to extend locally-based observations and suggestions to more general principles.

Furthermore Asaro (1999) points out that, in the context of IS development, there is no clear-cut interpretation of what is useful or efficient. Such problems are even more obvious in the healthcare domain. The problems of what is efficient and effective are difficult to establish and taking shorter or longer-term views may produce different answers (e.g. asking GPs to be present during teleconsultations between their patients and a specialist is clearly not cost-efficient but perhaps it may result in a more fruitful consultation, better patient management and better informed GPs.)

Despite increasing interest in critical theory in the IS community, there are very few papers describing actual applications of critically led projects. One such example is

delivered by Waring (1999) describing procurement processes at an NHS trust. In this case study, problems of participation (in requirements analysis and procurement process) are clearly illustrated. They echo concerns expressed by Howcroft and Wilson (1999). Yet, they show how some critical self-reflection on the part of individuals and departments can be facilitated and how at least different interests can be voiced (if not resolved).

Another example is provided by Myers and Young (1997) who describe the process of developing (or rather agreeing requirements and specifications) for an information systems in one of the New Zealand's NHS organisations. Using aspects of critical theory of Habermas, the authors expose hidden agendas, power and assumptions embedded within the project, and conclude that these inhibit user involvement and participation. They provide analysis of the situation but no suggestions of how to overcome problems. Nevertheless, the article is of some interest to our work, not least because of its health context. What the paper shows is how political forces (particularly strong in national health services) seek to influence the development and implementation of information systems or rather how they seek to embody new policies in information systems.

3.2.6 *Criticism of critical theory*

Critical theory comes under criticism from two corners, those who in principle agree with the main tenets of the theory but dispute some of its aspects or omissions and point out difficulties in its application, and those who dismiss critical theory altogether. The most fundamental criticism – and something we would not even consider refuting here – denies the notions of subjectivity and values in social investigations and instead considers social sciences to be (or at least should be) objective and neutral.

Another criticism comes from post-structuralists who question fundamental assumptions behind critical theory's claim to provide a rational grounding for its normative standards. This is because these are based on knowledge, and knowledge is interlaced with power (Foucault, 1980; Lyotard, 1984). Thus if power is intrinsic, it is impossible to annul power relations. Furthermore, the emancipation itself becomes a concept that cannot be unified and made coherent – but one that only reflects different narratives, and may itself become oppressive (Kincheloe and McLaren, 1994). (We see a reflection of this problem

in excesses of French and Russian revolutions and the lives of Robespierre and Lenin, that depict the use (or rather abuse) of emancipatory principles (or slogans) to inflict terror.)

Similarly, discussing the search for emancipatory principles in IS design, Wilson (1997) queries the application of Habermas' theories, particularly the premise that through reasoning and rational justification we can achieve emancipation (or emancipatory system). Ultimately, he claims, emancipatory principles are value-laden and may have different interpretations. More sinisterly, they can have totalitarian undertones. He also undermines Habermas' perspective on power; instead he prefers Foucault's interpretation.

Although acknowledging these problems, we argue that critical theory rejects totalities and dogmas, and does not impose a dogmatic concept of emancipation. It encourages reflexivity rather than belief, although it does make an appeal to some 'intuitive' normative values. Undermining those would lead to absolute relativity, when there is no good or bad – just different interpretations.

Another criticism of critical theory is that it overplays the notion of human autonomy and consciousness, and that cognitive processes play a comparatively minor role in the practical processes of freeing humans from oppressive conditions. Thus even if we are able to critically reflect on our conditions that does not mean that we (collectively) would want to commit ourselves to changing them (Alvesson and Willmott, 1996; Hirschheim and Klein, 1989).

What is more, the principles of critical theory are very difficult to translate into actions. Lyytinen and Klein (1985) point out the difficulties in applying critical theory to system development and list the inherent problems with the concepts of emancipation (does everyone want to be emancipated?), consensus (how to establish genuine consensus?) and ideal speech situation (how can it be achieved?¹³). Hirschheim and Klein (1989) in similar vain ask how to accommodate the three knowledge interests in the systems development life cycle; how to apply the concept of rational discourse to systems

¹³ Introna (1997, p 166) admits that the notion of ideal speech situation is utopian.

development and to guard against the numerous forms of fallacious reasoning, and so forth. In their later paper Hirschheim and Klein (1994) add:

... critical social theory does not point to effective ways of handling the darker side of organisational life, which blocks the road to emancipation, in particular the distortions arising from vested interests and power.

This criticism, in our view, is only partly true. It can be refuted on two accounts. First, critical writings uncover such distortions and aim to bring to light the reasons behind them. In that, at least, they raise people's awareness. Second, some do suggest (admittedly sometimes vague) solutions to existing problems. For example, Feenberg (1991) strives not just to criticise the development and use of current technologies, but also to outline a theory of new technology that can be built and used in a way that empowers workers, and eradicates alienation. Alvesson and Willmott (1992) argue that in the field of management it is essential to close the gap between theory and practice, as it is already happening in other fields, with a more advanced tradition of critical studies. Alvesson and Willmott (1992) and Alvesson & Deetz (2000b) infuse managerial theory with critical principles.

Asaro (1999) criticises the traditional dichotomy between critical theory and practice. Yet, this dichotomy is not embedded in critical theory, on the contrary – action is seen as an extension of theory. On the other hand, the dichotomy was often enacted in practice. The Frankfurt school theorists were 'guilty' of creating it to some extent by expressing their thoughts in often complex manner, not easily translatable into programmes of action and by (largely) not bridging the theory and action themselves.

'Internal' criticism of critical theory is voiced by feminists who point out that patriarchy, as a fundamental source of domination, was not discussed in critical works. However, the family as a source of oppression (or rather authoritarian power) was discussed by Horkheimer (1972b) although more so from the angle of the father/son relationship. Furthermore Marcuse in 'Marxism and feminism' (1974) sees feminine values and qualities as a negation of the values of capitalism, patriarchy and competition. Nevertheless, his vision is somewhat utopian and it is not concerned with concrete situations and social structures that oppress women and how could they be removed (Kellner, 1984). Although this is a big omission it does not prevent feminists from extending the boundaries of critical theory. After all, the fundamental principles remain

the same and can be applied in different situations and disciplines. Indeed, the fusion of critical theory and feminism can be very fruitful for both traditions. Thus values traditionally considered as ‘feminine’ (non-competitiveness, co-operation, communication and caring) may enrich critical theory while ‘matriarchy’ offers an alternative model of social order. Of course, here we make a great leap of faith by implying that (so-called) feminine values and matriarchy are better, or that feminism is a unified movement (which it is not). Yet, we can see the applicability of those values to telehealth, if it is to be seen as supporting caring activities, and re-enforcing Aristotelian virtues of a good life and virtues of a profession (e.g. of doctors and nurses).

Critical theory comes also under criticism from Marxists quarters for neglecting Marxists topics and undue concern for philosophical and theoretical problems, and remoteness from working class politics (Held, 1980). Horkheimer and in particular Adorno’s writings (Adorno, 1973; Horkheimer and Adorno, 1972a [1944]) lend themselves to criticism of elitism, of white middle-class men belonging to the intellectual elite intellectualising revolutionary ideas, thus removing any ‘edge’ from them, distilling ideas till they loose any force. Also, Marcuse’s work (particularly ‘One-dimensional man’) is accused of over generalisation, forgetting concrete situations, pockets of resistance and conflict, as well as being weak on historical analysis (Offe, 1988). Yet, as students in the 1960’s in France proved, critical theorists (in this case Marcuse) can inspire (or at least serve as the banner for) revolutionary movements or some sort of protests against the status quo. We believe that the Frankfurt School’s attention to other matters than class domination, like oppression within a family, is an important step towards discovering different forms of oppression.

Alvesson and Skoldberg (2000a) state that altogether critical theory adopts too much of an intellectualising theoretical stance. This, as they point out, makes it difficult to apply it in empirical research. Certainly, we agree that critical empirical studies are difficult. Also, reading critical theory texts is challenging, as they often assume prior knowledge of other philosophical and social science concepts. Does this amount to over-intellectualising? We believe that one should strive to write in a clear and precise manner without making simple things sound complex – but beyond that – where lies the dividing line between intellectual and over-intellectual works?

A different point is made by Jonsson (1991 p 376) who states that:

A weakness of the critical perspective may be that it tends to emphasize underlying “forces” that drive in one or other direction. Such concepts of force may become established tools of analysis in a way that inhibits discovery of the fact that the concepts are no longer adequate.

This is, of course possible, but only if one does not follow one of the main tenets of critical theory – the need for questioning, reflexive approach. In order to avoid the problem of ‘out-dated’ forces, this chapter now reviews critical theory in the light of post-modernist and information society writings (see the next section).

(For further discussion of criticisms directed at critical theory and their, at least partial, refutation refer to Alvesson and Willmott (1996), Held (1980), Morrow and Brown (1994).)

3.3 Theories of changing society

The Frankfurt School was particularly active in the period between the wars and after the Second World War¹⁴. Since then new theories have been developed that try to account for the developments in the modern (or post-modern) society. Therefore, we feel it is necessary to re-visit critical theory in the context of more recent ideas regarding the contemporary and future society, particularly the notions of post-modernism and information society. Understanding these ideas helps us to place this research (and telehealth) within the wider context.

Although this work is not intended as a direct contribution to the discussion on the types of emerging society, the aspect of discontinuity versus continuity is of a great interest to my thesis. There are two contradicting views: one declaring that a new kind of society is emerging, e.g. post-industrial (Bell 1973), post-modern (Castells 1989) or a new predominant production mode (post-Fordist, flexible specialisations - Piore & Sable, 1984). Other - seeing current developments as a continuum of the past (Beninger 1986; Mulgan 1991). The former indicates a major shift in the society with its enormous implications for ICT-based services (e.g. the rapid rise in number of information

¹⁴ Horkheimer and Adorno wrote in the period between the wars and after the second world war (they died in 1973 and 1969 respectively). Marcuse was active until his death in 1979.

workers, professionalisation of the society, a switch to new forms of organisations and production, all triggering different information/telecommunication needs). The latter, although not denying the process of informatisation, situates current developments within a much larger historical perspective, thus lending itself to historical analysis.

The sections below provide a brief introduction to post-industrialism, post-fordism and post-modernism, focusing on economic and cultural trends they emphasise. This is followed by a critique of these assumptions and then an overview of information society ideas.

3.3.1 *Post-industrialism*

Probably the most famous herald of post-industrial society is Daniel Bell. Based on the writing of Fisher and Clark, Bell (1973) proposes a model of economic development characterised by three successive stages: a pre-industrial, an industrial and a post-industrial stage. The first stage is characterised by the dominance of agriculture, the second - manufacturing and the third - services. The post-industrial society is driven by knowledge and information. Bell postulates that developed countries have moved from goods producing to a service society. To support his theory he follows Fitz Machlup in assessing contribution of information activities in GNP and points to the shift in the labour employment. He states that in the United States more than 70 percent of the labour force is engaged in services (Bell, 1988). In his later work, prompted by the progress of microelectronics, Bell develops his ideas further, heralding the coming of the information society (Bell, 1980). This society is based upon the production and processing of knowledge. Theoretical knowledge becomes central, especially to the process of technological innovations. Knowledge becomes both a resource but also a commodity that can be bought and sold. Such developments lead to changes in the character of work and the rise of information occupations (knowledge workers, professionals, technicians, care and service workers).

Bell's ideas, presented here in a very minimal and crude way, have been much disputed by others. Castells (1989) points out that the information society will not be dominated by the service sector but other sectors will co-exist. Also, the link between growth in service employment and an increase in the demand for services is also questioned by

Webster (1995) who argues that we may be moving towards a DIY economy where people instead of purchasing services will tend to purchase machines to perform those tasks themselves. In addition, the growth in service employment may be, at least partly, due to increased role of service jobs in the production of goods, for example in marketing and advertising functions. Bell's somewhat optimistic view is also undermined by Gorz (in Allen 1992) who emphasises the plight of the 'servile' class of often casual, part-time workers employed to serve the knowledge class.

3.3.2 Post-Fordism

At the same time as post-industrialist society was supposed to have been emerging, in the late 1960s and early 1970s, others hailed the beginning of new post-Fordist era. Post-Fordism emphasises emergence of new flexible means of production (flexibility of plant and machinery, product and labour), the rise of consumerism and individualism leading to the end of mass-production and consumption (Allen, 1992; Piore and Sable, 1984). Such conclusions are seen as over-reaching by Webster (1995) who points out that large transitional corporations, even if now re-structured, still prevail and mass production remains dominant through advanced economies. Allen (1992) disputes the view that a single economic dynamic, such as information or flexible manufacturing, may be capable of transforming much of the world economy.

According to Allen (1992) despite different assumptions regarding the path of development in the new economic order, post-industrialism and post-Fordism share the following common views, even if detailed analysis of those trends would differ in their writings:

- the importance of knowledge;
- tendency towards greater not lesser economic and social inequality (however some 'flexible specialisations' theorists emphasise re-skilling of labour who eventually would become more autonomous and highly skilled, rather than pondering the plight of 'peripheral' workers in new 'flexible' firms);
- globalisation of modern economic life.

Allen points out that globalisation brings disparities between different regions of the world and countries but also between different areas within developed, western cities

resulting in ‘backward’ enclaves. This assertion is considered in our study of a ‘deprived’ London borough and our focus on social exclusion.

The trends discussed above are present (to a degree) in the healthcare industry. For example national policy documents convey aspirations to reform the NHS to offer more individualised, patient (customer) centred care, delivered by flexible, multi-specialist teams organised around customer needs and across organisational boundaries. Telehealth is seen as an important aspect of this vision, enabling better communication within and between the teams and the exchange of patient information (e.g. through the electronic patient record), facilitating flexible (not constrained by geographical distances) use of specialist skills, and allowing easier access to wealth of information for health professionals and patients.

3.3.3 Post-modernism and post-structuralism

In contrast to post-Fordism and post-industrialism, post-modernism emphasises cultural changes. Post-modernism suggests a world in which there is no overall ‘truth’ but many ‘truths’ and that we construct our own meanings, history and lifestyles. Some paint a picture of a world which is confusing, without dominant dogmas and truths, and where old established sources of authority (people or organisations) loose their authority. According to Baudrillard we live in hyperreal world, where hyperreality is “substituting signs of the real for the real itself” (quoted in Simpson, 1994). Post-modernism implies the substitution of value for meanings and the collapse of a set of parallel distinctions: appearance/reality, counterfeit/original and illusion/truth (Simpson, 1994). Information technology can be seen as aiding those developments and its latest, but not only, manifestation is the creation of virtual reality. Ironically, technology promises to offer means of controlling technology, e.g. negative effects of existing technologies are promised to be alleviated by introduction of new technologies. Thus postmodernism is shaped by technological discourses e.g. on post-industrial or information society, electronic reproduction, IT, cybernetics, etc. In the highly controversial and exaggerated words of Baudrillard [the Ecstasy of communication] “In the era of hyperreality we become merely terminals of multiple information networks: we are constituted by our place in the circuit of information flows.”

Another important theme in post-modernism is the role of consumerism. As Lyon (1994 p 68) states “If postmodernity means anything, it means the consumer society”. In the consumer society, the place of a factory is taken by a store; there is ever increasing pressure to spend, people identify themselves by different lifestyles they can purchase (adhering to symbolic meanings ascribed to different goods, e.g. jeans as a symbol of vitality, youth, sexiness). The system is based on seduction not coercion.

In such a society, could telehealth become an accessory or a lifestyle choice? The answer is probably yes. Health clubs, which entered the nation’s consciousness in the 1980s, are still growing in popularity. Health monitoring systems are already present in such places. We could see a trend towards purchasing products now usually in the domain of top athletes, i.e. monitoring equipment. Such equipment supported by expert systems could run ‘diagnostic’ programs, altering people to any potential health problems.

Beyond this, health advice can be acquired on the Internet (either as general health information, or through self-support groups and ‘ask a doc’ advisory sites). These volumes of information presented through the new media may contribute to citizens (healthcare consumers) becoming more informed but also confused and overwhelmed, because of often contradictory nature of information and the multiplicity of choices offered.

Post-modernism is sometimes equated with post-structuralism. There are similarities between both traditions. Firstly, both theories break away from the Enlightenment belief in reason, absolute truth and totality. Secondly, they emphasise the importance of the local (Lyotard, 1984). However, here we do not intend to explore further their differences and similarities. Rather, we intend to focus on one of the representative of the post-structuralist movement – Michael Foucault, because of his interests in genealogy of knowledge and the insights into power relations. The basic claim of Foucault’s genealogy of knowledge is that political power and scientific knowledge are not external to one another, and thus ‘regimes of truth’ (truth claims in science) have political character (are characterised by ‘power/knowledge relations’ present in the scientific discourse of a particular discipline)¹⁵.

¹⁵ The subject of construction of scientific knowledge was also taken up and by Latour and Woolgar in their ethnographic study of scientific community (Latour and Woolgar, 1986) and by sociology of

In 'Discipline and punish: the birth of the prison' Foucault (1979) develops the notion of power. The author argues that power no longer belongs to a sovereign but it is imposed by the disciplinary society, through continuous monitoring of daily life. Power is no longer exercised over our bodies but instead over our minds (e.g. in prisons, schools or workplaces). Yet power is not necessarily bad or top-down but

[it] is employed and exercised through a net-like organisation. And not only do individuals circulate between its threads; they are always in the position of simultaneously undergoing and exercising power... In other words, individuals are the vehicles of power, not its points of application. The individual is an effect of power and the element of its articulation. (Burchell, et al., 1991).

While Foucault alerts us to the diversity of forms and locations of power he comes under criticism, because of his lack of treatment (or inadequate treatment) of structures such as the state, the school, the bureaucracy and their relevance to the notions of power (Olssen, 1996)¹⁶.

The notion of power plays an important part in critical research. Although this research does not concentrate on power, telehealth (seen as a social system) is intrinsically linked to power, e.g. not only telehealth services may alter balance of power between different stakeholders but also power (prevailing 'regimes of truth', e.g. as demonstrated through Random Controlled Trials) influences developments in telehealth. Also, power is intrinsically linked to the notion of empowerment, one of the central notions of this research. (The concept of empowerment is discussed in Chapter Four.)

3.3.4 *Information society theories*

Despite these varied views and descriptions of the emerging society, it seems that the term 'information society' has become the most popular in current literature, journal and newspaper articles, as well as in official government publications. This, however, does

scientific knowledge (SSK) theorists. The main tenants of SSK were applied to the technological (rather than scientific) development by the SCOT school (see Appendix A).

¹⁶ In-depth analysis of power can be found in Sical (1997) and Introna (1997).

not mean that we should stop questioning its meaning. Do we, indeed, live in information society or are we about to? What role does information play?

These questions are tackled by Frank Webster (1995). He criticises some of the most influential theories regarding the role of information in society and examines the validity of different definitions of information society, thus providing a reference point for further studies. He identifies five major approaches towards defining an information society, that is: technological, economic, occupational, spatial and cultural.

Webster questions assumptions of Daniel Bell, Jean Baudrillard, Mark Poster, Michael Piore and Charles Sabel, and Manuel Castells that we live in a distinctly different society. He criticises ambiguity of their definitions of this new society and the lack of clarity of criteria chosen for its assessment, for example he asks how to measure the rate of technological diffusion and furthermore when does society stop being ‘industrial’ and becomes information society?

Webster concedes:

Undeniably, information and knowledge - and all the technological systems that accompany the ‘information explosion’- have quantitatively expanded. It can also be readily admitted that these have become central to the day-to-day conduct of life in contemporary societies. Nonetheless, what cannot be seen is any convincing evidence or argument for the view that this signals a new type of society, ‘post-industrialism’, which distinguishes the present sharply from the past.

He criticises preoccupation with quantifying information rather than looking at its meaning and disputes McLuhan’s often-quoted statement “the medium is the message”. In essence Webster constructs a critique of technological determinism. He states that the assumption that a technological innovation results in social change is the wrong point of departure to study technology and society. He dismisses at hand Alvin Toffler and James Martin as ‘techno-boosters’, but also criticises Bell, Piore and Sabel, Poster and Castells for their (if more sophisticated) technological determinism. Webster believes that it is misleading to separate the social realm from technology/technique (i.e. to see no influence of beliefs and values on technological developments) and then to bring those two together when describing impact of technology on society.

Miles (1996) provides an introduction to the main viewpoints regarding information society and their ethical concerns. His analyses are not as searching as Frank Webster’s

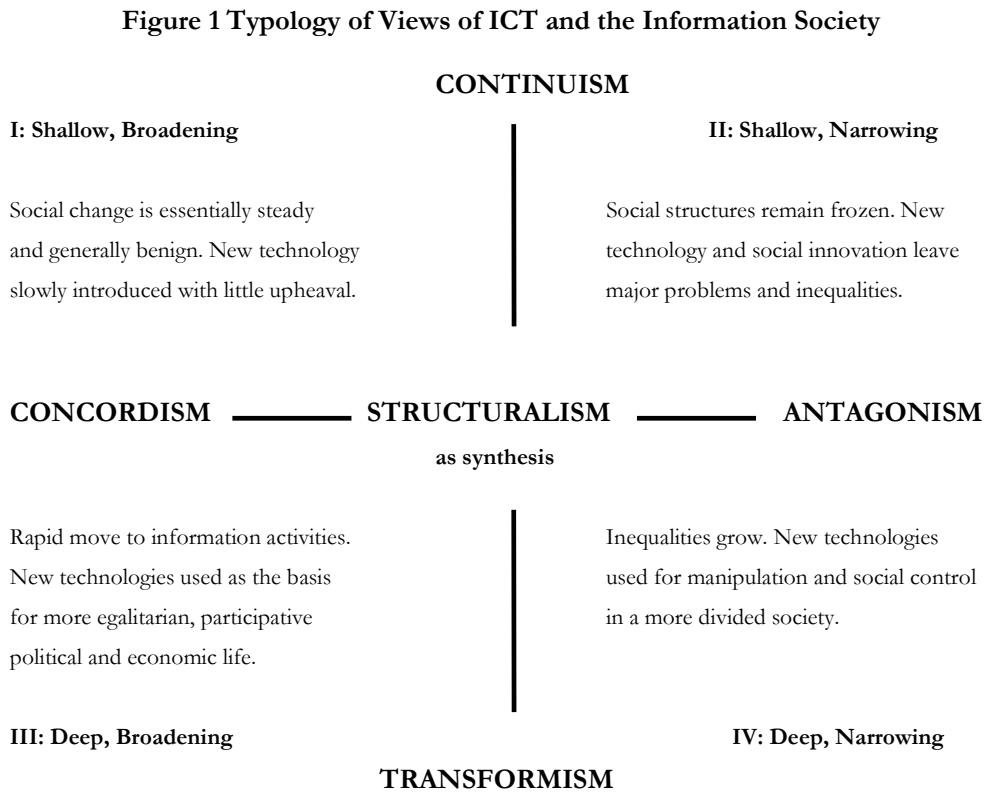
and appear over-simplistic, but they do provide a simple framework that can serve as a focus point of in-depth analysis. Miles accepts the term information society unconditionally. He admits that, long before now, humans were involved in information processing activities and created technologies to support it, but states that current social and technological developments are distinctive. This is because information storage, processing and communication have become increasingly important in economic, social and political life. He sees developments in information and communications technologies (ICTs) as pivotal to the process of shaping our society. He points to two dimensions underlying much of the debate on the social implications of ICTs: depth and width. The depth perspective depicts different views on speed and extent of change. At one extreme, 'continuism' stresses the continuity of trends, the limited extend of ICT-related change and social and economic innovation in information society (even to deny existence of information society). At the other end, 'transformism', regards information society as a fundamentally different society, where ICTs have an all-pervasive revolutionary potential. This classification falls within continuity versus discontinuity debate discussed by Webster (1995). The other dimension, introduced by Miles, refers to contradicting views about the nature of the information society, at one hand - as a place of greater democracy, decentralisation, self-expression and personal choice, as proclaimed by 'concordists', at the other - a centralised state characterised by threat of greater surveillance and control of political and personal activities, as envisaged by 'antagonists'. A view which synthesis these diverse beliefs, attempting to build on contributions of all positions, he terms 'structuralism'. Structuralism proclaims that a diversity of actors and interests result in a multiplicity of choices and many outcomes, thus there is not simply one future outcome but many possible ones. A summary of views on the information society alongside both dimensions is presented in the following table 2.

Table 2 Views of the Depth and Width Dimensions of the Information Society

DEPTH: The 'change' dimension		
Continuism	Transformism	Structuralism
Claims about the information society, ICTs, and the predicted rate of diffusion of the technology are regarded as overstated. Main features of society and basic power structures are thought unlikely to alter, although social and political initiatives may lead to change. Forecasting mainly for short-and medium-term, based on extrapolating past experience.	Information society is viewed as representing a major historical shift, changing the bases of political power and social classes with a growing role for information workers and knowledge classes. ICT seen as revolutionary technology with practical benefits which will promote repaid diffusion. Long-term forecasting based typically on generalizations of leading-edge experiences.	Recognizes both barriers to change and openings for far-ranging innovation. Outcomes expected to depend on actors and interests shaping ICT applications, with an uneven diffusion of the technology. Social change seen coming mainly in new organizational structures, styles, and skills. Forecasts draw on other approaches, usually in areas like industrial organization, employment experiences.
WIDTH: The 'control' dimension		
Concordism	Antagonism	Structuralism
Access to information regarded as liberating; communication systems as promoting decentralization. ICT seen as aid to abolishing tedious and dangerous work and improving quality of working life. Options opened for: new forms of community; meeting growing education and training needs; dissolving distinctions between regions and social groups.	Information linked to great increases in social and political control. Existing inequalities expected to be widened by gaps between information-rich and poor. ICT seen as increasing de-skilling and degradation of work and separation between mental and manual labour. Likely acceleration of tendencies to withdraw into private, often highly stressful worlds in everyday life.	Information society treated as a shift between different regimes of social actors with unequal opportunities to intervene, but all of whose actions have consequences. Some de-skilling is likely but new skills and job types will be created. Evolution to new cultural forms; new resources and interests; and new areas of co-operation and competition.

Source: Miles (1996)

Figure 1 depicts four visions of alternative scenarios of information society and how they may differ in terms of four quadrants defined by the intersection between depth and width dimensions.



Source: Miles (1996)

This typology can be accused of being crude and lacking theoretical reference. Nevertheless, it is very useful perhaps *because of* its simplicity. We refer to it in the Chapter Five when analysing health policy papers and in Chapter Six when discussing local policies and initiatives. Although according to Miles structuralism recognises the diversity of actors and their interests, he does not explicitly acknowledge that some developments can be seen as both – concordist and antagonist, depending on whose view is taken. Furthermore we have highlighted that certain reforms and ICTs supporting them can be placed in both categories – concordist and antagonist depending on their interpretation (even by the same group), for example – providing health related information to citizen

could be interpreted as ‘emphasis on individual responsibility for health’ or alternatively as ‘informed consumers exercising choice’. Thus Miles’ framework, as any framework, can be only taken as a starting point and as simplification of more in-depth analysis. As mentioned before it can be considered as an introduction to the ethical dimensions of information society and the potential ways ICTs can be used within different models of society.

This typology might be also used as a tool for classifying theorists of information society, as well as defining my own views. My views are contradictory to those of Toffler, James Martin, and Negroponte, who perhaps belong to the third quadrant. Probably they could be joined by Daniel Bell. The fourth quadrant would perhaps include Castells, Gorz as well as Winner and Postman. But such classification is prone to oversimplifications and misjudgements. For example, Allen could be classed as belonging to the second or forth quadrant or perhaps to structuralists. At the same time, some theorists themselves modified their views, for example Daniel Bell’s later writings are less technologically deterministic than his earlier works.

With certain reservations, I see myself as belonging to the second quadrant. This is because, although not denying changes taking place and accepting that some may be beneficial, I cannot help to be persuaded by Herbert Schiller’s argument that the basic rules of a capitalist mode of production continue to operate. In the information society capitalistic values and imperatives prevail, shaping the new technologies accordingly. For example, market principles promote commodification of information. Therefore, existing inequalities will not be eliminated and may be even widened.

There is a limited scope for fundamental social change within the established *mode of social and political regulation* (using the ‘regulation school’ language¹⁷). Contrary to optimistic predictions, we have not become a ‘society of leisure’, where people work a few hours a day for 2-3 days a week. ‘Core’ employees work longer hours than ever, while many peripheral jobs have become less secure and are badly paid. However, this is not to say that there are not going to be any fundamental changes in the future¹⁸.

¹⁷ This is not to imply that Herbert Schiller belongs to Regulation School, since he is considered as a prominent critical theorist.

¹⁸ For a discussion about changes in the regime of accumulation and mode of social and political regulation see Harvey (1989).

3.3.5 Summary of the viewpoints

What post-industrialism, post-fordism, post-modernism and information society theories reveal is the sheer diversity of trends and their interpretations. However, despite quite different departure points, as well as conclusions, certain common views can be identified¹⁹, that is:

- growing importance of information and knowledge;
- acceleration of change;
- globalisation.

These trends may have significant influence on the developments in telehealth; to list just a few: breaking down of established structures and forms (e.g. organisational structures and forms of employment), undermining existing sources of authority (e.g. the government and the medical profession), importance of information, relative affordability of electronic equipment and communications links. For example, the rise of importance of knowledge (or rather information) has direct implications for telehealth in terms of systems delivering health information to citizens, supporting evidence-based medicine, and co-operation between professionals and organisation. The ideas of networked and virtual organisations are also applicable to public institutions, including the NHS. Such organisational forms call for technologies that can sustain them (e.g. telecommunication lines and appropriate equipment capable of supporting remote consultations). These trends must be seen in the context of polarisation and globalisation, e.g. healthcare can be delivered globally via telemedicine systems, but will it improve access for everyone in the poorer nations or only for those who will be able to buy such services? Furthermore, does the proliferation of information sources lead to better informed (and healthier) citizens or does it – as post-modernists would suggest – contribute to confusion, fragmentation of interests, and disillusion with the authority and official knowledge?

¹⁹ These are not dissimilar to trends identified by post-Fordists and post-industrialists.

3.4 Critical theory revisited in the light of ideas of information society and post-modernism

Post-modern theory seems to pose a direct challenge to critical theory. Can, then, critical theory be ever reconciled with post-modern theory? In a sense, yes and no. No, if we consider post-modernism in its extreme, leading to total nihilism. Yet, post-modern theory is not homogeneous. For Baudrillard post-modernity may mean 'hyperreality' and a loss of meaning, but for others an altered discourse or even a cultural logic of late capitalism that can be still analysed through Marxist principles (e.g. refer to Bauman's writings). Thus post-modern condition may not necessarily imply that critical theory has lost its ground. On the contrary, postmodernism without critical theory is locked in a circle of simulacrum and signifiers made impotent by total relativity. As Alvesson and Deetz (2000b p 108) suggest:

Without considering postmodern themes, critical theory easily becomes unreflective with regard to cultural elitism and modern conditions of power; without incorporating some measure of critical theory thought – or something similar that provides direction and social relevance – postmodernism simply becomes esoteric.

They point out similarities between the two theories: concern with social/historical/political construction of knowledge, dependent on people and social relations; and the fallacy of seeing world as rational and neutral. According to Lyon (1994) we are now witnessing an ethical turn within post-modern discourse. Furthermore, post-modern condition does not necessarily imply a total discontinuity, a birth of a new society. Thus, without undermining its fundamental principles, post-modern theory can enrich critical theory and critical studies. As Lyon (1994 p 70) maintains:

The question of post-modernity is now central to any attempt to chart cultural change and, if this book is correct, to understand contemporary social phenomena. But it does not mean that a fully-fledged new society has been born.

Thus, perhaps a greater consideration needs to be paid to consumers not just workers to understand daily realities and meanings of social life. This is not to say that critical theory disregarded consumerism altogether. After all, even the fathers of the Frankfurt School discussed mass culture, and Marcuse saw consumerism as a force of alienation and as

means of co-opting people into the system. Nevertheless, orthodox Marxism is based on the analyses of 'forces of production' not 'forces of consumption'.

Furthermore, the break with meta-narratives, proposed by post-modernists and post-structurists, should lead to more, not less, critically aware works. It means viewing the world from different perspectives, e.g. seeing social conditions from the viewpoint of women or minorities and understanding history from other than an Euro-centric stand point. Thus the old meta-narrative of class or economic emancipation no longer serves as master narrative. It is now complemented by emancipation narratives of feminism, eco-warriors, human rights groups and other movements (Kincheloe and McLaren, 1994). As Peters, et al. (1996a) point out critical theorists themselves had also emphasised difference, multiplicity and fragmentation of social reality (for instance, Adorno and Althusser in the 1960s). Furthermore, the post-structuralist focus on localities does not make invalid grand critical projects, but rather illustrates the need for researching contextual specificity of the local, as well as larger organisations and structures. This is what this thesis is attempting to do – to focus on the local (Lewisham Borough) but in the context of national policies and initiatives.

We also see that diverse manifestations of ICTs are central to post-modernists and the information society theory. Nevertheless, we do not believe that such technologies undermine critical theory. Technologies may have changed (or have potential to change) the public sphere, may have altered certain cultural, social and economic relationships but they do not negate the existence of the public sphere or the reality of class and gender struggles. 'Cyber reality' or 'multiple cyber realities' do not mean that economic forces have no longer an effect on our lives. As Hope (1996, p 73) states it: "Technological infrastructures extend the dimensions of structural power."

It is this author's strong belief that although essentially we interpret (often differently) the social reality, there is something real outside signifiers. Thus we would argue that information society is not based on totally different principles. We may be cautiously inclined to agree with Lyon (1994 p 85) that "The emerging social order, whether conceived as 'post' or 'high' modern, is characterized above all by new modes of communication." The transformative potentials of new ICTs are (to greater or lesser extent) realised in e-commerce, e-education, e-entertainment and arguably telehealth.

Nevertheless, we believe that such developments must be seen within their historical and social perspectives, in terms of continuity and change.

In summary, critical theory has not lost its relevance today. This is because of, firstly, its insights into the conditions of knowledge of the social world. Primarily, the assertion that no system of basic concepts, found in natural sciences, can be established for the study of society. Secondly, the critique of different structures of 'oppression' directs attention not only to issues of ownership, control and division of labour but also family (authoritarian structures), sexism, ecological problems (submission of nature through science) and cultural domination, and their critique of self-enforcing regimes of science and technology, seems particularly relevant today (Connerton, 1976a).

3.5 Summary and conclusions – the relevance of critical theory to the study of telehealth

This chapter presented the philosophical assumptions underpinning this thesis, focusing on the main tenets of critical theory. The central idea in the critical perspective is that all social phenomena are historically created and conditioned. Social conditions, often constraining emancipation and limiting one's potential, are created and recreated by man. This statement equally applies to technology. Technology is not seen as autonomous but as an instrument of social control and profitability by the 'vested interests' which control society (Feenberg, 1991; Marcuse, 1970).

What does critical theory bring to the research of telehealth? In this way we hope to show that telehealth technologies are not simply autonomous but they are socially constructed (through often interrelated actions on macro and micro levels), and thus can be potentially directed (in their development and use) towards emancipatory aims. The way such technologies are constructed and perceived is limited by social structures and the predominant technological rationality. It is the aim of this research to uncover such limitations, and to consider how telehealth can support social aims, for example empowerment and social integration. Of course, we cannot claim that simply through changing technology the aims of emancipation or empowerment can be achieved. However, the way technologies are developed and used does influence our lives.

While conducting our research we bear Wilson's (1997) and Bauman (1993) claim that emancipatory principles are value-laden and may have different interpretations. We also take into account Foucault's interpretation of power and how this influence empowerment. We try not to take the 'high moral ground' and claim a position of knowing it all. Nevertheless, acknowledging the need to take normative stance, we suggest certain solutions, which seem better to us and to those we have spoken to.

We follow the Frankfurt School theorists in their belief that certain actions need to be political and address the totality. However, we also take into account post-structuralist concepts of local sources of knowledge (Foucault, 1980) and post-modern concept of fragmentation. Thus this research attempts to combine both, through the study of national health policies, local strategies and individual projects.

While this chapter set out to discuss theories in which this thesis is grounded, and to show their relevance to the study of telehealth, the following chapter describes research strategies and methods utilised in this study.

¹ Marcuse's description of the web of administration (see citation below) resembles Foucault's discussion of the network of power:
"the organizers and administrators themselves become increasingly dependent on the machinery which they organize and administer. And this mutual dependence is no longer the dialectical relationship between Master and Servant, which has been broken in the struggle for mutual recognition, but rather a vicious circle which encloses both the Master and the Servant" (1970 p 42)

CHAPTER 4

Research Approach and Research Framework

A research design is “the logical sequence that connects the empirical data to a study’s initial research questions and, ultimately to its conclusions” (Yin, 1994 p 29).

This chapter outlines the research approach taken to conduct the study of telehealth. The approach stems from our theoretical position, described in the previous chapter. Thus, essentially it is guided by critical theory, fused with insights from information society, post-modernist and post-structuralist theories.

Uniting critical theory and empirical research requires the researcher to choose a critical methodology (in case of this work it is hermeneutic enquiry, that takes into account agency-structure dialectic); to critique existing knowledge claims; to deliver alternative synthesis (in this case linking interpretation of social trends, policy analysis with social theories in attempt to provide critical theory of technology, specifically telehealth); to use empirical evidence (case study incorporating multiple projects); and to provide a normative critique.

Critical theory does not provide clear guidelines (methodologies) on how to undertake research and it is eclectic with respect to the use of techniques of investigation (Morrow and Brown, 1994). Rather, it demands awareness of underlying issues when taking up a chosen project of study. It encourages questioning of ‘truths’ of the dominant rationality.

It asks us to be open to voices not clearly heard and to uncover underlying patterns behind the immediacy of the subject under study.

However, somehow the gap between philosophical foundations and practical research must be bridged. This chapter proposes a research design, that without identifying detailed step-by-step activities, gives clear guidelines on how to conduct the research. Broadly speaking the research methodology is based on hermeneutic inquiry within a normative framework. In this research hermeneutics is treated as a research method rather than a theoretical approach (it can serve as both). Thus section 4.1.1 outlines the main ideas behind hermeneutics, focusing on the hermeneutic circle. This is followed by the introduction of principles of critical research. Then, the research framework is proposed, outlining areas on which the research will focus. The concepts of empowerment and social exclusion are discussed to provide theoretical lenses through which (some) claims regarding potentials of telehealth can be analysed. This is followed by the description of the methodology employed to conduct the empirical study, i.e. the case study. Finally, the research undertaken is described.

4.1 Research strategies

4.1.1 Main concepts of hermeneutics

Hermeneutics and the concept of meaning

In this research we are presented with a problem of finding the concepts or meaning(s) of telehealth. Hermeneutics, an established but very diverse theory, offers insights as to how such a task may be performed. We draw on hermeneutics as a research instrument for reading texts and text metaphors.

Hermeneutics initially was concerned with interpreting the Bible, a text with contradicting and evident but opaque meaning. Then the approach was extended to other texts from different cultures and times. More recently, hermeneutics has come to encompass an approach to the study of all products or 'objectifications' of the human mind, including institutions, work of art, literature and technology (Burrell and Morgan,

1985). Hermeneutic tradition incorporates various different approaches and points of view. Even concepts of meaning and interpretation are understood in different ways. Thus initially, the unique or single and universal meaning of a text was seen as a given and the process of interpretation involved unfolding this meaning. This resulted in striving for objectivity (fuelled by the belief that the 'objective' meaning exist). The notion of validity of the interpretation was linked in particular to uncovering the author's original intentions. However this view came later to be disputed, notably by Gadamer (1976). Gadamer emphasises the historical perspective of meaning and the role of an interpreter (reader of the text) in the process of understanding. Thus a text can have many meanings rather than one meaning. Gadamer considers meaning as dependent on the context, and he sees understanding as situated, e.g. historically and culturally. Yet this approach does not imply total relativity and that any interpretation is acceptable. Gadamer suggests that understanding must be critical and reflexive involving a dialogue with the text, and awareness of our own (the readers) prejudices.

This hermeneutic understanding of meaning does not only apply to texts but also to objects or concepts (in a sense anything that could be termed in a text-metaphor). As Palmer (1969 p 24) puts it:

... meaning is a matter of context [...] Only within a specific context is an event meaningful. [...] We may say that an object does not have significance outside of a relationship to someone, and that the relationship determines the significance. To speak of an object apart from a perceiving subject is a conceptual error caused by an inadequate realistic concept of perception and the world; but even granting this concept, does it make sense to speak of meaning and significance apart from perceiving subjects?

This is not to deny the physical existence of objects but to accept that their meanings are dependent on perceiving subjects. In this research we are concerned with meanings given to telehealth by different people through their actions, e.g. their involvement in projects or experiences with telehealth, and meanings of telehealth, ICTs and information as they appear to us through policy documents. Thus meaning of telehealth is contextualised through the readings of policy documents and local strategy, as well as investigations of projects.

The hermeneutic circle

One of the main concepts of hermeneutics developed by Gadamer is the hermeneutic circle of understanding. This expresses the need to understand the parts of a text through the understanding of the whole, while the understanding of the whole is determined by our understanding of its parts. Such understanding is based in our lived experience. We start with fore-understanding (prejudice) of the subject, and through dialogue with the subject, we move to and from the subject (the part) to the context (the whole). This process of (multiple) interpretations leads us to a better understanding of the subject in a given situation (Hoy, 1982).

The concept of fore-understanding is an important one. It implies subjectivity of our interpretations – which are situated in our horizon. It also asserts the importance of our experience. “For the interpreter to ‘perform’ the text, he must ‘understand’ it: he must pre-understand the subject and the situation before he can enter the horizon of its meaning.” (Palmer, 1969 p 25). This pre-understanding is then altered through the dialogue with the text.

Hermeneutics and information systems research

The hermeneutic approach, although still not very common in information systems research, is being applied by an increasing number of researchers, for example by Boland (1985; 1991), Davis, et al. (1992), Lee (1993; 1994) and Butler (1998). Lee (1994) applies the hermeneutic circle in the reading of a sequence of e-mail exchanges. He illustrates how different messages are given distinct meanings by different readers, and how the readers alter the meaning of one message in the context of other messages. The hermeneutic circle takes place not only between a reader and different messages but also between the reader and the organisational context. Lee supports the concept of a listener/reader/receiver as an active producer of meaning, rather than a passive recipient. The concept of the hermeneutic circle is also applied by Davis, et al. (1992) to the process of interpretation of information system failure. He illustrates how successive passes through the circle, allow the observer to reach a new meaning for the behaviour in question, and how behaviours (or more generally text passages) which seem unreasonable acquire meaning, when interpreted within a wider frame.

Boland (1991) applies a hermeneutic perspective to demonstrate that even computer-generated numeric documents can be rich in meaning to their readers. Similarly, Lee (1993) shows that e-mail can be perceived as a medium for rich communication, despite the fact that it is text-based. Both authors use concepts of distanciation, autonomisation and appropriation as developed by Ricoeur (1981). Distanciation refers to the separation, in time and distance, between a text and its author, its originally intended audience, and in some instances its originating culture and society. Autonomisation signifies that the text 'takes on a life of its own' despite the distanciation. While the concept of appropriation indicates that in the process of interpretation a reader actualises the meaning of the text for himself/herself, i.e. makes the text his/her own.

Lee (1993) extends the concept of appropriation further and suggests that the text and the socially constructed world behind it can appropriate the reader. This kind of appropriation results in the reader enacting the meaning for the text. Thus the reader is not free to imagine any interpretation, but he/she is bound into the socially constructed world²⁰ (or 'non-ostensive reference' as Ricoeur puts it) standing behind the text. Although Ricoeur's perspective is criticised by Palmer (1969) for its somewhat linear account of understanding, it does add additional insights into the process of interpretation. For example, it suggests that although in this research we can interpret a policy document in different ways, the text and its non-ostensive references influence (or constrain) these interpretations.

As mentioned before, hermeneutics can guide the study of any phenomenon not just a written text, and the text metaphor can be and has often been extended to technology (Cooper and Woolgar, 1993; Woolgar, 1996). In this research the hermeneutic approach not only guides the interpretation of texts, e.g. policy documents, but it also underpins the research effort as a whole. We see our research as a continuous process of refining our understanding of telehealth through studying its different manifestations, moving from the 'parts' (e.g. a particular project) to a wider context (e.g. of national policy and social trends), and uncovering and drawing upon our prejudices (e.g. the knowledge of IS discipline and its relevance to telehealth). Chapter Two has provided an overview of varied contexts of telehealth and telehealth's different dimensions (in a way outlining the

²⁰ Lee emphasises that socially constructed reality is not a synonym for subjective. It implies that this reality can be shared by different people, and what is more it can be sustained by other people long after its originators are gone.

‘whole’). Chapter Five interprets British health policy and its relevance to telehealth, again applying the hermeneutic circle to move between the parts, i.e. particular initiatives, to the whole – the policy and its wider context. A similar process is undertaken in Chapter Six to analyse strategies of Lewisham Local Authority and local Trusts. The analysis of projects, in Chapter Seven, treat the projects as parts, which interpretations need to be infused with the understanding of the whole (i.e. telehealth and its context). In turn, the understanding of the whole is enriched and altered by understanding of its parts. In a sense, the description of parts and the whole is arbitrary. For example, a research focusing on a particular project might consider such a project as a whole and its different aspects as parts.

4.1.2 *Principles of interpretative and critical research*

Hermeneutic concepts form the theoretical basis for Klein and Myers (1998) principles for conducting and evaluating interpretative field studies in IS, as explained below:

- The fundamental principle of the hermeneutic circle. This principle, fundamental to all the other principles, is concerned with human understanding (reached via an iterative process of reading parts and the whole).
- The principle of contextualization. It requires critical reflection of the social and historical background of the research setting to show how the current situation under investigation emerged.
- The principle of interaction between the researcher and the subject. This refers to the need for critical reflection on the behalf of the researcher on how the materials (or data) were socially constructed through the interaction between the researcher and participants.
- The principle of abstraction and generalisation. Calls for relating the ideographic details revealed by the data interpretation through the application of the first two principles to theoretical, general concepts that describe the nature of human understanding and social action.
- The principle of dialogical reasoning. The data elicited may depict contradictions between the theoretical preconceptions guiding the research and the actual findings. Thus subsequent cycles of revision are needed.

- The principle of multiple interpretations. The researcher must be sensitive to the possibility of different interpretations of the same situation or issue presented by different participants.
- The principle of suspicion. Sensitivity is required to biases and distortions in the data collected from participants. Data should not be taken at face value.

These principles have relevance to our work, in that interpretative-based research has many commonalities with critically informed research. Yet, critical research implies a number of assumptions about the world. These are explicated by Kincheloe and McLaren (1994 p 140):

... that all thought is fundamentally mediated by power relations that are social and historically constituted; that facts can never be isolated from the domain of values or removed from some form of ideological inscription; that the relationship between concept and object and between signifier and signified is never stable or fixed and is often mediated by the social relations of capitalist production and consumption; that language is central to the formation of subjectivity (conscious and unconscious awareness); that certain groups in any society are privileged over others and, although the reason for this privileging may vary widely, the oppression that characterizes contemporary societies is most forcefully reproduced when subordinates accept their social status as natural, necessary, or inevitable; that oppression has many faces and that focusing on only one at the expense of others (e.g. class oppression versus racism) often elides the interconnections among them; and, finally, that mainstream research practices are generally, although most often unwittingly, implicated in the reproduction of systems of class, race, and gender oppression.

These assumptions do not invalidate any of Klein and Myers' principles but by explicitly focusing on the nature of knowledge claims, power and domination they set out or at least influence the research agenda and the research process. Thus, different (or complimentary) principles for conducting critically informed research are needed. These are suggested by Morrow (1994 p 268):

- The choice and manner of using methods (logics-in-use) cannot be separated from the theory-informing method and the problem to be clarified.
- Critical theory is dialectical in its recognition of the double hermeneutic of social inquiry, hence social structures are preconstituted by human agents.
- The non-empirical aspects of methodology (crucial to the logic of discovery) are made explicit components of research practice.
- Because research within a given society cannot be ideologically neutral, it is legitimate to justify rationally the definition of forms of research guided by critical-emancipatory cognitive interests.

- The empirical dimensions of methodology are differentiated as extensive and intensive, rather than quantitative and qualitative; and intensive methods are considered primary for social theorizing understood in interpretive structuralist terms.
- Extensive and intensive research designs can be differentiated with respect to their focus on processes at the level of system integration, social integration, and sociocultural mediation.

These principles, in contrast to Klein and Myers' guidelines, put great emphasis on theoretical assumptions and implications they may have for the choice of research methods. They also make explicit the emancipatory aims of the research. When referring to double hermeneutics Morrow draws on Giddens notion of the process of individuals creating the society at the same time as they are created by it.

4.1.3 *Conducting critical research*

This study was conducted with the above principles in mind. Thus the choice of research methods was informed by our theoretical position. Furthermore, the non-empirical aspects play a large part in our enquiry and they inform our research design (the choice of methods and the analysis of data). The researcher acknowledges the dialectical nature of the relationship between researcher and the subject, and the agency and structure. Moreover, this thesis openly states its interests in emancipation, or rather related notions of empowerment and social integration. It employs intensive research design based on qualitative methods.

Lyttinen (1992, p 171-172) presents general requirements for critical IS research:

In order to move from fragmentary critical IS research to systemic 'praxis'-oriented research, future studies should change their goals and research content. The inquiry needs to shift from critique into more concrete and problem-focused studies of the implications of Critical Theory for IS. The studies should incorporate several dimensions into the analysis of computing in organizations: totality/concrete situations; lifeworld/system structure; current status and evolution/history etc., associated with an understanding of, and focus on, ideology criticism (for example detailed description of instrumental reason) and emancipation. In other words the research should step from elevated critique into the practical research mode: what Burrell (1990) has called 'entryism'. In this research model, critical inquiry is concerned with the improvement of the human condition through IS, criticism of alienated and distorted practices, development of alternative IS forms and organizations, and with finding and enclaving an arena for emancipatory IS activity.

This research sets out to achieve this aim, within limitations discussed below and outlined in the research framework (Section 4.2). Critical research is an ambitious undertaking, more so in that it attempts to come to terms with the intrinsic tension arising from the effort to study agency and structure without the dualism of micro-macro. Due to various constraints, including time limits, and difficulties in conducting all-encompassing study, researchers often tend to focus on some aspects, more than on others. This is noted by Morrow (1994) who puts forward an analytical presentation of the relationship of critical theory, methodological strategies, and various contexts of empirical research. He identifies “three moments of the research process that define focal points for research strategies: (a) structural analyses of *system integration*, (b) interpretive analyses of *social action* by individual and group agents, and (c) *mediational analyses* that reveal the simultaneous operation of agency and structure - the ideal outcome of inquiry according to Giddens²¹ theory of structuration” (p 276).

Analysis at the level of system integration focuses on macro process, e.g. on a process of reproduction and transformation of agency/structure relationships over time. While, social action analysis are processual and interactionist, involving both individual and group processes. Although the focus is on actors constructing reality through praxis, the underlying assumptions (even if not explicitly stated) is that social actions are conditioned by systemic relations.

Morrow (1994, p 276) points out that critical research, when well done, even if it focuses on any one of these moments (or substantive domains), tries to remain conscious of the other two in a way it frames and executes the research process. Thus, this research although focusing on the second category – social action – also tries to frame the research within the first category (e.g. through the discussion of information society and analysis of health policy in Britain). However, as the links between agency and structure are not explored explicitly (or at least not deeply / thoroughly enough) we cannot claim that our research could be classed as belonging to the last category.

²¹ Giddens (1984).

4.2 Research framework

Our research programme is ambitious. It is not easy to study the historical development of the social conditions, and the current social structures and processes that limit the participants' actions and condition their understanding.

This research does not focus on a particular group, e.g. workers, women or an ethnic minority but takes their interests into account by investigating how and by whom telehealth's meaning is created and thus by implication whose interests are served. The thrust of the research is not directed at the capitalist organisation of society in general but rather it aims to expose prevailing techno-medical rationales. Although one could argue that these depend or at least are influenced by the capitalist system, this research has adopted a more limited aim. Ultimately its focus is on telehealth in the context of our society. Within the area of telehealth the critical theory tradition encourages the investigation of dominant rationalities, e.g. scientific, medical, managerial, and presumptions that the information systems discipline is based on. Thus it inspires us to look for alternative understanding of health, well-being and how technology could support those, rather than seeing the development of 'scientific' or technological solutions as the only option. It encourages the consideration of alienating features of technology and more broadly technological systems. It supports the investigation of current trends (e.g. in the telehealth industry) and processes that shape the meaning of telehealth.

This research aims to explore current applications of telehealth and options that are or should be made available. As telehealth is a developing technology it can be shaped to serve particular goals. Although the researcher is not actively involved in the development process she does seek to influence it by studying how such technologies are being developed, whose interests are taken aboard and what aims are being pursued. In this task the works of critical theorists help the researcher to understand the complexity of the situation, the underlying processes taking place (e.g. processes of communication and construction of meaning) and thus to avoid (hopefully) over-simplifications and misrepresentations. Such an approach also contests the notion of inevitability and shows how we are conditioned to accept an techno-economic regime and believe alternatives to

be unrealistic. Thus these works force the researcher to address her assumptions and beliefs and the way they influence her work.

From this, we identify a number of concepts introduced by different critical theorists, which help to conduct critical research, by making the researcher question the findings and search for alternative and not so immediately obvious reasons for phenomena at hand. Thus, the researcher must be aware of and question:

- prevailing technological or scientific-technical rationality,
- standardisation of life and its mechanisation,
- alienation,
- process of reification²²,
- instrumental reason²³,
- double hermeneutics²⁴.

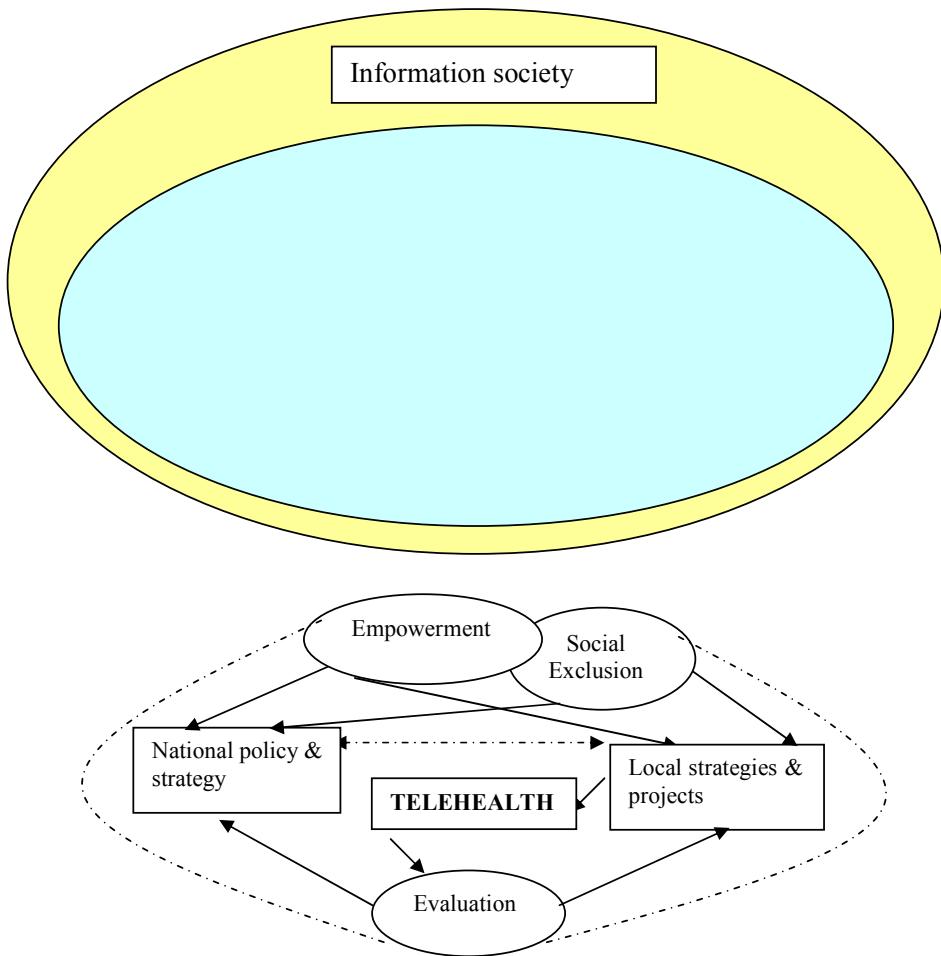
In order to understand the context of current situations as fully as possible the researcher familiarised herself with varied theories of society and works discussing the relationship between society and technology (discussed in this chapter, as well as in Appendix A). This preliminary work produced a background for the further analysis. However, within the limitations of a PhD investigation it is impossible to study all the factors at equal depth. Thus, we have decided to focus only on some aspects through which we can build a picture of telehealth. These are national health policy and strategies, local strategies, initiatives and individual projects. Our case study of inter-linked projects in our borough is critically interpreted in relation to the concepts of empowerment and social exclusion, and evaluation practices.

²² Reification, means literally, to make into a ‘thing’. It is a process through which social agents came to identify falsely with a social reality that they perceived as ‘natural’ – even though it was created originally by them (see Morrow and Brown, 1994 p 95).

²³ As conceptualised by Horkheimer, Adorno and Marcuse; it implies the spread of rationalisation (scientific rationality) to the life itself and the extension of means-end rationality.

²⁴ The reciprocal relationship between individual and society.

Figure 2 – Research Framework



All these perspectives are intertwined and help us to understand what meaning(s) telehealth is acquiring. Thus by considering underlying concepts and ethical traditions behind information society, as well as medicine and information systems disciplines we can contextualise telehealth.

Projects, policies and recommendations, and their impacts (or rather influence), are understood within a larger trends in the society, including demographic and health trends, different lifestyles, peoples attitudes to new technologies, dissemination of ICTs at home, beliefs and values (e.g. with regard to the role of the state in health provision, the expectations of the quality and type of services provided, and general attitudes towards health and medicine, e.g. relying on professionals or self-help).

The local projects and initiatives are analysed in relation to national health policy and strategy. The study of policy documents is an important part of this research. This is because it is assumed here that policy helps to shape telehealth, e.g. by setting general framework for activities, providing financial initiatives, initiating projects and by shaping people's expectations. We subscribe to the critical theory tenet that social groups and individual people work within established structures. Of course this includes a number of complex factors, e.g. political system and current socio-economic situation. Health policy papers to some extent influence economic and social environment of health care delivery (particularly in the NHS) by allocating funding, introducing organisational reforms, and creating an overall vision, and setting aims and goals for the healthcare delivery in general and telehealth in particular. Thus, British health policy documents are analysed through the perspective of telehealth.

We are also particularly interested in evaluation practices because we see them as manifestations of underlying values. By looking at evaluation criteria applied to different telehealth technologies and projects we can discern what factors were deemed important, whose interests were taken into account and to what extent. Thus, through evaluation criteria we can learn about meanings of telehealth, for example if telehealth is seen in terms of control or empowerment, efficiency or better service. Similarly, the process of evaluation itself (the way the evaluation was conducted and what methods were applied) as well as the participants (who did the evaluation, on whose behalf and whose views were sought) indicates whose interests were represented and who influenced the development and application of telehealth technologies. Also, evaluation processes reveal what groups of stakeholders are having an active part in the process of shaping telehealth.

Our interpretation of policy, strategies and projects centres around the notions of empowerment and social exclusion. We identify social exclusion as a major theme in information society literature, as well as national and local policies and projects. We explore to what extent the projects and initiatives studied help to eliminate social exclusion. Thus, social exclusion gives us a (one of many) vehicle for assessing how 'progressive' telehealth projects are. Considering Marcuse's statement that the radical reconstruction towards emancipation demands a reversal of both the ends of

technological progress and the very forms of technology we try to explore if telehealth could be potentially transformed to embody the aim of social inclusion.

The assessment of 'progressiveness' of telehealth could be also done in terms of empowerment, e.g. of individuals, communities and workers. In many ways empowerment of individuals and communities is related to issues of social exclusion. We focus on issues of empowering individuals (patients and citizens) and communities. To a lesser extent we consider consequences of telehealth in terms of empowering or disempowering healthcare and social workers.

Empowerment and social exclusion are two concepts that have gained popularity through the 1990s and are widely used within current academic and political discourse across Europe. We see these notions as central to discussion on the nature of information society and we focus on them in our analysis of telehealth projects. However, both concepts are not straightforward and thus need further theorising.

Empowerment

Empowerment, like the concept of power itself, is a highly disputed notion, defined in many terms in different domains. It is also probably one of the most used and abused terms in current life (e.g. often appearing in organisations' promotional literature). Nevertheless, it does embody important notions central to our research. Thus here we try to grasp the different meanings of empowerment. Although the term has originated from social studies, in the last two decades, it has become very popular within the management literature (Argyris, 1998; Ehin, 1995). In this context it is mainly concerned with employee empowerment. There are many definitions of empowerment, some equating it with the transfer of power (Clutterbuck, 1994), with encouraging people to participate, be involved in decisions and activities that effect their jobs (Smith, 1996), or more generally enablement to do things they would not otherwise be able to do (Jenkins, 1996). In practice empowerment (in sense of transferring power and responsibilities) is often substituted for involvement and participation. Initiatives for user involvement can however be disempowering and empowerment is not only concerned with people's participation. Furthermore, there is a difference between 'feeling empowered' and 'being empowered'. The notion of 'feeling empowered' may encourage organisations (not only

private but also public) to concentrate on 'spinning', propaganda and making cosmetic changes.

To go beyond a narrow focus on individual employees we draw on Beresford's categorisation of different strands in the development and usage of empowerment (discussed in Cullen, 1996). These are: professional, liberational, self-help and exchange models of empowerment, all in a complex relationship with each other.

The *professional model* of empowerment is perhaps the most narrow and limited. It is concerned with personal empowerment, manifested in people taking increased responsibility for managing their lives, relationships and circumstances within conformity to, rather than challenging prevailing societal arrangements or professionally set goals and norms. In this context, empowerment may be more accurately interpreted as creating opportunities, which enable and encourage a legitimised degree of power to be taken. Patient or client self-empowerment is therefore a more accurate description than 'empowering patients'. Although professionals cannot empower patients, practices and structures can be changed so that people no longer feel unable to exercise existing powers of control or choice. For example, organisations can become less opaque, consultations methods more open and based on dialogue.

The *liberational model* of empowerment is focused on broader social change, more so than individual empowerment, or rather it sees individual empowerment as achieved through broader social change. To this end it is concerned with the support, skills and personal resources offered to people, so they can self-organise in pursuit of change. Thus the movements of disabled people, service users and AIDS lobbyists seek to replace the individualised market model of welfare with a collective commitment to people's needs and to their civil and human right, and to achieve structures that enable this (Cullen, 1996).

The *self-help* model of empowerment promotes a model whereby citizens take control of their own lives through their own efforts and obtain control of the resources they need to do so. This behaviour is often motivated by dissatisfaction with established structures and services. It may lead to questioning the authority and knowledge of professionals and the organisations they represent (e.g. public health and welfare bureaucracies). An

example of such behaviour would be a person, who armed with health information found e.g. on the Web, challenges the doctor's diagnosis and perhaps chooses an alternative treatment.

The *exchange* model of empowerment is based on negotiation and mutual exchange of resources (usually knowledge). It recognises that both service users and professionals possess expertise, though in different areas. It acknowledges that people (e.g. patients) not only have needs but also contributions to make. They can use their expertise and skills they have to achieve goals they have themselves defined. In this model the role of the professional is to encourage clients to see themselves as able to have some impact on their problem, and more so to actively support them in their effort to solve that problem.

Although getting beyond a simplistic view of empowerment, these models do not adequately illustrate contradictions and tensions of empowerment. Different underprivileged groups may have conflicting interests, e.g. as in the case of woman rights groups versus minority rights groups (a minority culture may be oppressive to women) (Humphries, 1996b). Similarly, in case of health services empowerment discourse may privilege some groups while disadvantaging others.

As Humphries (1996c) points out, it is simplistic to think that empowerment is simply a matter of will, either on the part of those who are disempowered, or those who may be in the position to empower. Empowerment must be seen in the context of its political, social and local discourses. Individuals' strategies for change are influenced by their different co-existing identities, and are often in response to particular contexts at specific moments (Carabine, 1996). Such an understanding of empowerment is influenced by post-modernist and post-structuralist theories, as it embraces contradictions, uncertainty and provisionality (Fawcett and Featherstone, 1996).

The notion of empowerment bears similarities to emancipation, the term used by critical theorists. At this point our understanding of the concept of emancipation must be clarified. When we mention emancipation two simple questions come straight to mind. Who is going to be emancipated and from what? Additional question – how? – is dependent on the answers to the first two questions. According to Hirschheim and Klein (1994) emancipation is concerned with the process "through which individuals and

groups become freed from repressive social and ideological conditions, in particular those that place socially unnecessary restrictions upon the development and articulation of human consciousness". Critical theorists saw the process of emancipation at a structural level as inseparable from the struggle for self-emancipation. Their writings strive to undermine forces limiting people's capabilities to understand different situations and to act in different ways. They perceived those forces not just in terms of modes of production but also contemporary culture, authoritarianism, bureaucracy, etc. They sought to politicise the social and domestic sphere (something that feminists equally aim to do), and to show that emancipation can take different forms and be directed at different 'oppressors' (Held, 1980).

Social exclusion

Although social exclusion is present predominately in discussion of social policy (Byrne 1999), it also often features in debates about information society, usually in the terms of a scenario of information rich and information poor. Exclusion here is generally framed in terms of both a lack of ability to access information, including lack of resources or access to technology, and a lack of knowledge or understanding as to what to do with information.

Burchardt, et al. (1999) note social exclusion as a 'contested term' and trace the European (in particular French) origins of the concept, and contrast it with the cruder concepts of poverty, deprivation or the more binary concepts of ghettoization and the underclass used in the American literature. The term is generally defined in terms of an understanding of people or groups circumstances within society in a dynamic, rather than a static way. People are bound up in a process (or multiple processes) of exclusion, rather than being just excluded (or included) from society. Hence, people are included or excluded in various dimensions and various degrees over time; in Burchardt, et al. (1999), these dimensions of exclusion are explored through empirical data in terms of consumption activity, savings activity, production activity, political activity and social activity.

Hills (1997) similarly stresses that social exclusion should not be seen as a static concept, rather it should imply changes over time and dynamic processes at work. People's

circumstances change and thus ways in which they may become socially excluded. Furthermore the concept of social exclusion is not absolute or timeless. It depends on complex inter-related issues, including social circumstances, cultural values (some people choose not to have a television or healthcare), and on the comparative social and economic status. Changing social, economic and technological trends influence our perceptions of what is necessary (e.g. at what point and why a lack of Internet access comes to be seen as excluding?).

Silverstone and Haddon (1997; 1998) explore the relationship between ICTs and social exclusion within a framework of information society. They define social exclusion as the processes of marginalisation and the creation of disadvantage among certain groups in society. In line with most discussion, they argue that seeing social exclusion in terms of two opposite groups of 'haves' and 'have-nots' is too simplistic. Not only is there a continuum between those two extremes but different models of social exclusion exist (Silverstone and Haddon, 1998).

The first, deprivation model, adopts a concept of relative deprivation and a key term is 'participation in society'. Deprivation can then be material (in terms of diet, housing or environment) or social (e.g. educational, integration in the community, participation in social institutions, employment rights, etc.). For example if people are unable to do what is commonly regarded as minimum in certain respects then they are deprived. It has been proposed that this concept should include not being able to socialise (go out at least once in a fortnight) or having to live in a household without a TV or a telephone. Clearly, deprivation can be partial or specific, limited to a particular set of options (e.g. elderly people may be well off and yet excluded from certain activities due to their fragility).

The second, inequality model is more process oriented and examines how mechanisms of social differentiation might advantage some and comparatively disadvantage others forming the basis for inequalities. This model embraces research on gender, class and ethnicity and how these may affect life chances in education, employment and housing. An example of this 'relational inequality' would be a fairly well-off woman who is finding it difficult to go back to work because she lacks IT skills, or a child whose education is impaired due to poor access to health services.

Notions of social exclusion have, not surprisingly, been reflected in health policy initiatives and in recent years have formed a significant part of the basis for proposals for reform of health provision. (These are further discussed in Chapter Five.)

4.3 Research methods

The above section outlined *what* should be studied, identifying areas that we will focus on. The following paragraphs describe *how* such research is conducted.

The assumption that social reality is socially constructed calls for the ideographic approach, i.e. obtaining first-hand knowledge of the subject under investigation, studying and understanding individuals in relation to their uniqueness.²⁵ Ideographic research pays greater attention to description and discovery and places less emphasis on testing and verifying of hypothesis. While positivistic standpoint calls for nomothetic approach that focuses on scientific rigour and the process of testing hypotheses. This requires a systemic protocol through the construction of scientific tests and the use of quantitative techniques for the analysis of data. Yet, this polarisation between ideographic and nomothetic approaches denies the comparative nature of all social knowledge. Thus, even the ideographic emphasis on uniqueness of each case cannot escape the fact that the understanding of that particular case is enabled by knowledge of other cases. (This concept reflects Gadamer's notion of prejudice.)

In this thesis, following Morrow (1994) we use the terms extensive and intensive research design. Extensive research involves a very large number of cases (aiming to present a representative sample) thus leading to only some properties being analysed. In contrast, intensive research designs consider small numbers of cases that are analysed at greater depth. This implies use of qualitative methods (but not necessarily exclusively). This research is intensive and it applies qualitative methods.

4.3.1 Case study approach

²⁵ We do not, however, subscribe to the solipsist position that does not recognise the existence of any world outside the realm of individual consciousness.

According to Morrow (1994, p 253) "... case study methods coupled with nonstatistical comparative case studies are most compatible with the research problems identified by critical theory and its concern with intensive research designs.". Thus, the main research strategy selected for doing this research is an intensive, exploratory case study that spans a geographical area of the London Borough of Lewisham and the local Health Authority. To define the concept of case study we present two definitions, first one from the health service tradition and the second from information systems discipline.

A case is a single unit in a study (e.g. a person or setting, such as a clinic or hospital). A case study is a research method which focuses on the circumstances, dynamics and complexity of a single case, or a small number of cases. The numbers are necessarily small as the cases are intensively explored in-depth, retrospectively, currently and sometimes over time, through, for example, detailed observations, interviews and information from records. Multiple research methods are usually employed in order to investigate fully complex situations and to validate the findings ... (Bowling, 1997 p359)

A case study examines a phenomenon in its natural settings, employing multiple methods of data collection to gather information from one or a few entities...The boundaries of the phenomenon are not clearly evident at the outset of the research and no experimental control or manipulation is used... The case study researcher may have less a priori knowledge of what the variables of interest will be and how they will be measured. (Benbasat, et al, 1987 p 370)

Both definitions, although stemming from different traditions, are complimentary. The first one focuses more on how to conduct the case study, the second on the phenomenon of the case study itself. Case studies can be considered as either qualitative or quantitative methods. They can also use a combination of qualitative and quantitative approaches to data gathering, e.g. observation and structured questionnaires. For example Sidell (1995) in his case study of elderly people's understanding of health and illness combined qualitative interview methods, analysis of official statistics and policy analysis. Yin (1994) provides another viewpoint on case studies. He defines a case study as an empirical inquiry that investigates a phenomenon within its own context, using multiple source of data collection. Not only does he suggest that a case study may use qualitative or quantitative data but also that they do not have to be based on ethnographic or participant observation, instead performing secondary analysis of data.

Although there has been a tendency in medical research to mainly focus on the experimental method, case studies are used for investigating organisations (e.g. hospitals) and concepts (health/illness). Within information systems field case study is widely accepted. For example, in MIS research published in journals during the period between 1970-79 case studies were the most commonly employed empirical strategy (Hamilton

and Ives, 1992). Recently there has been a growing interest in interpretative case studies (Klein and Myers, 1998; Orlikowski, 1996; Walsham, 1993; Walsham, 1995).

There are, however, limitations inherent to this method. Galliers (1992) identifies three main problems. One is the generalisability of results, because only a limited number of case studies are usually undertaken. Secondly, the interpretation of information depends on the researcher, thus there can be many interpretations of the same situation. Finally, there is the lack of control of individual variables resulting in the difficulties in distinguishing between cause and effect.

Despite these problems, case study is seen as a valuable method for the study of complex social settings and during the exploratory, early stages of research, and for generating hypotheses (Bowling, 1997). This view is supported by Galliers who states “... case studies are helpful in developing and refining generalizable concepts and frames of reference” (Galliers, 1992 p155). Similarly, Walsham (1993) argues that interpretive case studies are best suited research method for doing research within the interpretive paradigm because they can provide a means of linking a broader view to continuous processes and their relation to context.

Although action research may seem as particularly suitable for critical research (Kuutti, 1991; Ngwenyama, et al., 1997), it shares the limitations and advantages of case study but it also introduces additional hazards, e.g. the researcher may too closely identify with a particular group or find it difficult to sustain the dual role - of the researcher and the subject. Also action research implies a very close working relationship with the organisation(s)/groups under study which can prove difficult to secure. Likewise, ethnographic approach, although potentially leading to a better understanding of the study subject, requires detailed observations over a long period of time. Again, it was not be possible for the researcher to obtain such a high level of co-operation from the organisations/groups and communities being researched. Thus a case study seems to be the most appropriate and feasible method to be used in this research.

The case study used in this research is exploratory and critically interpretative. It aims to provide accounts and critical interpretations of the projects. It is conducted by using a variety of data collection techniques, including largely un-structured interviews and when

possible direct observation. These techniques were identified as most appropriate for gaining insight into people's ideas/perceptions of telehealth and issues related to it (e.g. empowerment and social exclusion, etc.). For example, Comstock (1982) and Johnson (1999) consider interpretative interviews as an important part of empirical critical research, aiming to gain an understanding of participants' meanings, values and ideas. In addition, the analysis of different documents offer different (often official) viewpoints, additional details and background information on the projects. The case study covers a geographical area of the London Borough of Lewisham. It aims to explore what telehealth projects are taking place within this area. This is done in the context of British health policy and local council policies.

4.4 Research undertaken

In its preliminary stages, this research involved an exploration of a wide range of literature spanning theoretical works discussing the relationship between society and technology, information society theories, information systems theories and applications, health and medical issues, as well as more specialist telemedicine and telehealth journals. Towards the end of this phase critical theory literature was studied at greater depth to increase the researcher's understanding of the main concepts and their application to the research.

A secondary analysis of government survey data was conducted to assess general demographic trends (including health statistics) and characteristics of households (e.g. their composition, income and expenditure patterns and durable goods ownership, including information and communication devices). However, as the research progressed it became evident that quantitative data analysis were not well suited to the revised research subject. Nevertheless, this data provided a background information on trends that influence government policies and that may effect telehealth services in general and the projects under study in particular.

Continuous literature search into telehealth was undertaken, highlighting relevant issues (e.g. viability of technology, assessments methods, legal problems, etc.) and providing descriptions of projects taking place. Internet searches resulted in information about how

telehealth is evolving independently of the formal institutions of health care, for example via support groups on the Internet or the 'emergent' technologies and services offered by private companies. In addition a manager in BUPA (a private healthcare provider) was interviewed to find out the extent of their involvement in telehealth.

This first phase of the research delivered a theoretical, demographic and political (policy) context for this study. It also proposed different perspectives on telehealth and provided background information about telehealth (e.g. main initiatives and projects in the UK and Europe, current 'independent' developments and main concerns and expectations regarding telehealth).

In the second phase of this research a case study of telehealth in the London Borough of Lewisham was conducted, incorporating a number of projects and organisations. This was to explore how telehealth ideas are being manifested in practice, i.e. in local strategies and projects. The aim of this phase was to identify what main concerns or 'underlying philosophies of telehealth' guided the individual or groups of people involved in the projects, what approaches to telehealth have been adopted by them, and finally what was the impact of the approach chosen on the development, implementation and evaluation of the project.

A small number of Lewisham councillors were interviewed with regard to Lewisham Borough's overall policies, health and IT strategies and their relation to national policies, as well as any direct involvement in telehealth projects. Two one-day open meetings were attended that brought together various people living in Lewisham, including local councillors, representatives of citizen's groups, non-governmental organisations, private businesses and anyone connected to Lewisham. The first meeting 'Connected Community' provided a forum for discussions and workshops about the role of ICTs in the local community and how ICTs should be deployed to benefit people. Many hopes and fears were articulated by different participants (including problems of exclusion, lack of skills and access to new technologies). The researcher ran one workshop devoted to telehealth. The second meeting focused on health and healthcare, and telehealth was only a part of a wider agenda. In addition the researcher attended a meeting organised by the representatives of the Institute of Health Services Management (IHSM) devoted to telemedicine and telecare in the local community. The meeting was attended by

representatives of health organisations (GPs, Lewisham Hospital, Mental Health Trust, Lewisham Health Authority and some private organisations). Following the meeting the researcher made contact with most of the participants and subsequently was able to interview them. Often interviews had an effect of a snowballing process, where one informant would suggest someone else to speak to, and so on. Information collected via these means was supplemented by studying official as well as internal reports and other documentation and promotional literature.

One of the projects investigated - SEAHORSE - involves a number of stakeholders, including Lambeth, Southwark and Lewisham Health Authority and Lewisham Local Authority. This is a very interesting project that adopts (or proclaims to adopt) a user centred model for telehealth services. It also focuses on the notions of self-help, empowerment and social exclusion, which are at the core of this research. Our investigations included in-depth interviews and when possible direct observation to investigate how the notions of self help, empowerment and social exclusion were interpreted and acted upon by different people (project initiators, co-ordinators and developers). For example, the researcher attended a two-day meeting for the project's participants, discussing progress of the project and setting an agenda for further work. This was supplemented by reading project's reports.

All the interviews were transcribed in full and their context was interpreted using hermeneutical methods. Coding, suggested by Miles and Huberman (1994) as one of the step in interpreting qualitative data, was carried out as a means to help the researcher to label and retrieve data. This method was used in conjunction with multiple readings of the texts to preserve context of the identified themes. The lists of interviews can be found in Appendix D.

4.5 Summary and conclusions

Critical theory does not prescribe specific methods for empirical research. It does not offer precise guidelines or steps to follow. Nor should we try to over-methodologise critical theory. Precisely because it tries to capture complexities and nuances in the world it cannot be reduced to 'steps'. However, this poses difficulty for a researcher, in terms of

how to conduct the research and how to judge its quality. This chapter discussed some general principles of conducting critical research. Thus, whatever methods are used, it is important that the researcher addresses his/her underlying assumptions, as well as those of the sponsor (if any) and participants (e.g. organisational actors interviewed). Moreover, resulting knowledge should be evaluated with the same critical lenses. Thus, critical research must be self-reflective. Guba and Lincoln (1994) propose a number of criteria for judging the goodness or quality of inquiry. Firstly, its historical situatedness, i.e. that it takes account of the social, political, cultural, economic, ethnic, and gender antecedents of the studied situation. Secondly, the extent to which the inquiry acts to erode ignorance and misapprehension. Finally, if and to what extent it spurs people to action, that is, to the transformation of the existing structure. These criteria are hard to satisfy, and moreover they are very subjective. The researcher can only strive to fulfil them and hope that others will judge her work to be satisfactory.

The research framework proposed aims to ensure that this research captures the situatedness of telehealth – primarily through the study of national health policy, strategies and projects in the London Borough of Lewisham, but also by relating them to wider societal trends (drawing on the information society and post-modernist literature). We acknowledge, however, limitations of such an endeavour, as it is impossible to capture all aspects and contexts of telehealth on different levels. The study aims to ‘erode ignorance and misapprehension’ by questioning the motivations for developing telehealth systems and considering potential consequences of such systems. The framework reflects the critical-emancipatory interests of the study by relating telehealth to the concepts of empowerment and social exclusion. Taking into account the above principles, the following chapters report on the research conducted and deliver critical analysis of the findings.

CHAPTER 5

National health policy and telehealth

The previous chapter introduced the theoretical background of this research, critical theory and its re-evaluation in relation to more recent theories, particularly post-modernism and the information society. A number of principles for doing critical research were explicated. Firstly, that critical research must be guided by critical-emancipatory interests, focusing, for example, on power, domination, alienation and related concepts (e.g. empowerment and social exclusion in the case of this thesis). Secondly, the research is guided by the underlying assumptions, particularly that facts can never be isolated from values, that knowledge and thought is mediated by power relations, and that technology is not autonomous or neutral but embodies social values in its design and use. Thirdly, the researcher must strive for 'situatedness', by placing the research subject in its social, historical and political context, highlighting social conditions and structures that may limit people's actions and condition their understanding. In doing so, the researcher aims to explicate the double hermeneutics, i.e. the reciprocal relationship between the individual and social structures.

It is this historical and political situatedness of telehealth that is explored in this chapter, primarily through the health policy domain. The focus is on how and in what way policy influences current and future meanings of telehealth, for example by privileging some views and actions over others, and shaping people's perceptions of the healthcare process and telehealth. The chapter highlights controversies and tensions in meanings that policy papers give to telehealth, questioning their obvious interpretations and looking for hidden agendas. It then explores how telehealth, embodying some of those

meanings, might further reify social practices, and support particular understanding of the healthcare process.

In conducting such analysis, this chapter utilises hermeneutics as a long-established way of reading policy documents. In particular, the concept of the hermeneutic circle, as developed by Gadamer, (and introduced in the previous chapter) is employed. Thus we follow the hermeneutic circle in interpreting and re-interpreting the documents and moving from the whole to the parts, and from the parts to the whole. We also bring to the forefront the concept of foreknowledge. Two models; Miles' scenarios of information society, introduced in Chapter Three, and Boland's fantasies of information, discussed in section 5.1.3, form a part of our foreknowledge. We have found them to be particularly useful in our interpretations of policy papers. These models help us to take a step beyond hermeneutical interpretations towards critical analysis.

5.1 National health policy and telehealth

The concept of telehealth is new to health policy and it is only explicitly discussed in a few passages of recent health policy documents, although it has been elaborated further in the recent IM&T strategy *Information for Health* (1998). The discussion of telehealth is inevitably related to proposals for the employment of information and communication technologies (ICTs) in other areas (e.g. in hospital information systems). Thus, in order to improve our understanding of telehealth we need to acquire a broader understanding of how health policy embraces ICTs. Therefore, this chapter seeks meanings of telehealth in the policy and strategy context, but more generally seeks to unfold meanings of ICTs and how different intertwined factors present in policy documents shape understanding and expectations for health telematics. In doing so, this chapter discusses four principal policy papers: *Working for Patients* (DOH, 1989), *The Health of the Nation* (DOH, 1992), *The New NHS: Modern. Dependable* (DOH, 1997) and *'Our Healthier Nation'* (DOH, 1998)²⁶.

It is easy to overlook the importance of policy documents and to suggest that they become of relevance only when they (or if) are enacted. Certainly, we do not claim that

²⁶ Separate documents were produced for Scotland and Wales, taking into account regional differences in the health care provision. Recently a new white policy paper was published (DOH, 1999). However it is based on the consultative paper (DOH, 1998) and it does not significantly differ from it. This chapter does not discuss it.

policies are always carried out or that they become concretised in real life projects or structures. We acknowledge that bottom-up initiatives may not only influence the implementation of policy but also its substance. However, policy can set boundaries and framework, as well as provide resources within which implementation take place (DOH, 1998b). We also believe that policy documents, while not defining telehealth, are an important part of developing its meaning – in Swanson and Ramiller's (1997) terms, providing some of the organising vision. For example, policy documents set the context for the development of new technologies and services, and they provide the language of discourse, as policy is (to whatever degree) enacted. We could also interpret policy as providing the framework within which telehealth will be judged as a success or a failure. In very simple terms, if policy emphasises efficiency and cost cutting, services that do not contribute towards these goals, even if offering a better service for the population, may be deemed as failures (i.e. as unsustainable). Thus we see government policy as an important factor shaping health services, and hence the forms which health telematics and telehealth take. This is particularly true in the UK because the majority of the health sector is under (more or less) direct government control within the structures of the NHS. This view that national policy frameworks play a significant role in shaping healthcare telematics development and implementation is supported by findings of the EU-sponsored Telmed project (Consortium for the European Commission Directorate General XIII, et al., 1996).

5.1.1 British Health Policies and Health Telematics – the first reading

This section reports the first reading of the four policy papers, highlighting the main reforms they propose, as well as proposals referring to the application of ICTs, taking them in historical order. The white paper '*Working for Patients*' (DOH 1989) outlined fundamental administrative reforms, mainly the establishment of an 'internal market' in the NHS. This involved the separation of the service into purchasers and providers of care. These two parts were required to conclude contracts with each other. General Practitioners (GPs) were given an option to become fundholders, i.e. to control allocated

budgets for purchasing part of the secondary care²⁷ for their patients. In turn, consumers were given some freedom to choose their GP.

These reforms created an increased demand for administrative and managerial information systems (Melhuish and Norris, 1998). Purchasers required information from providers in support of contracts. For example Family Health Services Authority (FHSA) as the purchaser of family health services, needed to know what services were provided, if they were cost effective, of acceptable quality and whether services were meeting patients' needs. Likewise, a fundholding practice required a relatively sophisticated information system for monitoring and planning its provision and purchase of care and to administer budgets (Mackintosh and Shakespeare, 1995).

The white paper '*The Health of the Nation*' (DOH 1992) signalled another and equally significant policy shift; from medicine to health. The aim was to promote health, not simply health care, and to prevent illness in order to improve quality, as well as quantity of life. This stressed the importance of people taking responsibility for their health and suggested that a healthy population was the goal of policy. It promised individual opportunities and wider choices, facilitated by health education in schools and for the general population, emphasising the need for reliable and diverse sources of information about health. The paper proposed health-promoting action in different settings. Such settings would include healthy cities, schools, hospitals, workplaces, homes and environments.

Again information plays a central role. The paper stated that overall, more comprehensive health monitoring information was needed both nationally and locally. Monitoring health was described as "developing the information base for the health of the nation" (DOH, 1992 p 38, sec 5.3). The need for the measurement of health outcomes was also emphasised. In addition, it was envisaged that information systems supporting the flow of information from providers to purchasers would focus on the individual patient and that details of all interventions, treatments and outcomes over time and across all service providers and agencies would become available (without breaking

²⁷ Secondary care – specialist care, typically provided in a hospital setting or following referral from a primary or community health professional. Primary care - family health services provided by family doctors, dentists, pharmacists, optometrists and ophthalmic medical practitioners (DOH 1997).

confidentiality rules). These initiatives, as well as the provision of health information to citizens, strongly imply the extensive use of ICTs.

The white paper *'The New NHS: Modern. Dependable'* (DOH 1997), produced by the Labour Government shortly after election, discussed organisational changes for the health service, mainly the replacement of the internal market with a model of integrated care. It set out the challenges for the NHS as: providing high quality treatment, working with others to improve the health of the nation and reduce health inequalities, as well as tailoring the NHS to meet the needs of individuals. The aim was expressed as to deliver better care at lower costs. New, flexible, local ways of delivering health and healthcare, as well as the integration of health and social care services were promised. Primary care was to benefit from greater investments and the expansion of its role, including taking the responsibility for managing resources for both primary and some secondary care. At the same time its gatekeeping role was re-emphasised, seen as a good way of controlling costs of health care.

Health authorities were given a task of addressing the health impact of inequalities and co-ordinating health improvement programmes for their districts across health service organisations and other agencies. Thus, in co-operation with others, they were expected to create a framework for health, based on analysis of health needs and monitored by indicators of quality health care and population based outcomes. They were also to co-ordinate information and information technology plans across primary care, community health services and secondary care.

Another fundamental development seen within the policy was a shift towards the empowerment²⁸ of patients, or rather in the new language *consumers* of health services. This stems from the idea of more informed citizens but goes beyond it by indicating the power to make choices, take part in the decision making process, thus to influence not only one's own health but the process of health care provision as well. These ideas were described as fundamental and underlying the government's philosophy of health.

²⁸ The term 'empowerment' is used in the health/political discourse but it only appears in the health policy papers in relation to health professionals not patients. Instead, in the policy documents, patients were promised more rights and more choices, e.g. the ability to participate and to influence health care

The white paper stated that the NHS must change, so it is able to embrace rapid changes in science and medicine as well as to harness the potential of modern information and communication technologies.

The speed of change in science and medicine and the potential of modern information and communication systems require the NHS to embrace change. A modern and dependable national health service will capture developments in modern medicine and information technology. It will be built around the needs of people, not of institutions and it will provide reliable care. (DOH, 1997 p 2, para 1.6)

In contrast to the 1989 white paper, the role of information technologies was defined quite explicitly as supporting front line staff in delivering benefits to patients and bringing new services to communities and into individual homes.

A modern and dependable NHS needs to be supported by accurate and up-to-date information and information technology. In recent years, information technology in the NHS has been focused on supporting the transaction processes of the internal market. This has been at the expense of realising the potential of IT to support front-line staff in delivering benefits for patients. (DOH, 1997 p 20, para 3.15)

The paper promised some specific actions including the connection of every GP surgery and hospital to *NHSnet*, the NHS's own information superhighway, and electronic links between GPs and pharmacists. This, for example, would allow transfer of patient records, test results, on-line booking of appointments and receiving up-to-date specialist advice electronically. In addition, general information about health and illness would be delivered directly into homes over the Internet and emerging public access media (e.g. digital TV). A first step in this direction has been the establishment of *NHS Direct*, a 24-hour telephone advice line staffed by nurses. It is also worth noting that for the first time in these health policy documents the word telemedicine explicitly appeared. It was used in a spatial context, re-enforcing the traditional role of telemedicine: "developing telemedicine to ensure specialist skills are available to all parts of the country" (DOH, 1997 p 20, para 3.15).

The 1997 white paper was followed by the consultative green paper '*Our Healthier Nation*' (DOH 1998) which discussed overall health and health care strategies. The government's aim was defined as "To improve the health of the population as a whole" and "To improve the health of the worst off in society and to narrow the health gap" (p 5).

process and the access to more information (about health in general and the NHS in particular, including the performance of different Trusts).

Fighting health inequalities was linked here to tackling all kinds of inequalities. Social exclusion was identified as both one of the causes and the effects of ill health or disability. Strategies for communicating health information included a new web-site, *Wired for Health* - a window to other credible web-sites providing health information. This would be available to all schools and colleges through the National Grid for Learning, as well as to other organisations and individuals already having access to the Internet. The proposals to tackle health inequalities, complementing the Government's plans for Health Action Zones, included a network of Healthy Living Centres across the UK. Their aim would be to reach out into communities and raise local awareness on varied health issues, for example, diet, smoking and physical activities.

Summary of the 'First reading' of the Policy Documents - From the Whole to the Parts

The papers' authors (successive governments) have set out (quite deliberately) to reform the NHS. This sequence of white and green papers signals a sustained shift from medicine to health and from cure to prevention and health promotion. They convey a vision of a re-focused health care system based on a primary care sector that is serving a population which has the informational resources to manage their own health, and to participate more actively in the health care process (empowerment). This vision, particularly in the later Labour policy documents, is set against a broader requirement for raising the quality of care, tackling inequality, promoting social cohesion and, of course, controlling costs.

In all the papers ICTs are assigned an important role in the organisation and delivery of healthcare, contributing to the goals of increased efficiency, effectiveness and quality of care. Initially, they have been seen as having a conventional role in improving administration and service delivery. More recent papers place IT along medicine itself, and start to reflect new ideas for telemedicine, telecare and telehealth.

5.1.2 *Alternative interpretations – challenges and tensions in the policy texts (the second reading)*

Policy documents can be interpreted in many different ways. Policy papers might be accepted as 'straightforward' and the messages they convey taken as facts (rather than rhetorical statements). The 'preferred reading' (using Woolgar's term (1996)) embedded within policy papers encourages us to think of policies as generally 'good', for example leading to a better quality of care, reducing health inequalities and resulting in a healthier population. Likewise the preferred reading of the applications/services enabled by ICTs embedded in the papers, is of unproblematic technology/services that have demonstrated benefits and that 'work'. In subsequent readings of the papers, summarised in this section, we attempt to develop a critical understanding of the policies, highlighting challenges, tensions and possible problems inherent to them. To help us in this task we use as analytical tools Miles' framework (Figure 1 and Table 2 Chapter Three) and Boland's fantasies of information (described later on in this chapter). Miles' framework captures the typology of views of ICTs and the information society, proposing four alternative scenarios of the information society, placed on the axis of continuism versus transformism, and concordism versus antagonism.

Images of ICTs

Transformism versus continuism

All the policy documents deliberately set out to transform the health service and to reform the NHS. In 1989 '*Working for Patients*' document initiated the re-structuring of the NHS and encouraged the employment of new technologies to support the transformation of the health service provision. In the forward to '*Working for Patients*' (DOH 1989) Mrs Thatcher wrote:

Taken together, the proposals represent the most far-reaching reform of the National Health Service in its forty year history.

This transformation or - as it is referred to - modernisation is also strongly emphasised a decade later in the foreword by Tony Blair to '*The New NHS - Modern. Dependable*' (DOH 1997):

The NHS needs to modernise in order to meet the demands of today's public. This White Paper begins a process of modernisation. The NHS will start to provide new and better services to the public.

Despite the impetus to reform and modernise, the fundamental assumptions upon which the NHS was built remain intact (a continuist theme). The notion of a national health service free for all at the point of delivery and based upon principles of equality and equity was confirmed by both governments:

But major tasks now face us: to bring all parts of the National Health Service up to the very high standard of the best, while maintaining the principles on which it was founded; and to prepare for the needs of the future. (DOH 1989, Forward by the Prime Minister)

The Government has committed itself anew to the historic principle of the NHS: that if you are ill or injured there will be a national health service there to help; and access to it will be based on need and need alone - not on your ability to pay, or on who your GP happens to be or on where you live. (DOH 1997, Forward by the Prime Minister)

Within the documents such transformism and continuism positions are resolved in a very particular way; technologies are given a transformist role within a 'continuation' framework. Thus, although the structures may be altered, and the way services are delivered may change or even services themselves may be different, the underlying values will be preserved.

Concordism versus antagonism

Further examination of the papers also reveals that there are tensions between concordist and antagonist positions. The text can be read not only on the basis of what it incorporates but also on what it excludes. Thus, it is indicative that, despite the emphasis on a healthier population, *'The Health of the Nation'* (DOH 1992) did not give priority to health inequalities. It did not address 'causes of the causes' of illness, for example, social circumstances such as poverty or unemployment. This emphasis on individual responsibility for health coupled with attempts to monitor and to some extent control practices of health professionals reflect some of the characteristics of Miles' antagonist scenario. The government was criticised at the time for its unwillingness to tackle social reasons behind ill health, and for an excessive emphasis on targets that become ends in themselves (Gabbay, 1998). For example, according to the report by the University of Leeds (DOH, 1998b), the establishment of fundholding practices did not change GP culture evolving around caring for the sick individual, rather than promoting health of the population and no adequate incentives were introduced to support this shift. Thus although *'Health of the Nation'* had "an important symbolic role [...] its impact on local policy-making was negligible." (DOH, 1998b p 13)

The following statements from *'Working for Patients'* highlight antagonistic overtones in the policy:

... to ensure that all concerned with delivering services to the patient make the best use of the resource available to them, quality of service and value for money will be more rigorously audited. (DOH, 1989 p 5)

Those who take decisions which involve spending money must be accountable for that spending. Equally, those who are responsible for managing the service must be able to influence the way in which its resources are used. (DOH, 1989 p 7, para 1.16)

Delegation downwards must be matched by accountability upwards. (DOH, 1989 p 11)

These are proposals that challenge professional autonomy of health care workers by subjecting them to stricter managerial and financial controls. Information systems are seen implicitly as tools of control - for monitoring of practices and adherence to targets and budgets. Thus technology is taken out of its projected context of supporting clinical/nursing practice.

Some of the 'antagonist' characteristics may also be uncovered in the later policy papers, (although these are not so obvious as they use less direct language). Overall, the 1997 *'The New NHS: Modern. Dependable'* paper still places strong emphasis on efficiency and monitoring. This is evident in the texts below:

For the first time in the history of the NHS the Government will align clinical and financial responsibility to give all the professionals who make prescribing and referring decisions the opportunity to make financial decisions in the best interests of their patients. That will better attune local services to local needs. But the Government will set a framework of national standards and will monitor performance to ensure consistency and fairness. (DOH, 1997 para 1.22)

... the Government will develop a national schedule of 'reference costs' which will itemise what individual treatment across the NHS cost. By requiring NHS Trusts to publish and benchmark their own costs on the same basis, the new arrangements will give Health Authorities, Primary Care Groups and the NHS Executive a strong lever with which to tackle inefficiency. (DOH, 1997 para 3.11)

These proposals lead to potential conflicts. For example, there may be a conflict between different GP roles - as health promoters but at the same time gatekeepers to the other NHS services. Although GPs are given increased power to influence health services, not just their own practices (e.g. by forming Primary Care Groups and using their combined power and budgets to purchase services from different providers, including hospitals (DOH, 1997)), this means more administrative work, additional responsibilities and the necessity to adhere to budgets which may result in cutting levels of services (Chisholm,

1998; Gabbay, 1998). The policy also makes no acknowledgement that GPs are already overworked (or see themselves as so), and have little capacity to take on their new and central role. Furthermore, 'self policing' within PCGs may lead to tensions between individual practicesⁱⁱ.

Klein and Maynard (1998 p 5) call the paper a "triumph of style over content" and see the proposals as an implicit move towards a command and control of central management. They point out tensions between an educating role, based on persuasion of the new National Institute for Clinical Excellence, and policing, sanction-based role of the proposed Commission for Health Improvement, the establishment of which they see as the government's attempt to control what happens at the periphery.

The paper outlines information systems' role as "supporting the drive for the quality and efficiency in the NHS" (DOH, 1997 p 20). Efficiency and quality are, however, socially constructed terms. Efficiency in its simplest form is often taken as meaning cost control. Thus the concern is that health telematics used for this purpose may be contradictory to the ideas of social cohesion and user empowerment. Particularly since the goal of increased efficiency and at the same time better quality is difficult to achieve.

Furthermore, as argued in Chapter Three, technologies are not neutral in themselves but may be considered as structures and resources (Orlikowski, 1992), and if they embody the virtue of efficiency they may limit options open to their users. For example, particular rules may be enforced by an on-line referral system, making it more difficult to refer patients to specialists. Of course, we acknowledge that such technologies are malleable and they only become structures and resources through use (Orlikowski, 2000).

Potentially, however, an even more fundamental problem exists of such structures limiting people's perceptions of the world as well. In time, a particular way of thinking (e.g. seeing efficiency as imperative, or mandating a particular treatment) becomes reified and thus is no longer questioned. This point is better expressed by Hacking, 1981, p 25-26 quoted in (Bloomfield, 1991 p 710)

... bureaucracy of statistics imposes not just by creating administrative rulings but by determining classifications within which people must think of themselves and of their actions that are open to them.

Information systems, through supporting the collection and processing of data (e.g. on costs of treatment or prescribing habits of particular doctors) might be seen as facilitating the management in exercising power, and by supporting the efficiency of bureaucratic rationalisation, as reinforcing the shift of the control to rationalisers (Ferns and Mowshowitz, 1995). Furthermore, they facilitate the preoccupation with figures. Thus, as health policy bows to the public pressures, in its focus on waiting lists and times (e.g. for operations), IS supports recording and processing of such data. However, the concentration on waiting lists is not necessarily the best way to improve the health of the population and it does not encourage pro-active services (e.g. health promotion) (DOH, 1998b; Klein and Maynard, 1998). Waiting lists may be seen as a culmination of two forces: the 'political imperative' (as waiting lists were an election issue in 1997 and 2000) and 'bureaucracy of statistics'.

Nevertheless, some of the proposals in all the papers are 'concordist' in nature. For example the emphasis on the role of primary care and health promotion sets a context within which telehealth services might be developed and delivered. The programme of healthy schools, healthy workplaces and healthy neighbourhoods de-emphasises health promotion directed purely at individuals. Within these community settings telehealth could be regarded as technology supporting group rather than an individual behaviour and contributing to social cohesion (DOH 1992, DOH 1998). In contrast to earlier papers '*Our Healthier Nation*' adopts at times such a strongly 'concordist' aspirations or rhetoric:

In a modern and strong society, united by core values of fairness and compassion, it is vital that everyone gains from a national drive for better health. (DOH, 1998 p 9, para 1.6)

The causes of ill health do not, therefore, rest with individuals on their own or with Government on its own. They are shared by society. (DOH, 1998 p 26, para 2.36)

Within the spirit of social exclusion, fighting health inequalities is linked to tackling all kinds of inequalities (DOH, 1998)²⁹. Thus social exclusion is identified as both one of the causes and the effects of ill health or disability. Growing out of this approach comes a strategy for promotion of health information flows, both within the institutional world

²⁹ This is consistent with other British government policies that address the impact of social inequalities and social exclusion delivered in a number of paper, e.g.: Welfare to Work, the Crime and Disorder Bill, the national child care strategy, and the education white papers.

of health provision and in the wider community. The green paper (DOH, 1998) promises extra resources for such initiatives, promoting good health, particularly in the community setting. It is explicit in linking bad health to social and economic causes and to address them in a community setting:

Social exclusion involves not only social but also economic and psychological isolation. Although people may know what affects their health, their hardship and isolation mean that it is often difficult to act on what they know. The best way to make a start on helping them live healthier lives is to provide help and support to enable them to participate in society, and to help them improve their own economic and social circumstances. (DOH, 1998 p 17, para 2.7)

Thus social exclusion reflects the concern with achieving 'joined up thinking' in policy making, where health, economic and social issues are linked together and addressed as a whole. (This is a premise behind the Blair government's Social Exclusion Unit.³³) These proposals suggest the need for particular types of services that may, for example, help to decrease social exclusion of disadvantaged groups and communities. Employment of ICTs to fulfil such goal might be seen as a reflection of concordism in Miles' framework. These proposals are set against a vision of a new, more participative society, where people, given the right tools and support, take charge of their destiny.

Different passages even in the same documents create (for the interpreter) contradictory meanings for ICTs that could find their way into more than one quadrants of Miles' framework. Trying to reconcile these conflicting meanings we turn back to the whole. We conclude that the documents essentially introduce a strong managerial discourse ('managerialism') to the NHS culture. Thus, particular passages should be interpreted within the managerial ideology. This implies that telehealth may need to be developed in such a context, responding to the goal of aligning clinical and financial responsibilities, with emphasis on efficiency and effectiveness. In such a context telehealth can acquire meaning as a tool of control, introducing monitoring of practices or even imposing different work practices, and ultimately - as supporting the trend towards domination of managers over clinicians, contributing to the alienation of (some) professionals, standardisation of life and its mechanisation.

Yet, particularly in the recent papers (DOH 1997, DOH 1998) we deduce another discourse – of social responsibility and community values. Within this context telehealth and ICTs can be perceived as a tool applied to the goal of eradicating social exclusion and making the provision of health services more egalitarian, i.e. not dependent on

people's social class or geographical location. Those two discourses although not necessarily mutually exclusive, are nevertheless difficult to reconcile. Thus we turn our attention to a wider context. Behind the policy documents stands socially constructed reality (or realities), including the reality of New Labour values. Noting that conflicting meanings are present in this reality as well, we interpret the documents in the context of the striving for 'a third way' between societal/community values and individual responsibilities, but also, perhaps primarily so, in the context of economic pressures facing the NHS and the welfare state.

5.1.3 *Images of information – the third reading*

This third reading focuses on telehealth more directly, particularly on 'information' as part of telehealth. In the unfolding policy information plays an increasing role, yet it is often treated in a simplistic, de-contextualised way. A critical researcher needs to see beyond rhetorical statements to uncover how this discourse about information is built, and how it influences the telehealth's discourse (or in other words its organising vision).

Horkheimer and Adorno (1972a [1944]) suggest the Enlightenment myths of reason and rationality have partly replaced older myths. Nowadays, in information society and postmodernist discourses new myths of centrality of ICTs and information are dominant, and have permeated our daily lives. In this reading we intend to uncover those myths. To assist us with this task we introduce concepts of 'fantasies of information' (or as we would call it 'myths') as expressed by Boland (1987). Then we tease out images of information in the policy documents using those concepts. We provide our interpretations of selected paragraphs, and then we consider their meaning, i.e. meaning of the parts, in the context of the whole documents.

Boland's fantasies of information

The policy papers we study here emphasise the importance of information, within the NHS and other organisations, as well as for the whole population. Accounts of information also play a central role in the conception of telehealth services. Furthermore, the concept of information is central in the information systems discipline. Thus, it is important to focus on the images of information unfolding in the texts. We try to

interpret them within a horizon of our fore-knowledge, specifically referring to Boland's fantasies of information.

Although in his paper Boland (1987) draws on hermeneutics, his work nevertheless is strongly influenced by critical theory. In his discussion of data versus meaning, he criticises an assumption (that he believes is widely held in the IS field) that users of data systems employ a standard and shared set of interpretative structures to gain meaning from the data. This (for practical reasons, i.e. difficulties of researching the meaning) has resulted in focus on structured data. He points out that the critical theorists would argue that the shared, taken-for-granted, interpretative structures we use cannot be overlooked in this way. This is because they reveal much about the forms of legitimisation and modes of domination in our society, and thus are of central importance.

Although not pursuing this argument further, Boland's paper has a strong ethical dimension. It appeals for IS designs that support and improve the possibility for face-to-face interaction and that "take dialogue, interpretation and an individual's search for meaning as sacred" (p 377). Boland attempts to demystify fantasies of information, because he claims that "[o]ur images of information affect the way we are able to think about the world we live in, because today we define the world in terms of information and information processing" (p 365). He deconstructs the concept of information (information) and emphasises the importance of meaning and lived experience³⁰.

Boland (1987) identifies 'five fantasies of information' present in every day assumptions about information systems: (a) *information is structured data*, (b) *organization is information*, (c) *information is power*, (d) *information is intelligence and finally (e) information is perfectable*. These fantasies, he argues, deny the importance of dialogue in the creation of meaning and thus they are false representations of language and communication. As critical researchers, we could also argue that such fantasies create false consciousness by simplifying and reifying the social reality, or in Marcuse's terms, making it one-dimensional.

Information is structured data' fantasy de-contextualises information and denies or puts aside the notion that "information is really the *meaning* of data to a free, intentional human being" (p 370, author's emphasis). Thus it allows us to ignore the problem of

³⁰ Also see Introna (1997) for the explanation of the notion of in-formation.

interpretation. *Organisation is information fantasy* “ ... extends the fantasy that information is structured data and applies it to the entire organization. It turns the organization as a whole into structured data.” (p 371-372). The third fantasy - *‘information is power’* - distorts the idea of power relationships. As Boland, following Foucault, points out “Properly understood, power is a relationship, not an object.” (p 373). Thus, it cannot be given or passed on to people by an information system. “It [information] neither gives nor brings power [...]. Information is found in the lived experience of the human condition and the fantasies which delude us into looking elsewhere will only lead us to search in vain.” (p 370). While “The fantasy that information is intelligence, like the first three, continues to expand the fallacy of scientism. Now we reach beyond communication, beyond control and beyond power into the realm of the organization as designable mind. The fallacy that intelligence is an object, a refined example of structured data, is especially insidious because it provides the further and now complete separation of information from the human agent. [...] This fantasy allows the organization to be totally disembodied.” (p 374). The last fantasy - *information is perfectable* - brings the first four together and uses them to delude us to believe that there exist a possibility of perfect information and a perfect future that is designable and achievable.

These fantasies, ignoring as they do hermeneutic and critical understanding of the world, nonetheless often lie at the core of information systems design:

As opposed to the hermeneutic problem of continually accomplishing and re-accomplishing meaning, we are given a single, immutable meaning – without an actor, without a history, without a future. (Boland, 1987 p 376).

Helped by this critique of information, we provide our interpretations of the concepts of images of information present in the policy papers. To begin with we consider the following paragraph:

providing knowledge about health, illness and best treatment practice to the public through the Internet and emerging public access media (e.g. digital TV). [...] The aim will be to create a powerful alliance between knowledgeable patients advised by knowledgeable professionals as a means of improving health and healthcare. (DOH, 1997 p 20)

This text reflects an *‘information is structured data’* fantasy. In a sense it goes even further as it equates data with knowledge. It denies that data must be made meaningful to become information and information needs to be internalised and contextualised to become

knowledge. Investigating how people understand, translate and act upon information, including health messages and promotions is necessary if we are to use telehealth effectively to this end. Furthermore, even if we accept the notion of 'data equals information equals knowledge', the idea that health information will result in people adopting healthy lifestyles has to be questioned. As Abel-Smith (1994 p 44) points out: "Health knowledge is not enough to change behaviour because people become prisoners to their social and economic environment". To some extent these limitations are recognised when linking health to action against social and economic deprivation and within a community or group context as in '*Our Healthier Nation*' (DOH 1998).

The cited paragraph also gives a sense of an '*information is power*' fantasy when it implies that knowledge (or rather data) will be a base for a 'powerful alliance' between doctors and patients. Yet, it is simplistic to assume that the relationship between patients and health professionals will change (with patients gaining more power) because of telehealth applications, or even that telehealth plays any significant part in it. Nevertheless, information (and ICTs, which enable easier dissemination of information as well as access to non-governmental or non-establishment sources) might be seen as the pre-condition of power even if it does not necessary result in power.

There are other, perhaps more basic problems with the vision of informed patients using new ICT-based informational resources, and taking charge of their health. These include, for example, a problem of universal access to new technologies and services, and lack of skills to utilise them. To some extent, the papers acknowledge these problems and try to address them, e.g. through the proposal to create Healthy Living Centres with access to '*Wired for Health*' web site. Similarly, difficulties with health promotion are acknowledged and addressed (at different levels of sophistication) in the policy papers. '*The Health of the Nation*' recognises the problem of inconsistent messages from different sources and (rather simplistically) proposes to remedy this through 'clear and authoritative' advice from the government. A deeper understanding of problems concerning health promotion is conveyed in '*Our Healthier Nation*' (DOH 1998):

For people to be able to make an informed judgement on risk they need to be able to understand and weigh up the evidence. They need to be able to use the information provided. It is very important to communicate the right information in the right way. (para 3.23)

Yet, even this paragraph betrays a notion of '*information is structured data*' and '*information is power*' as it implies that people can rationally process data, consider it as 'evidence', and providing conditions are met - feel empowered to act upon it. It also invokes a strong sense of '*information is perfectable*' fantasy as it expresses the belief that 'the right information' and 'a right way' of presenting it exist.

Other fantasies are also reflected in the text. Consider the following:

A key feature [...] is that doctors, nurses and other professional staff have much more information at their fingertips about the care their patients are getting. Their involvement in the development [...] has also ensured that the new systems are actively used for the benefit of patients. (DOH, 1989 p 16, para 2.14)

In the community: patients will benefit from quicker test results, up-to-date specialist advice in the doctor's surgery and on-line booking of out-patient appointments, when we connect every GP surgery and hospital to NHSnet, the NHS's own information superhighway. (DOH, 1997 p 6, para 1.12)

And in order to guarantee that patients have quicker access to local services, the Health Authority will coordinate information and information technology plans across primary care, community health services and secondary care. (DOH, 1997 p 27, para 4.12)

Reading of the above paragraphs reveals that they each succumb to '*organisation is information*' and '*information is intelligence*' fantasies. A seductive but misleading metaphor of '*information at fingertips*' is employed in the first text and all three paragraphs express a simple, deterministic link between IT and better advice for patients and a quicker access to services. Thus, information is separated from the organisational context or human agency.

So far, our interpretation has focused on the parts of the text, now following the hermeneutic circle, we turn to the whole and interpret the paragraphs in context of the documents. As we have noted before, a strong managerial discourse runs through all these papers. This discourse emphasises outcomes and employs simplified notions of an organisational and social reality in the search for a 'perfect' organisation. Thus, it could be said that the papers as a whole perpetuate the '*information is perfectable*' fantasy and by implication – all other fantasies that build up to this final one. For example, although the 1997 white paper includes paragraphs stressing the value of experience and local knowledge, nevertheless it creates an image of a future perfect organisation delivering unified, seamless quality care. This is to be achieved in particular by adhering to new evidence-based and information-driven National Services Frameworks and guidelines

from the National Institute for Clinical Excellence, and applying strong and directive clinical governance arrangements. Thus this perfect state is going to be reached, at least partly due to the creation and dissemination of 'perfect' information.

Fantasies of information and notion of in-formation can be further related to the notion of instrumental reason and im-mediacy, discussed by Horkheimer and Adorno:

The task of cognition does not consist in mere apprehension, classification, and calculation, but in the determinate negation of each im-mediacy. Mathematical formalism, however, whose medium is number, the most abstract form of the immediate, instead holds thinking firmly to mere immediacy. Factuality wins the day; cognition is restricted to its repetition; and thought becomes mere tautology. (Horkheimer and Adorno, 1972a [1944] p 27).

Concepts have been reduced to summaries of the characteristics that several specimens have in common. By denoting similarity, concepts eliminate the bother of enumerating qualities and thus serve better to organize the material of knowledge. They are thought of as mere abbreviations of the items to which they refer. Any use transcending auxiliary, technical summarization of factual data has been eliminated as a last race of superstition. Concepts have become 'streamlined', rationalized, labor-saving devices ... thinking itself [has] been reduced to the level of industrial processes ... in short, made part and parcel of production. (Horkheimer, 1974, Eclipse of Reason, p 21, quoted in Weizenbaum, 1993 p 249)

Thus, a critical researcher may see some of the developments in health policy not only as rationalisation of the care process but also as rationalisation of thought. For example, national frameworks for excellence, although might be seen as informative and helpful, cannot replace individual, clinical judgement. Their aim is to support such judgement, but will they in time come to be reified and thus become unquestionable? Similarly, measures and targets effect implementation of policy and distort its meaning. Thus, for example, waiting lists could be seen as a result of instrumental reason and an illustration of the notion of concept (as defined by Horkheimer). Waiting lists have perhaps become (to some extent) shorthand for 'good healthcare'³¹. A shorthand that simplifies and distorts the reality.

Taken together, these policy papers put great emphasis on the value of information for the NHS and the population as a whole. Overall, information is seen as something that can be captured, understood and transformed in order to achieve a wide range of goals (e.g. more effective and efficient running of the NHS, better-informed and healthier public). In this reading then telehealth can acquire meaning in a specific context of meanings given to information. Thus, the fantasies of information could be seen as fantasies of telehealth, removing meanings of telehealth from a local, organisational and

³¹ An increasing opposition to waiting lists has resulted in government review.

human context. An additional (but related) fantasy that can be identified is the perception that information is medicine, which can be 'administered' to the population (e.g. in the form of health promotion on the Internet).

5.2 Information Management and Technology (IM&T) strategy

At the time that this research was beginning (1997) we identified a clear gap between the (lack of) high level national policies for telehealth and the burgeoning telehealth initiatives being undertaken locally. There was no indication as to what services should be delivered through telehealth, what areas of telehealth were considered as most important, how different projects might be co-ordinated and supported by national infrastructure. There was a need for a consultative document and a forum (attracting wider audiences than telehealth enthusiasts) that would open a discussion on such issues.

However, since the publication of the policy papers described above, a number of important developments took place. On July the 2nd 1998 in the speech to mark the 50th anniversary of the NHS, Tony Blair declared that the challenge for the NHS was to harness the information revolution and use it to benefit patients. He outlined a vision of the future where doctors could be consulted over the Internet or interactive television and heart monitoring would be done over the phone. He also pledged to increase spending on the health service above inflation for at least another eight years, with substantial increase in the next three years³². But he emphasised that the money would be linked to a modernisation programme designed to lift standards in hospitals and end the delays faced by patients at every stage of their treatment. Health Trusts and GP practices will be able to bid for money (over their annual allocation) from a new NHS modernisation fund to become 'beacons of excellence', providing highest standards of care and testing innovative practice. Successful projects would be extended across the country. The fund was intended to bring new technology and equipment to the NHS.

³² In a later announcement the sum of an extra 21 billion over the next three years was promised.

The guidance on new technologies and drugs would be provided by the National Institute for Clinical Excellence (NICE).

The Prime Minister's speech was closely followed by the publication of a new IM&T strategy paper titled *Information for Health: An Information Strategy for the Modern NHS 1998-2005* (NHS Executive, 1998). The strategy produces detailed objectives for the employment of ICTs in the NHS. Its ideas are firmly based on the proposals of the health policy papers. Thus the application of technology is seen within wider context of the health policy goals. The roles assigned to ICTs in the strategy paper reflect meanings that it acquired in the policy papers, and the paper re-iterate the need to harness ICTs not only to support NHS professionals but also to improve services and maximise public convenience and satisfaction. The strategy calls for innovative use of technology in areas such as:

- Telephone-based services (*NHS Direct*)
- On-line services for GPs and patients, including electronic referrals and result, and booking of appointments
- Electronic Patient Records
- Telemedicine and telecare.

With regard to telemedicine and telecare the paper states:

- Opportunities in the field of *telemedicine* will be seized to remove distance from healthcare, to improve the quality of that care, and to help deliver new and integrated services. GPs will be able to send test readings or images electronically to hospital specialists many miles away and in the same way receive results and advice more quickly
- Through *telemedicine*, nurse practitioners in a community minor injuries unit will be able to consult doctors in the local Accidents and Emergency department, improving the quality of care and preventing unnecessary travelling and referrals. Specialists in regional teaching centres will provide on-line guidance and support to colleagues in local general hospitals or beyond
- *Telecare* technology will be used to provide reliable but unobtrusive supervision of vulnerable people who want to sustain an independent life in their own home. Video links with electronic monitoring will allow community health and social care workers to "visit" patients at home more easily.

Images of ICTs

Transformism versus continuism and concordism versus antagonism

The meanings of telemedicine and telecare created in the above passages could be categorised as transformative and concordists (deep/broadening) according to Miles' framework (figure 1). This transformation takes place in a couple of ways: firstly, in the manner the current services are delivered; secondly in the creation of new services. Both lead (at least hypothetically) to a better healthcare. Similarly, we could detect a transformative quality of other telehealth applications proposed in the strategy, particularly the provision of information to citizens and patients. These would (hopefully) support people's involvement in healthcare process, such as influencing local service development, local and national policy, as well as exercising choice and self-help. The transformation here is towards a more open and less-paternalistic NHS with empowered patients. Ultimately, one could envisage a transformation going beyond particular services and encompassing the very way the NHS works. This could include bringing barriers down between different parts of the health service, closer co-operation with social services, the provision of seamless, patient-centred care in partnership with patients and different organisations including the voluntary sector. Those transformations, however radical, do not undermine the fundamental principle of free national health service.

The overall tone of the strategy paper is then concordist. Emphases are placed on co-operation between different organisations, and importance of different stakeholders (including voluntary organisations, patients and carers) is acknowledged:

There is now a real opportunity for groupings of Health Authorities (purchasers of care), NHS Trusts (providers of care) and general practitioners (community doctors) who share responsibility for the same or overlapping populations to collaborate in developing a shared Local Implementation Strategy with agreed objectives, priorities and phased investment programme. (NHS Executive, 1998 p 87 para 6.61)

... patients and carers have much to offer in identifying and developing material for their needs and effective ways to engage them at both national and local levels must be found. (para 6.13)

This is of course only one reading of the paper. Following the hermeneutic circle we can conduct other readings. Firstly, an alternative reading may point out the strategy's strongly technology deterministic tone. Technology is removed from its organisational context, and becomes decontextualised and reified, and thus (to some extent) no longer

subject to dialectic reason and relations but something that is imposed. Although the paper proclaims the need to implement such technology in a local context, nevertheless it imposes many 'modernising reforms' and thus largely limits scope for negotiations (to 'when' and 'how' questions) and places even these issues within realms of technoscientific rationality. But, in the NHS, there are competing rationalities, for instance those having roots in the medical tradition or in Aristotelian virtues (of caring professions).

Another reading places the strategies in the context of wider policy statements and is influenced by our foreknowledge, particularly the knowledge of realities of healthcare, including financial pressures it is under.

Our research (our program as IS researchers) indicates that the government underestimates problems related to the implementation of the strategy, i.e. the political, cultural and technological barriers. We list some of those problems in the next chapter when discussing the local implementation strategy for Lewisham. Although the government has increased the amount of money spent on the NHS, and set up the modernisation fund, resources are still stretched. As the Telemedicine Manager at St Thomas' hospital in an interview said: "it comes down to money". Furthermore, although the strategy is generally concordist in nature, again it must be seen within the managerialist drive in the NHS. Thus, according to Darkins (2000), the reforms towards more efficient and cost-efficient health service has not encouraged healthcare innovation. The government is now less prepared to sponsor a new healthcare innovation such as telehealth unless evidence clearly shows its efficiency and effectiveness. As there is no convincing evidence for this, the government and the NHS, although interested in telehealth, do not have a definite or proactive policy on telehealth³³. The only policy linked to substantial funding is for the establishment of *NHSnet* and *NHS Direct*. However, as our research indicates even for *NHSnet* related projects there is not enough funding, particularly for training and education. This is also noted by Howcroft & Mitev (2000).

Beyond these immediate concerns, a more critical reflection suggests problems with this concordist vision. As Marcuse suggests technology is not autonomous but is an

³³ We do not advocate technology-driven investments in telehealth, but rather funding projects that are showing a promise in medical and social terms.

instrument of social control (although its accumulative effects are not easy to predict or to some extent control). The first reading of the strategy paper suggests that the social control exercised is towards concordist aims. However, the consideration of broader context (particularly the management discourse within the NHS and the financial pressures) leads us to wonder if some of the proposals discussed are less concordist than they seem to be. Perhaps they have hidden cost-cutting agendas? Thus, giving more responsibility to nurses may be seen as replacement of doctors by nurses, while providing links from minor injury units to A&E may be accompanied by downgrading existing A&E and staffing them with less qualified staff. There is a potential for conflict here – between doctors and nurses. Thus, telehealth may re-enforce or enable subtle changes to power bases. These changes may effect individuals, professions and organisations. Some of these may be planned and some unintentional (second order effects). For example, will telemedicine (e.g. remote operations or second opinion services) bring more resources to centres of excellence but at the same time reduce income of peripheral, district hospitals? Will it support the centralisation of the NHS with more clinicians working in big cities? What consequences the loss or downgrading of the general hospital may have for the employment, economy and social fabric of smaller, perhaps deprived towns (Cross, 1998)?

Even more controversial is telecare. Will it be used in a concordist/broadening sense not only giving extra security but also empowering patients, or in an antagonist/narrowing sense, e.g. by removing human contact and relying on surveillance and thus leading to alienation? The critical theorist must also consider less immediate consequences. Thus we ask: will telecare technologies influence the very fabric of our society, e.g. by reinforcing the trend towards de-personalisation, and diminishing the caring role of an extended family and community? One answer to that would be that many people are alone anyway and telecare gives them a chance for a more independent living. But perhaps we are so blinded by scientific-technical rationality that we cannot see (or rather seriously consider) alternative solutions to caring for the elderly? Would the money be better spent on supporting voluntary carers? Or perhaps telecare is the best option? As Feenberg (1991 p 8) points out: “in choosing to use them [machines] we make many unwitting cultural choices”. These choices may have unforeseen (or difficult to see) negative implications. We do not propose that telehealth on its own will have such an

impact; we merely suggest that in combination with other factors it may re-enforce such trends.

Images of information

As the policy documents before it (or even more so), the strategy paper emphasises the importance of information for the NHS and the public. It sets out two main information objectives as supporting the key groups (that is professionals, patients, public, managers and planners), and supporting clinical governance (and thus supporting managerialist objectives). Many proposals in the strategy paper echo *fantasies of information* when a picture of a *perfect organisation* sustained by *perfect information* is outlined. Thus our reflections on the role of information in the policy papers equally apply here (and therefore will not be repeated).

However, the role of information systems as processors and distributors of information, calls for further critical analysis. Critical theory argues that technologies are not neutral. Thus, we assume that information systems are not neutral. But how is this manifested in practice? Ferns and Mowshowitz (1995 p 175) argue: "By increasing formalisation, standardisation and specialisation, information systems reinforce the rationalisation of service delivery." IS privilege formal quantitative information at the expense of the informal and non-quantitative information. Furthermore by selecting data that is to be computerised, by further merging it with other data sets and by performing statistical analysis upon it, IS (implicitly) 'choose' one view over another (Bloomfield, 1991). Secondly, IS or data (we are trying to restrain ourselves from calling it information) become our frame of reference and directs our focus to problems that can be handled in this manner (Weizenbaum, 1993 [1976]). Clinical personnel's understanding and performing of tasks may be conditioned by the use of IS (e.g. training to use a particular information system may, even if not intentionally, indoctrinate people in the particular way of doing things and thus in adhering to certain values) (Ferns and Mowshowitz, 1995). Thus, IS becomes a structure limiting our actions and understanding of the world.

For example, using electronic protocols as part of electronic referrals, might condition the way consultations are conducted (i.e. by switching the focus from the patient to a computer, and by requiring certain data to be entered but not other). Electronic Patient

Records (EPR) could have a similar effect. In addition, by using particular coding schemas for classifying illnesses they may contribute to the creation of distorted epidemiological information.

Overall, *'Information for Health'* places great emphasis on information and modern technologies (including telehealth), and advocates the thrust towards 'modernisation'. In this it leads us to believe that the changes are broadening and concordist. Yet, the subsequent readings of the paper reveal potential conflicts in the meanings of information and the roles ICTs acquire.

5.3 Summary and conclusions - Potential implications of policy documents for telehealth

Overall, and particularly in the latest policy documents and the *'Information for Health'* strategy, we see a direct support for the development of telehealth. *'Information for Health'* filled in an obvious gap between very general national policies and local initiatives. Furthermore, many of the proposals made in the policy documents, not directly concerned with telehealth, may result in an environment in which telehealth might flourish. This would include the emphasis on primary and local care, co-operation between organisations, and a better informed public more involved in the health care process.

ICTs are often given a transformative role in the policy and telehealth is increasingly understood and projected as being able to re-shape the way health care is delivered; remotely instead of person-to-person, in home rather than in hospital, to groups rather than to individuals, and across traditional institutional boundaries. Yet this transformative role is perceived (in the UK) firmly within boundaries of long-established goals, particularly of providing care regardless of people's social class or geographical location. Understood in this way, this role fits in well within the overall discourse of social responsibility and community values present in the documents.

Such a discourse then implies that telehealth can develop within a framework of actions aimed at combating social exclusion, increasing social cohesion and bringing better health

care to the worst off. It goes beyond a narrow clinical focus and emphasises telehealth within a social and economic environment. Within this discourse telehealth acquires meaning as a tool for sharing experiences and providing help within a community (e.g. self-help groups supported by the access to the Internet), helping people to stay in the community rather than in institutions (telecare), giving more choices to people regarding their care (by informing them of existing alternatives and by enabling new services), and offering specialist care locally (aided by telemedicine applications). In other words, in policy documents ICTs are explicitly depicted as means of (positive) social control.

Yet, the policy documents give rise to other expectations too. The intertwined managerial discourse directs attention to efficiency and effectiveness. This means that the role of telehealth is seen not only as providing new or improved services, but also, or perhaps most importantly, as a way of helping to contain costs of healthcare.

The papers imply that these different roles can be reconciled, as one would expect, and that telehealth can provide better and at the same time more cost efficient services. Yet, this may not be so easily achievable. One of the discourses, probably the managerial, may exert a dominant influence on the developments in telehealth. Emphasis on cost savings and efficiency through the application of telehealth (telemedicine and telecare in particular) may encourage the trend towards medicalisation with the care component becoming removed from the meaning of telehealth.

Thus, we must ask if telecare's aim will become, for example, to enable the elderly and fragile to stay independent, or to cut costs of providing home care by reducing numbers of personal visits? Does the application of telemedicine have to lead to a better service or just a more cost efficient one? Is the aim of telehealth, for example *NHS Direct*, to offer an additional service, or is it intended to lead to the reduction in surgeries' opening times? Telehealth understood in terms of cost efficiency and cost effectiveness may reinforce the trends towards rationalisation of healthcare and beyond that – towards rationalisation of our *lifeworld* (to use Habermas' expression), for example in the way the elderly and fragile are being cared for.

These are just a few problems that illustrate ambiguities of future meanings of telehealth and these ambiguities are also present in another – professional and organisational –

dimension of the texts. The trends towards co-operation across organisational boundaries, re-organising the NHS, re-defining professional roles, e.g. giving increased responsibilities to nurses, pharmacists and midwives, and also have implications for the development of telehealth. In this environment, within the social responsibility discourse, telehealth can be seen as able to help the primary sector to provide a wider range of services, to support professionals in their work by providing access to medical information and training, and enabling communication and co-operation between different institutions. Yet, within the managerial discourse telehealth is to be given a role of controlling medical practices and limiting professional freedom (e.g. by imposing clinical practices), and thus contributing to alienation by removing meaning from work.

We can certainly see that as a result of the introduction of new technologies professional roles and work practices may change in ways not welcomed by those involved (Aas, 2001; Doolin, 1998; Lorenzi, et al., 1997; Maclean, 1996; Myers and Young, 1997; Southon, et al., 1997). Some developments may have different meanings for different people, e.g. increased status for nurses maybe read as undermining the position of doctors. Telehealth is often seen in such an instrumental way, rather than as a part of rich and evolving organisational context. Yet telehealth needs to acquire meaning within local work practices of all relevant people. Critical theory and feminist writings are particularly useful in drawing our attention to voices that maybe suppressed or simply ignored. For example, notions of ‘invisibility of work’ and ‘articulation of work’ highlight how work (usually done by lower-status employees) goes unnoticed and is rarely incorporated into design of technological systems (Star, 1991; Suchman, 1996).

The contradictions between different discourses in these policy papers can also be expected to be reflected in different views on how to evaluate telehealth applications, including what to assess and what methods and techniques to use. For example, should telehealth be evaluated through some form of cost benefit analysis (focusing on cost effectiveness), or through means akin to drug trials (focusing on safety), or on a basis of improvements in services or even improvements in the population’s health? Even more importantly the overall policy discourse exerts influence over the initiation of projects (indirectly – by encouraging interests in certain areas, providing positive arguments for negotiating projects, and directly – through a promise of funds).

In this chapter, we have discussed implications of policy texts for future meanings of telehealth. We indicated that ambiguities in policy texts are reflected in ambiguities in telehealth's role. However, when doing critical research in telehealth, the researcher needs to ask what sort of health service and, more generally, society would telehealth encourage and re-enforce. (Acknowledging that telehealth not only is shaped by society but it also in turn helps to shape it as well.) Will it support the view that health care is a public good or alternatively a private commodity? Ultimately, will it support caring society, based on human contact and social inclusion, as well as individual and community empowerment, or will it further extend the hold of instrumental reason, increasing alienation, and distorting the concept of individual choice and empowerment to mean commodification of health and information?

These are difficult questions and we do not pretend to have all the answers. However, they set an agenda for the exploration of local telehealth initiatives and projects. These are discussed in the next two chapters. Chapter Six describes strategies of the Lewisham Borough Local Authority and the Trusts serving the area. Chapter Seven describes and analyses telehealth projects within this area.

ⁱⁱ On the 1st of May 2001 some GPs took part in an industrial action, dealing only with emergencies, to protest against proposals they saw as impinging on their clinical governance (e.g. waiting lists and budgetary restrictions) and increasing amount of paper work.

ⁱⁱⁱ The notion of social exclusion has started to be debated and to be used as a conception of broader initiatives in not just health, but more broadly in social policy. Thus in the early days of the Labour government in the United Kingdom, and as a direct initiative from 10 Downing Street, a new government department was established, the Social Exclusion unit (SEU). The Unit was established, to bring 'joined up solutions to joined up problems' and was placed at the centre of the new administration in the cabinet office as part of the Economic and Domestic Affairs Secretariat (SEU, 1999). The SEU itself describe the notion of social exclusion as "a short hand term for what can happen when people or areas suffer from a combination of linked problems such as unemployment, poor skills, low incomes, poor housing, high crime environments, bad health, poverty and family breakdown".

CHAPTER 6

Telehealth in local policy and strategies

The previous chapter concentrated on national health policy and the *Information for Health* strategy, and their implications for telehealth. The chapter highlighted ambiguities and conflicts in the policy documents, concluding that these are reflected in the meanings telehealth acquires. However, those meanings are also forged at the local level, in the local policy and organisational context. This chapter follows developments related to telehealth in one particular locality – the London Borough of Lewisham.

However, where telehealth is concerned, things do not fit in neatly within a boundary of one borough. First of all, telehealth by its nature crosses organisational and geographical boundaries. Secondly, administrative boundaries of health authorities and other healthcare organisations usually span larger areas. Thus Lewisham Borough comes under Lambeth, Southwark and Lewisham Health Authority (LSLHA). This area is served by a number of Trusts.

In order to ‘situate’ telehealth, this chapter interprets strategies of a local authority (LA) and health Trusts in the area, regarding the provision of healthcare, ICT policy and telehealth in particular, and discusses *Local Implementation Strategy* (LIS) for the area. The aim is to illustrate how different social structures (in this case organisational policy and strategies) may influence telehealth.

The discussion of the LA and health Trusts policies and strategies focuses on how they relate to major themes in national health policy, i.e. strengthening primary care, improving co-operation between different organisations within the NHS and beyond, as well as emphasis on prevention and health promotion. In particular it focuses on proposals to make healthcare delivery more equitable, improving the health of the poor and more generally to address social exclusion and empower citizens/patients. The discussion of LIS and local health policies takes us into the telehealth strategies developed by the different Trusts. The underlying meanings of telehealth present in these strategies are highlighted and interpreted using critical theory concepts and Miles' framework.

6.1 Policies and Initiatives of the Local Authority in the London Borough of Lewisham

6.1.1 *Lewisham Borough*

This section presents a brief introduction to the London Borough of Lewisham and its population. This is followed by a discussion of the LA's policy and its implication for telehealth.

Lewisham is a residential community in South East London. It covers an area of 14 square miles (3500 hectares). It has a population of more than 240,000 and a resident workforce of over 100,000. The population is very diverse with some 60,000 black and ethnic minority people. 40 languages are spoken by sizeable communities and further 60 by a smaller number of people (www.lewisham.gov.uk)³⁴.

The population's income levels come very close to the average levels of income of all London boroughs. Despite this Lewisham, or at least parts of it, are considered very deprived. According to Lee (1999) Lewisham LA is the 14th most deprived LA in the UK (as measured by a multi-level Index of Local Deprivation). The unemployment level at 10% (11,500 people), is 3% higher than a London-wide rate (Sullivan, 1998). This is due to a comparative lack of local jobs and the lower than average levels of educational

³⁴ Last accessed 23/02/00

attainment and skills levels achieved by young people locally. This leads to the growing problem of parts of the population living on the margins or totally outside of the formal economy. In the promotional local council report *'Modernising Lewisham'* (1998 p 3) the Leader of the Council Dave Sullivan states:

Marginal participation in the economy leads to marginal participation more generally. Perhaps the biggest challenge to us, as a Council, is to secure new pathways for social inclusion for those people (young and old, black and white) who are currently cast adrift from the mainstream of economic, political and social life in Lewisham.

On a more positive note, there have been a number of developments, which have raised the profile of Lewisham, particularly the extension of the Docklands Light Railway to the town centre. With close links to the City of London it is hoped that Lewisham's economy will start to flourish.

Lewisham people and health

Lewisham is part of Lambeth, Southwark and Lewisham Health Authority (LSLHA) area. The authority was formed on the 1st of April 1996 when the Authorities Act 1995 merged all District Health Authorities and Family Health Services Authorities throughout the country into single Health Authorities. The LSLHA's mission statement (www.poptel.org.uk/lslha/role.html)³⁵ reads:

Lambeth, Southwark and Lewisham Health Authority's purpose is to promote and improve the health of people in the three Boroughs, through securing appropriate access to health care. The authority will pursue this purpose through targeting resources and developing effective partnerships with the community, other purchasing agencies and health care providers.

This translates into evaluating health and healthcare needs of the local population, establishing a local health strategy and implementing it by commissioning services for patients from the NHS and other providers, including GP, dentists, opticians and pharmacists, different health Trusts and the agencies providing care for people with learning disabilities. From April 1999 the Authority shares the commissioning process with Primary Care Groups and Trusts.

LSLHA faces many challenges. In the table produced by The King's Fund and Channel 4, rating healthcare services according to death rates from cancer, heart disease, TB and

³⁵ Last accessed 23/02/00

asthma as well as the length of hospital waiting, it was given 111th position out of 120 (Anonymous, 2000). This low-ranking is not necessarily indicative of the health authority's failure but rather challenges it faces. As John Alleby, director of health systems at the King's Fund said: "The survey shows us that health authorities in deprived areas face an uphill struggle to tackle the health gap between rich and poor." (Anonymous, 2000).

In Lewisham alone, 25 per cent of the total number of 100,000 dwellings contain at least one person with a disability or long term illness (www.lewisham.gov.uk/data/council/daa/af21_hou.htm)³⁶. There are pockets of deprivation in North Lewisham and large number of refugees (Vietnamese, African and Caribbean), with each community having different needs. In the area covered by LSLHA the demands on mental health services are particularly high. Within the local population there are also high levels of substance misuse, often accompanied by psychotic illness, high rates of depression and rising rates of schizophrenia. Greater percentage than national average of the local population is sectioned (under compulsory mental health section) and there are high occurrences of re-admittance to psychiatric wards, suggesting perhaps avoidable relapse (www.lslha.nhs.uk/slam/defoul.htm)³⁷.

In recognition of this situation, in April 1998, Lambeth, Southwark and Lewisham (LSL) area gained 'Health Action Zone' (HAZ) status for Children and Young People and received extra funds. As a part of this programme multi-agency projects are being set-up that involve the health authority, local authorities, voluntary organisations, higher education, NHS Trusts, police, primary care, Health First (the specialist health promotion agency), Community Health Councils, business sector and others. This long list, combined with the list of organisations involved in the healthcare commissioning process, illustrates that the number of potential stakeholders in healthcare is extensive in such an urban setting.

Lewisham people and ICTs

A report including results of a Lewisham council survey (Quirk, 1999) reveals that ownership and use of ICTs in Lewisham Borough has risen significantly over the past

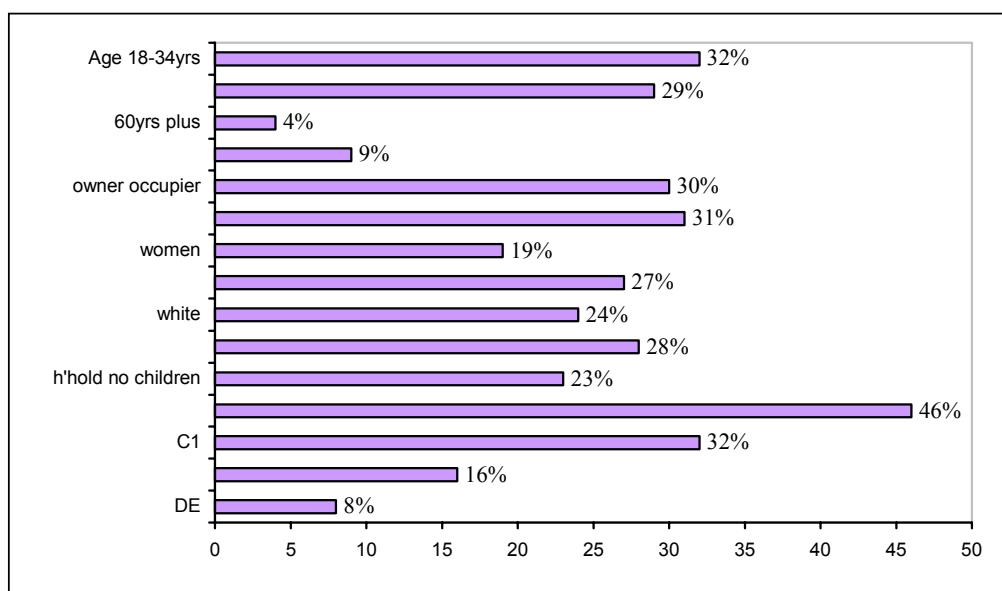
³⁶ Last accessed on 26/07/00

³⁷ Last accessed on 26/07/00

year. For example, at the end of 1998 some 14 per cent (or about 14,000 households) had the Internet at home. At the end of 1999 this had risen to 25 per cent. This compares favourably with the national figure of 10.7% of the UK population accessing the Internet at home in 1999 (source www.eMarketer.com)³⁸.

The figure below shows the proportion of households with access to the Internet at home in Lewisham in December 1999 (with a borough-wide average of 25 per cent) analysed by social class, age, tenure, gender and ethnicity.

Figure 3 Proportion of Lewisham households with access to the Internet, 1999



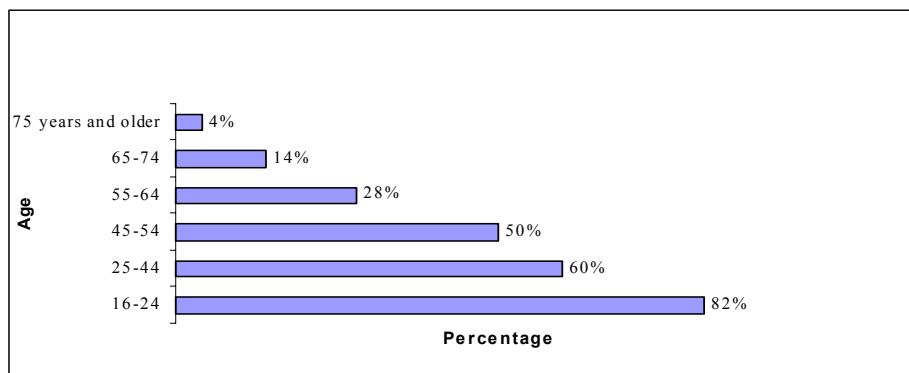
Source: (Quirk, 1999 p 6)

Not surprisingly less than 10% of people over 60 and those in social groups D and E (lowest) have home access to the Internet. The highest access figures, still less than 50%, are for A and B social classes. Many people may have access to the Internet from work. Nevertheless, these figures indicate that to prevent exclusion of parts of the population some sort of public access to the Internet must be provided and computer skills to be taught. Also, alternative, paper-based information needs to be available. National

³⁸ The figure for adult Internet users (not only those with home access) (as percentage of the UK adult population) increased from 24.4% in 1999 to 33.2% in 2000. (Source www.eMarketer.com , citing

statistics indicate that the Internet is still largely a domain of young or middle-aged people.

Figure 4 Age Distribution of Internet Users in the UK, 2000 (as % of those who have ever used the Internet)



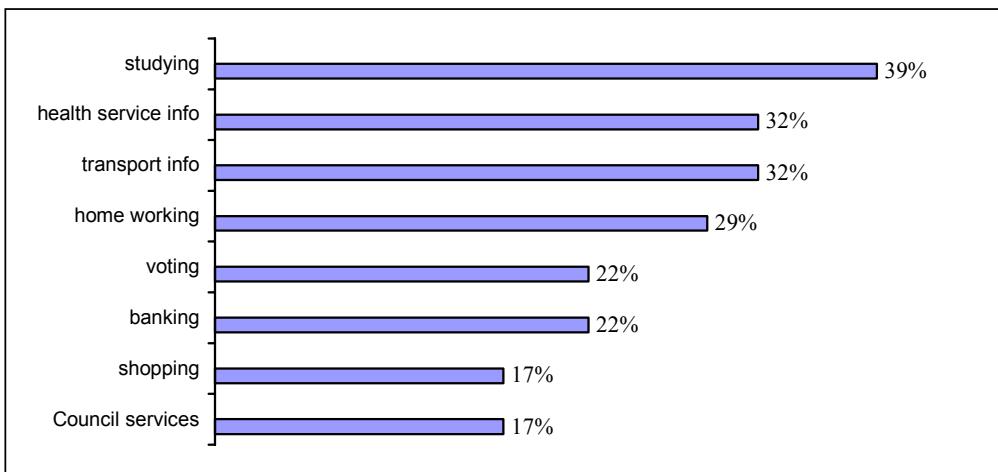
Source: www.eMarketer.com³⁹

6 in 10 of all Lewisham residents questioned said that computer technology is useful to them in their daily life (Quirk, 1999). When asked whether they feel it will be useful to them in the near future, 7 in 10 gave positive response. When responding to a question about whether they wish to know more about computer technology, 65 per cent agreed. When asked for what purpose they would be most interested in using the Internet, “studying and learning new skills” tops the list with access to health service and transport information, second and third. Council services came last (although interest is fairly high). For the full response see the figure below:

Figure 5 Reasons for using the Internet

European Commission as the source of data provided, last accessed 15/05/01.)

³⁹ Last accessed 15/05/01



Source: (Quirk, 1999 p 6)

The results of these surveys seem to indicate that the local population wants to find out more about ICTs, the new economy and to learn new skills. Interestingly, access to health services is the second most popular reason for wanting to use the Internet. However a survey of the Lewisham Citizens Panel (2000c) indicates that the majority of 700 people questioned (81%) go to the local doctors' surgery for information on health and local health service. Only 13% use the Internet but for 25% this would have been a chosen place (after doctor's surgery, pharmacist or chemist).⁴⁰ This suggests that although increasing in popularity, the Internet cannot replace other services or information sources. Something that LA has to consider in their plans for local services.

6.1.2 Lewisham Local Authority's vision and strategies

This section discusses Lewisham Council vision for the Borough, focusing on the role it envisages for ICTs. One might ask why are we interested in the Council policies and how do they relate to telehealth? Firstly, Lewisham Council plays an important part in our case study (which focuses on the geographical area of Lewisham). The Council as a provider of local services, including care for the elderly, has a stake in many services that potentially might be delivered through telehealth. Secondly, we see telehealth as

⁴⁰ The question posed was: 'Which two sources on the list would you most like to be able to receive information through?'

intertwined with other services. Thus on-line, community based systems can be (and are) also used to deliver health information and services (e.g. information about local healthcare provision, air quality, health and lifestyle tips, as well as systems for AIDS or asthma sufferers, etc).

Following the hermeneutic circle we conduct a number of readings, primarily based on two Council documents (*Modernising Lewisham* (Sullivan, 1998) and *WHERE IT'S @ Lewisham's strategy for getting connected* (Quirk, 1999)), other promotional material and interviews with local councillors and managers. In these readings we focus on meanings ICTs and telehealth acquire, highlighting any potential conflicts. The first reading considers the documents on their own terms, restating (rather than questioning) the council official view. This view is then deconstructed in the following readings.

In its promotional document *Modernising Lewisham* (Sullivan, 1998), Lewisham Council claims to have re-invented itself as a forward-looking and modernising body having organisational culture that is consumer oriented. This is partly in response to the New Labour government policies and initiatives and partly as an effort to rise service levels in the borough. The Council acknowledges that this modernisation process cannot be reduced to applying ICTs in administration and service delivery areas. It consists of fundamental re-thinking of how services are delivered and includes consultations with service users and the wider community. The modernising paper expresses the need for partnership and explicitly expresses the link between the government's policies and local initiatives, on understanding of complex social issues, empowerment of local people, businesses and organisations. Another central point of the paper is the modernisation of governance structures. This includes making the Council's decisions more clear and increasing the accountability to the public and their participation in decision making process.

The Council leaders envisage ICTs as having an increasingly important role in enabling the delivery of the council's aims and goals and changing the way it provides services and communicates with citizens. As a result of this vision, the Lewisham Council has embarked on *Connected Community* programme that aims to harness ICTs for the benefits of the community. The promotional material states:

The programme aims to connect Lewisham, its Citizens and businesses to the opportunities of the 21st century through information and communication technologies (Lewisham Connected Community Programme literature).

The programme has four main themes

- Connections for learning and social inclusion;
- Connections for employability, regeneration and community safety;
- Connections for simple government; and
- Connections for democracy.

When health and social care is concerned, the *Connected Community* report (1998, p 5) proposes rather vague commitments, that in partnership with community groups, health agencies and the policy the programme will:

- Enable people to discover and engage with local clubs and voluntary groups through online connections;
- Increase connections to emergency services e.g. extending Linkline facilities.
- Consider the feasibility of funding connections to all homebound people;
- Provide 'smart homes' for older people; and
- Provide online community safety and health information.

As a part of *Connected Community* programme a one-day open forum was held on the 27th of February 1999. About 140 Lewisham residents and stakeholders, including school governors, voluntary groups, older people, young people, some local businesses, Councillors and the researcher were invited to address the question: 'How will the Connected Community help to make Lewisham a better place to live, work and learn'. Following this, another forum '*Making Lewisham a Healthier Place*' was organised.

This *Connected Community* initiative has been translated into a number of concrete programmes. For example IT skills are taught at local libraries and colleges. Libraries offer free access to email and the Internet. Other initiatives, including TellyTalk and One-Stop-Shop have been established for a few years. One-Stop-Shop is about offering integrated and easy to access – at one point of contact - services to citizens. While TellyTalk is a free facility which uses videoconferencing to connect people to service providers. Customers can access a range of local and national services from one place,

avoiding the inconvenience of travelling to the Town Hall and other locations. They can also send and receive documents⁴¹.

Of course, Lewisham Local Authority is not directly responsible for providing healthcare, but recently health has become one of the seven corporate priorities for the Borough. As a lot of community care is linked to healthcare, social services have a strategy for providing care in partnership with the health agencies, particularly the Health Authority (HA). For example, social workers now work with mental health teams. This demands greater information sharing and thus more integrated information systems. Thus the Council co-operates with the HA in developing common interface for information systems used by both social service and mental health staff. Such co-operation and information sharing extends further across public sector, for example to hospitals like Lewisham Hospital, the community health trust, the local mental health trust, the police and the probation service.

The Council's modernisation paper (Sullivan, 1998) also acknowledges that the reorganisation of the health service will have an impact on the services and functions delivered by the Council. A key relevant initiative is seen as the building of new primary care groups (PCGs) around GP practices, and social care commissioning budgets. This is seen to require from the Council a flexible approach to social care budgets and to social care practice. The Group Manager for Information services at the Local Authority (LA) confirmed that initiatives under '*Information for Health*' will have an impact on the workings of the Council and the Council must take an active role in forming local strategies.

'Information for Health' is going to impact us in a big way, we must prepare for this by identifying the likely interfaces and preparing our systems accordingly. It will not only be about systems but a culture of working with and sharing of information with partners. (The Manager of Information Services, LA)

Overall, (surprisingly?) the vision presented in official Council publications is shared by the majority of council managers and other staff interviewed by the researcher. Thus the themes of co-operation, making services centred around people, combating social

⁴¹ There are 11 TellyTalk booths strategically situated around the borough, in Neighbourhood Housing Offices, libraries and shopping centres. Source: TellyTalk Information Pack, received at the *Connected Community Forum*.

exclusion are very high on the agenda – at least officially. It seems, there is a shared vision or at least a shared vocabulary between the central government and the local administration on different levels. Nevertheless there are fundamental problems with the implementation of this vision, which is perhaps not so full heartily embraced as it appears. The vision itself and its implementation are critically interpreted in the section below.

6.1.3 Alternative interpretations of Lewisham Council's policies

The first ('preferred') reading of the Council policy, strategies and initiatives presented above gives an impression of an enlightened Council striving to serve people in the best way possible and, what is more, seeing the citizens as active participants in the process of governing the borough. The official documents and interviews with local managers convey a vision of co-operation and better communication within and between organisations and with citizens/patients. The preferred reading of ICTs is one of the enabler of these 'noble' policies and strategies. Nevertheless, voices of caution or indicative of other aims behind applications of ICTs and telehealth were expressed by some of the people interviewed. Below we return to the policies and strategies as stated in the published and unpublished documents, and conveyed by the interviewees, focusing on transformations hoped to be achieved with the aid of ICTs and highlighting tensions and problems.

Images of ICTs

Transformism versus continuism dimension

The LA's policy papers convey a message of fundamental transformations in a way services are provided and organisations are run. According to 'Modernising Lewisham' (Sullivan, 1998 p 2):

The Blair Government has challenged the Council's very legitimacy and insisted that it modernise. Modernise its services, its management, and its governance.

ICTs are considered as having strong potential to enable these changes in the way services are delivered and to their fundamental nature.

The convergence of information and communication technologies offers us the opportunity to transform the nature and quality of many of our services. It also opens the possibility of transforming how we connect with our citizens. With the expanding possibilities (digital TV, Internet access, telephone convergence, etc) we should aim for Lewisham to be the most 'wired', the most 'digital', the most 'connected' community in the capital. (Sullivan, 1998 p 3)

The proposed reforms include closer ties within and between organisations, multi-disciplinary teams supported by (shared) information, one-stop shop council services, as well as ideas of one-stop health access, supporting and expanding primary care, public involvement, etc. Thus ICTs acquire meaning as enabler of new services and new ways of delivering them, as well as a factor contributing to changing working practices.

Yet, again, as with the national policy papers, these transformations are supporting existing structures.

... the local authority Chief Executive Barry Quirk is very clear in his mind about the use of technology to deliver services. And that's really being the only way forward if local government in its present format is going to survive. He is very signed up to the whole concept of using data communications networks and aiming of overcoming the chimney stacking of state services that perhaps frustrates the average customer. So, for example they have quite an interesting pilot of combining front offices of the department of social security, which is a national government agency, and the local council housing benefit office, which has got them to the point where you can fill in the single form to claim both benefits. You know, this is incredibly radical, it has been really tough for them to get that far because it involves all these bureaucratic managers and that is difficult to overcome. (Associate Director, Information Systems, LSLHA)

The above statement again illustrates ICT's transformist characteristics contained within continuism dimension. It indicates that ICTs can be thought of as both facilitating fundamental changes but also as preserving the current structures by reducing the chance of far more radical changes and averting crisis. Thus, using critical theory language – modern technologies have been co-opted to sustain the current political system. Through surface changes, through making our lives easier we are being pacified into accepting the system itself. As Marcuse suggests the system has now assimilated the resistance within its own body. Thus, it may appear, that the fight for (local) democracy has been substituted by a drive for more convenient services. And yet, this is not exactly so, as we will show in the following sections.

Concordism versus antagonism

As described, the preferred reading of local policy and strategies offers us an image of far reaching but positive changes to the way services are provided and organisations are run. ICTs are seen as playing a major role in enabling these developments:

ICT is a proven means of raising standards through increasing motivation, confidence, literacy, numeracy and information handling skills for all ages. ICT may also enable management to reduce levels of truancy and exclusions. (Sullivan, 1998 p 4-5)

Additionally ICT can be used to connect people to cultural and leisure interests as well as enhance community safety. (Sullivan, 1998 p, 5)

The technology may enable Council meetings to be made more convenient for citizens, Councillors and staff. Information will be more readily available to more people. The greatest problem will be filtering pertinent information. People could become more involved in planning decisions. (Sullivan, 1998 p 6)

The drive to get the people, businesses and institutions of the borough connected to the opportunities of the information age is pivotal to achieving the Council's mission. Improving the technical platform for Council services is an important but minor part of this overall strategy. Other elements include supporting young people to acquire the skill of learning and acquiring new knowledge and supporting local community groups to better co-ordinate their actions and energies. Local stakeholders need to work collaboratively on this complex agenda to help Lewisham's citizens and businesses seize the opportunities of the new e-economy and make the borough "where it's @". (Quirk, 1999 p 15)

Such statements, all found in the official documents, as well as voiced by some of the people interviewed could be taken as rhetorical. They convey a technological determinist view and ignore problems with technologies. (For example consider the following expression: "ICT is a proven means".) ICTs are seen as unproblematic and as a bearer of all gifts – education, employment and democracy.

Are these reports, then, a manifestation of instrumental reason and scientific-technological rationality? To some extent, yes. They exaggerate the potential of ICTs, although verbs like *may* or *could* (e.g. in the sentence "The technology *may* enable...") soften the deterministic tone. Furthermore, ICTs are perceived as tools, that can be applied to numerous tasks in order to achieve various aims, or in other words, they are seen as a straightforward means of (concordist) social control. What is more significant is that, they represent a world mediated by technology (or a technology-centrist view). What we mean is that ICTs are envisaged as being at the centre of human activities.

We could see these reports for what they are – promotional documents, conveying the 'official version', as well as directly responding to the government agenda and 'playing the game'. *'Modernising Lewisham'* betrays an almost unheeding preoccupation with

‘modernisation’. It almost seems that modernisation is the goal in itself. Modernisation itself, and its effect on staff is not questioned at all, although privately it is conceded that:

We have much work to educate staff, change cultures to electronic working, and improve quality of recording skills and literacy in informatics beyond keyboard skills. (Group Manager, Information Services, Lewisham LA)

Some of the Lewisham Council’s staff indicated that they felt unsure how to best utilise ICTs, and complained of not being given enough training. This had led to anxieties and fear of not being able to cope with the changes. As Chris Long pointed out “we are moving too fast and some people will be left behind”. These feelings are often not fully acknowledged, as for example in the modernisation paper (Sullivan, 1998).

Even the *Connected Community Forum*, centred on ICTs and how they can be harnessed towards social aims, rather than starting from establishing aims and then considering ICTs as one of the possible enablers. This impelled one of the participants to ask: “Why are we talking so much about IT?”. Nevertheless, the Forum, did discuss many important issues, like social cohesion and education, and was not overtly technologically deterministic, perhaps because it was lead by local people of different professions, groups and ages, rather than technocrats. During one of the workshops at the *Forum* telehealth’s potential to improve access to healthcare was discussed. Suggested services included televisits at home and teleconsultations in GP surgeries or local clinics. These services were seen as serving the socially excluded (either by their illness or fragility or by having little money to travel). It was also pointed out that telehealth may offer busy people access to health advice outside their working hours (e.g. through *NHS Direct* or PolyClinics). These interpretations of telehealth fall within the concordist dimension. However, issue of access can have antagonist characteristics too, particularly if telehealth services (e.g. web-based advice or booking systems) are easily accessible only to those with Internet connections at home or at work.

The positive image (of itself), the local Council is promoting, is not shared by everyone. The ‘dissident’ web site (<http://www.lewisham.org.uk>)⁴² is a host to voices questioning the motives of the councillors and their willingness not just to listen but act upon views expressed by citizens. Some local people using this medium have accused the Council of

⁴² Last accessed 15/01/01

trying to rationalise the services (e.g. having a few bigger libraries instead of many small ones) and generally being driven by cost efficiency not the local community good.

The web site is interesting in itself, in that it shows how the Internet can be used by local movements to oppose the establishment. Thus it illustrates that change can be local rather than in terms of 'grand refusal' (as the Frankfurt School theorists envisaged). On the other hand, it could be pointed out that there are very few regular contributors to the site and thus the rest of us (at least those having the Internet access) have been co-opted into the 'administered' society (using critical language).

Following the hermeneutic circle, the Council's actions (the parts in the hermeneutic circle) need to be seen in the context of the national policies (the whole). Local authorities' budgets are being cut while the people's needs and expectations are rising. For example, in Lewisham the social services are intending to reduce the number of offices to maximise economies of scale. At the same time the national government has set out requirements for local councils to deliver some of their services on-line by 2002 and all of them by 2005. But are ICT-based services a part of the solution or a problem? Even in terms of cost efficiency, the role of ICTs is ambiguous. The Council's policy paper (Quirk, 1999 p 9) states that access through ICTs must be additional to the more established ways and admits that "this may mean that costs may increase rather than decrease in this transition. It also points to the importance of planned decommissioning of some traditional channels of service (closing buildings and so on) if costs are not to grow." This statement indicates that introduction of new on-line services would lead to reduction in other services, and thus illustrates the 'double-edged' character of ICTs.

In the remainder of this section we investigate if ICTs might bring the promised benefits, specifically in relation to empowerment and social exclusion (two of the notions that this research focuses on). Although we have suggested above that Lewisham policy documents reflect instrumental reason in their simplistic portrayal of ICT-based reforms and unquestioning ascription to ICTs qualitative transformational potentials, we do not want to dismiss the reforms or ICTs all together. The importance of information and ICTs in this context is acknowledged by Phipps (2000 p 62) who states:

Information is only a part – but an integral part – of our understanding of social exclusion, and how to promote inclusion. Information is necessary to communicate, to access services, to exercise right, to access benefits, to participate in the democratic process and ensure its accountability.

She then argues:

Applied to enhance access, choices, and social participation, new communications technologies can be a conduit for social inclusion – resting on our societal and strategic choices. Our society can consciously choose to give this conduit an inclusive role. (Phipps, 2000 p 64)

The Council perceives ICT's as presenting just such opportunities, but also as a threat to Lewisham borough and its people who, unless take action, may 'miss the boat':

The Internet and digital TV will make those whom are 'unconnected' disadvantaged to the point of irrelevancy. (Sullivan, 1998 p 2)

The statement above may be exaggerated, nevertheless, as new ways of learning, working and engaging with others become increasingly important, those who are unable to use ICTs may well become additionally excluded. Local and national statistics on IT ownership⁴³ indicate that the provision of advice and information over the Internet will not ensure equal access to health information for all social groups or ethnic minorities. The Internet user is still more likely to be young, male and from higher social classes, although increasing number of women and older people are surfing the Net (Anonymous, 1998). However, even if we take into account the rapid growth in connections to the Internet many people will not have home access for some time. Hence, the council's *Connected Community* initiative includes the provision of terminals in libraries, proposals of multimedia kiosks in different locations, including shops and pubs, and donating PCs to schools.

This, in itself is not enough. The re-construction of technology (advocated by Marcuse and then Feenberg) must go beyond providing access or even narrowly-understood skills, and be based on active participation (e.g. in the way technology and services are designed) and it must be relevant, i.e. related to people experiences. This calls for different type of initiatives.

One of those was the *Connected Community Forum* discussed previously. Another initiative is intended to deliver a community Intranet, using cable connections to link flats on one

⁴³ The Age/gender distribution of UK Internet users in 2001 is as follows: men 14+ account for 49.8% of total users, women 14+ 35.0% and children 2-14 years – 15.2%. (Source www.eMarketer.com, citing Jupiter MMXI, 2001, accessed on 15/05/01.) See also figure 4 on p 159.

of the Lewisham estates. It is going to be offered at a moderate subscription price. It will support a web site designed, updated and used by the residents. The aim is to regenerate the housing estate, to strengthen the community, broaden the skills of local residents and give them greater access to information (see www.lewisham-visibledifference.org.uk⁴⁴). This project can be seen as addressing some aspects of social exclusion and empowerment.

To interpret the local government's initiatives in terms of empowerment, we evoke the models of empowerment introduced in Chapter Four. Most of the initiatives, proposed by the LA, like electronic provision of information about health and welfare and simplifying the procedures for applying for benefits can be seen as supporting the professional model of empowerment. Some developments, including publishing council documents and meetings on the Internet, and designing an interactive web site where people can comment on different issues or make suggestions, could be taken as going beyond that, and facilitating the liberal model of empowerment. (Of course, on its own publishing information does little to encourage public interest in local affairs, and is even less likely to inspire people to vote. Nevertheless, without information any action by citizens is very difficult, while some local issues have the capacity to generate great interest.) The exchange model of empowerment is enacted in programs like *Open Space Forums* (e.g. *Connected Community Forum*) where local people convey their priorities, discuss what services or local initiatives are needed, and form groups aiming to implement those suggestions (with support from the LA). Thus they no longer have only a passive role in local developments. These ideas are also carried forward in cyberspace, where citizens can engage in on line meetings.

A critical theorist, may point out limitations of such initiatives (i.e. do they influence wider political issues?). However, they are not just pointless exercises. The *Open Space Forums* did bring people together and resulted in local actions. This is a more of a Foucaultian model of change (and knowledge/power) rather than a grand-scale project of the Frankfurt School. This, however, does not make it less valid. Interestingly, it is the

⁴⁴ Accessed on 26/07/00

initiatives that do not solely rely on ICTs (like *Open Forum*), or ones that make ICT-based services targeted at communities (like the community Internet), that bind the communities together and bring (limited) empowerment.

6.2 Local Implementation Strategy (LIS) for using ICTs in healthcare delivery

This section discusses *Local Implementation Strategy* (LIS) document for Lambeth, Southwark and Lewisham area, concerned with implementing directives derived from *Information for Health*. All areas are required to produce such strategies (NHS Executive, 1998). Again, our discussion goes beyond reporting on telehealth activities and strategy in Lewisham to focus on meanings telehealth acquires and to critically analyse the proposals.

Information for Health' targets are to be achieved within three phases, and the LIS document need to state how this will be done. The first implementation phase 1998-2000 concentrates on the development of strategically important infrastructure projects. In the second phase (2000-2002) substantial progress on Electronic Patient Record (EPR) and Electronic Health Record (EHR) is envisaged, as well as the incorporation of telemedicine proposals in Health Improvement Programmes. In the final phase 2002-2005 comprehensive systems, services and infrastructure are expected to be available throughout the NHS to support the delivery of care.

Although produced in collaboration with different stakeholders, LIS reflects predominantly the Health Authority view (who was mandated to produce it). It brings together health Trusts in the area, 3 Local Authorities including Lewisham, Primary Care Groups and a number of other organisations. In the following table we introduce four Trusts we will be focusing on, i.e. South London and Maudsley (SLaM), the Community Health South London NHS Trust, Lewisham Hospital Trust, and St Thomas' and Guy's Trust.

Table 3 – Trusts serving Lewisham area

Trust Name	Aim	Services provided	Description
SLaM Source: http://www.lshnhs.uk/slam/default.htm ⁴⁵	The provision of services for mental health sufferers.	The services are divide into areas: children, adolescent, adult, elderly and forensic. These include, inpatient and outpatient psychiatry, community mental health teams, residential services, vocational and employment services, and others.	Established in April 1999 as a result of merger of The Bethlem & Maudsley NHS Trust, Lambeth Healthcare and Lewisham & Guy's Mental Health Trust. Serves a local population of 1.1 million people living in Lambeth, Southwark, Lewisham and Croydon but also provides specialist services to people from across the UK. It treats around 6,800 inpatients and 88,000 outpatients annually and has 1,000 inpatient beds and 4,000 staff.
The Community Health South London NHS Trust Source: http://www.lshnhs.uk/chsl/default.htm	Provision of community health services to the people of Lambeth, Southwark and Lewisham.	Services offered include: Well-Women Clinics, services for families, children and the elderly. Provides nursing services for the elderly in local partners, including the borough. Addresses inequality issues across the border with partners, e.g. by providing school nursing services.	Formed through the merger on the 1 st of April 1999 of Lambeth Healthcare NHS Trust and Optimum Health Services.
Lewisham Hospital Trust Source: http://www.lshnhs.uk/slam/default.htm	Acute district general hospital, providing a range of healthcare services.	Offers all the medical, surgical and emergency specialities one would expect of a district general hospital. It also specialises in Cystic Fibrosis, General Paediatric Surgery, Neonatal Surgery, Foetal Medicine, ENT and Vascular Surgery. Serves a local population of around 245,000, extending its reach to residents of neighbouring boroughs.	Services delivered by multi-disciplinary teams, following protocols that work across boundaries and partnership boards.
St Thomas' and Guy's Trust Source: http://www.hospital.org.uk	The delivery of high quality care, teaching and research.	Provides a comprehensive local acute and specialist hospital service to people who live and work in London.	Formed in April 1993. The Trust comprises of University Hospital Lewisham, The Children's Hospital Lewisham and Dunorlan Home (a residential nursing home in Bromley). The Trust manages approximately 650 beds and currently employs around 2,200 staff. On average, the hospital sees 60,000 patients each year in Adult A&E department and 26,000 patients in Children's A&E. In 1998-1999 124,829 were cared for as outpatients, and 10,510 day case patients, while 32,161 people were treated as inpatients.
			The two major London teaching hospitals Guy's and St Thomas' were brought together as a single NHS Hospital Trust in April 1993 but the two hospitals had shared centuries of working together. One of the largest NHS Trusts in the UK, serving over $\frac{3}{4}$ million patients a year. Working in partnership with Guy's, King's & St Thomas' School of Medicine, Dentistry & Biomedical Sciences.

⁴⁵ All four web sites were last accessed on 15/05/00

The researcher was given three drafts of local strategy papers (LIS) including the latest available version from July 2000 (2000b). These drafts encapsulate strategies, objectives and plans for the future exploitation of information in health and healthcare in the years 2000-2005, proposing investments in information management and technology. The drafts mainly differ in the level of detail. As the last one is the most detailed it will form the basis for the discussion here. It sets out the following major programme objectives (p 1):

Making available the IM&T infrastructure, systems and services necessary to support the delivery of:

- ❖ Health Improvement Plan
- ❖ Integrated health and social care
- ❖ National Service Frameworks
- ❖ PCG/PCT development
- ❖ Clinical Governance

Enabling the public and patients to access high quality information and services more easily and equitably:

- ❖ Intranet technology and National Electronic Library of Health
- ❖ NHS Direct and NHS On-line
- ❖ Telemedicine

Meeting the Government's *Information for Health* objectives and targets by ensuring that all care professionals can:

- ❖ Exchange clinical and administrative data electronically
- ❖ Access relevant electronic patient records and electronic health records around-the-clock
- ❖ Access relevant evidence-based information electronically

This LIS also echoes *Information for Health* when it states that there is a need to provide healthcare professionals with information to help them deliver better care to their patients rather than just to support administrative activities. The main emphases, derived from *Information for Health* are on EPR and EHR. The strategy calls for co-ordination with Health Improvement Programmes and Health Action Zone Activity (HAZ). By January 2001 three IM&T projects had been commissioned by the HAZ team: a) a local study of issues to be addressed in sharing person identifiable data across agencies b) connection of the three local authorities to *NHSnet* to exchange emails c) development of a web-based service directory for local health and social care agencies.

6.2.1 Problems with implementing LIS

According to the January LIS document (2000a) many of the goals included in phase one have been achieved and work is now underway on phase two programmes. However the last draft (2000b) acknowledges that this requires deep culture changes whereby all healthcare professionals embrace technology as part of their day to day activities rather than depending on clerical staff to do so. It identifies three key issues: availability of adequate funds, finding and retaining people with the right skills and available time to direct, manage and deliver schemes, and finally commitment to collective working. It also points out key infrastructure problems. The current level of clinical desktop access ranges from a high of 90% in acute trust to 2% in the mental health trust (SLaM). The new NHS number, the cornerstone of EPR, is used in about 70-80% of acute patient administration systems. However, most clinical systems, other than those in GP practices, do not use it at all. There are also problems with data quality, caused by lack of data integration and maintenance procedures and poor data accuracy. Overall, they note, there is negligible exchange of electronic information between primary and secondary care sectors. Most stakeholders underestimated staff training needs and as a result computer literacy is poor. Also it is difficult to retain IT staff who can get better pay on the private market.

The interviews conducted for this research seem to confirm this picture. The situation is particularly difficult for the Trusts recently created by mergers. For example SLaM combines three trusts which had disparate IS strategies, different systems and different procedures in place. Overall it has 97 locations, some of them are not even connected to a Wide Area Network and the Trust is undergoing the process of consolidation and standardisation. According to the Head of IT, at SLaM, the (modest and basic) aim is to give every clinician access to a PC. However, this is not happening because of lack of funds. It is still not clear how exactly funds for the LIS programmes will be found. Many organisations are bidding for the Modernisation Fund.

Work is also in progress on number of fronts. First, a programme aiming to identify the information flows and interactions between agencies. Secondly, agreeing on conditions for enabling *NHSnet* access for social services, so as to allow better integration of health and social services.

The Community Health South London Trust is also battling with the integration of different legacy systems. These differ from department to department and some are still

paper-based. Even if they are computerised, clinicians often produce paper records, which are then transferred to computer system by clerical staff.

According to LIS the acute Trusts' (Lewisham, St Thomas' & Guy's and Kings) systems are run entirely independently of each other. Apart from the Patient Administrative System and Radiology, there are no systems that are common to all 3 organisations. At present EPR could not be electronically shared between the Trusts. What is more, many departmental systems within one organisation are incompatible. Our interviews with the IT manager suggests that Lewisham Hospital is currently addressing this problem and has upgraded its infrastructure, (PCs and the network). It is now looking to utilise and expand on the current intranet/web based technology which is delivering pathology and radiology results to clinical users and is going to be used for booked admissions programme. Guy's and Thomas' Trust has developed, implemented and rolled out a results review system, and it is developing departmental clinical systems.

In primary care the picture is equally not very encouraging. All PCG offices are fully connected to *NHSnet* but only 10% of GP practices. Although 85% of practices have been computerised (in isolation), they do not necessarily have compatible systems. Often these are used for registering patients and producing repeat prescriptions only. There is no integration with the community, mental health or acute trust systems, although some steps have been taken, notably the booked admissions and electronic referral and discharge project (2000b LIS).

In summary, in the words of the IT manager from Lewisham hospital:

Just look at the way IT is organised in health service. It is a total shambles. No large organisation would run IT like that. It is like Boots the Chemist deciding that each individual shop should have its own IT system and IT manager and they should do and run what they want. And then trying to bring it all together somehow. Total anarchy. But one of the aims of *Information for Health* is to move it forward.

The problems are even greater when considering co-operation between different agencies. According to the Associate Director, Information Systems, at LSLHA:

If you have someone who is having care delivered in the home, there are a range of agencies for delivering this service and a range of professions. There is a general practitioner, community nurses, public voluntary agencies, they may be many departments of local government involved. At the moment the mechanisms for collaboration between these agencies are terrible. You perhaps have some paperwork that is kept at the client's home on which people write notes when they come. But

the records of the individual case are held, if they are computerised, in individual computer systems in individual organisation, and may well not be computerised at all. And all these people have different management structures, so in terms of planning overall service delivery it is difficult.

Each of the Trusts is (more or less) independent and there had been historically little co-operation between them. The process of integration and modernisation is undoubtedly taking place, but perhaps at a slower pace than anticipated, and as the Head of IT at SLaM pointed out – not all deadlines set in LIS will be met.

6.2.2 Alternative reading of LIS

Although LIS acknowledges problems facing the implementation of the proposed programmes, still the people interviewed foresaw greater difficulties:

There is a big gap between what LIS promised and what we have funds to deliver. (Head of IT, SLaM)

We need organisational change, breaking down barriers between social services and health, but existing legislation is obstructing this process. It forbids moving money across, local authorities are forbidden to providing nursing care. Also there are problems with resources, law, regulations. (Associate Director, Information Services, LSLHA)

In view of these problems, the feasibility of LIS must be questioned. However, going beyond pointing out difficulties with adhering to deadlines, a critical researcher must also question the aims and the ways they are to be delivered.

LIS must be viewed in the context of national strategies and policies. Its role is to reflect the main goals of the national strategy, specifying steps to be taken to achieve them. Thus, many of our critical points made about the national strategy, are applicable to LIS. Particularly, as it echoes the national policy thrust towards modernisation. It does not question the spirit of *Information for Health* or the need for modernisation. Nevertheless, as with *Information for Health* many proposals are intended to have a positive contribution, not only towards purely medical outcomes, but also towards empowerment and social exclusion, as expressed in the following passage:

Information for Health is a principal vehicle for transforming the delivery of services within the NHS. Its implementation will:

- Empower people through information
- Open up access to services and change the way care is delivered through technology
- Reduce inequalities through easier access to comparable data. (2000b, LIS p 1)

These statements bear the hallmark of instrumental/technological rationality. We discussed the limitations of empowering people through information in Chapter Five. With regard to the last point, comparing data may point to inequalities but data can be interpreted in many different ways. Furthermore, reducing inequalities is a far more complex process than just analysing data. Willingness and co-operation of organisations and people involved is needed to make achieving these aims more plausible. Yet, the Clinical Development Manager at St Thomas' Hospital highlighted the organisations' lack of readiness to implement the necessary changes:

The government and the NHS have been pushing [technical] solutions on us very quickly and we are not ready.

Moreover, issue of co-operation and working towards mutual goals (particularly sharing funds) is hard to achieve in practice, as the following quote indicates:

The LIS investment plan will undoubtedly exceed available resources, which will make the prioritising a difficult and political task. Pooling resources from organisations for the greater good of the community are noble words, but will organisations give up their budgets for the benefit of others? (Manager of Information Services, Lewisham LA)

Furthermore, although all the organisations involved in local implementations are acknowledged as valuable stakeholders, influence they exert may not have been equal, as the following statement indicates:

At first read the strategy [Local Implementation of '*Information for Health*' strategy] feels it is about the Health Service and our involvement is like 'big brother showing you his train set – but you are not allowed to touch it'. Despite desire to bind LA's into the process as stakeholders our level of involvement and role has not been that transparent until now. (A member of Lewisham's LA)

The quotes cited in this section suggests that the process of translating the national health policy and IM&T '*Information for Health*' strategy into LIS has not been easy. Although not questioning overall aims of the policy documents, local stakeholders pointed out many problems with achieving them. The problems go beyond resource shortages and include changing work practices, subtle power shifts that such reforms may bring, and organisations (understandable) drive to protect their own interests. There is also a noticeable lack of involvement of patients groups. Thus overall, the 'all-inclusive' language of LIS document, has not necessarily been reflected in practice.

6.3 Telehealth strategies of local Trusts

The LIS sets out the common agenda for different Trusts in the local area. It is a forward looking document (covering five year period) that largely concentrates on infrastructure or large scale projects. It forms the immediate context in which telehealth services are being developed. However, each of the Trusts – to some degree – has developed its own strategies for the employment of ICTs.

This section focuses on telehealth strategies of the individual Trusts, including Lewisham Hospital, South London and Maudsley Mental Health Trust (SLaM) and Community Health South London Trust. Guy's and St Thomas' Hospital Trust is also included, as both of these hospitals offer specialised, tertiary care to a wide area, including Lewisham borough. Furthermore some telehealth projects initiated at these hospitals are conducted together with Lewisham organisations.

Our findings are based on the documents (official reports in the public domain and those given to the researcher personally) and on the interview conducted. The interview list, included in Appendix D reveals that the interviews were conducted over period of a year and a half. This is because, as the research progressed it became clear that more people need to be contacted. Also because of the rapid changes in the field, the researcher felt that there was a need to get more up-to-date information. This has also allowed the researcher to see how things have progressed over time.

Different Trusts are at different stages of developing telehealth services, ranging from practically no involvement in such developments to running multiple projects. Telehealth strategies at SLaM and St Thomas' Hospital have emerged from experiences of early experimental telehealth projects. They were then expanded and incorporated in the context of '*Information for Health*'. In some cases there was not a lot of co-operation between different projects. For example, initially the projects in St Thomas' hospital were set up separately and only later on did they start to be more connected (but still not integrated). However, after initial 'archipelago-type' developments, there is now (to some extent) co-ordination within (but hardly between) the Trusts. Only two of the Trusts discussed – SLaM and St Thomas' & Guy's Trust had (at the time of interviews) dedicated telehealth (or rather telemedicine) steering groups.

6.3.1 University Hospital of Lewisham NHS Trust

University Hospital of Lewisham NHS Trust, according to the IT Manager, has no telehealth strategy as such. Telehealth is integrated in IS strategy, although many projects are based on the initial interest expressed by clinicians rather than on an initiative of IT staff. Telehealth projects are overseen by the IT Manager. According to him the hospital is involved in a number of projects reflecting its interest in a number of telehealth areas, including: exchange of information with primary care (projects: electronic referrals and results, direct booking of patients by GPs); communication with a tertiary hospital (videoconferencing); and links with social services.

6.3.2 The Community Health South London NHS Trust

The Community Health South London NHS Trust has also no formal telehealth strategy and is not currently engaged in or planning in the near future any telemedicine or telecare projects, but it does have some involvement in – broadly defined – telehealth. The Borough Director for Lewisham suggested that the Trust is getting ‘into position’ where it could develop telemedicine applications that would enable on-line support for nurses, allowing them to carry out consultations. She added: “I can see it being sometime down the line. *NHS Direct* now – telemedicine in the future.” There are no plans to do it as yet. It may change in the future as it is planned that in 2001 this Trust will become a part of Primary Care Trust, and community and primary services will be merged.

The Borough Director for Lewisham, explained that so far within the Trust ICTs have been seen as having a two-fold role. Firstly, supporting internal, mainly administrative activities. Secondly, facilitating clinical activities, mainly through clinical information systems. However, a third role for ICTs is emerging – that of enabler of communication. All of the Trust’s sites are connected to *NHSnet* and most managers have access to it. At the very least emails are used to exchange information and in the future these will be complemented by EPR and other patient data. The Trust spans three boroughs and has many health centres, clinics and corporate buildings. This makes electronic means of communication ever more important. The Trust also needs to share information with PCGs, social services and other organisations.

6.3.3 SLaM's telehealth strategy

The discussion of SLaM's policies is mainly based on an interview with the Corporate Development Manager, a member of the Telemedicine Steering Committee⁴⁶. The Committee was formed in Summer 1998, in recognition of the Trust's existing expertise in telehealth and the opportunities to explore its potential further, as well as in response to the government's encouragement to look to technology for improvements in healthcare delivery and its interest in telehealth in particular.

So the group [Committee] started to meet last Summer and very quickly decided that there was quite a lot of activities going on, a lot of interest from our own clinicians. (Corporate Development Manager, SLaM)

The Committee's aim is to build on the work of two clinicians who set up telehealth projects to develop a more systematic and integrated type of service that could be rolled out to the various directorates of the Trust. The goal is also to secure long-term funding.

According to the Corporate Development Manager, SLaM's telehealth vision has a number of strands, including three main ones. The first, is about improving services to primary care and delivering mental health services locally, i.e. bringing outpatient services to GP surgeries rather than providing them in a hospital setting. Already one GP surgery (the Grove Medical Centre) is linked to a psychiatrist in the local hospital who offers consultations using video conferencing equipment. (This project is described in the next chapter.) The Trust is considering replicating this type of service to other GP practices in the area, or using the Grove Centre as a hub (having local video conferencing centre), with other practices referring their patients there.

The second strand is about the Trust and how it works. It is about linking different sites and using the equipment for shared training and education and better communication so “we are not strangers to each other as perhaps we are sometimes” (the Corporate Development Manager, SLaM). This is particularly important now as there are 3 organisations covering 4 boroughs with in-patients services on 4 different sites, and many

⁴⁶ The Corporate Development Manager was responsible for preparing a business case to secure more funding for research, exploring the potential of telehealth services in terms of delivering mental health services locally and with the primary care sector.

community sites. This means that the need for effective and rapid communication is even more real, particularly if the Trust is to become one organisation and not just 3 that have been lumped together.

A Lotus Notes-based clinical system, called Current Clinical Summary, facilitating electronic exchange of patient information has already been implemented in parts of Lewisham and is proving to be a big success according to the Borough Director for Lewisham at SLaM:

Information systems are a big business in a private sector but there isn't any off-the shelf packages available for mental health services. So, we made our own. And it is brilliant, absolutely brilliant. Even folks who are really old school, who at first would not look at, started to use it and they love it. All the staff who originally didn't want to touch it with a barge pole have been singing praises. And that was the test of it. I think that's the point: if you do develop something that is so clinically useful that supports someone doing their job, of course they are going to love it. Whenever it is a computer or another technology, as long as it helps them to do their job. The system is great it will revolutionise how we do our work.

The Corporate Development Manager at SLaM foresees an important role for telehealth, particularly in the view of the merger:

So it is an immense size Trust, one of the largest in the country, posing huge communication challenges, but also opportunities. [...] Each part of organisation has a reputation for best practice in a particular area and we should share it quickly and embed it in the culture. Telemedicine would be one way of doing that, bringing community teams together, linking different sites and training departments, for research and education for example, as well as daily uses of clinicians talking to each other. [...] Also for management it would be a very useful tool because now we spend a lot of time travelling to and from meetings, so if you could click in a TV screen and talk to each other, that would be very good.

The third aspect of the vision is about education and training, stretching beyond one Trust and spanning other primary and secondary care organisations in the UK and beyond. This involves harnessing expertise of other organisations through on-line, virtual lectures and seminars, and vice versa – the Trust has expertise that others could link in to. The Trust is already providing the supervision of students in Northern Ireland.

At the time of interview the plans were being made to secure funding to develop a systematic and integrated services that could be rolled out in different parts of the Trust. In order to do this, however, a long-term funding is required:

The other big problem that we had at the time was that although we had a number of projects, they were all founded on yearly or part yearly budgets or grants. [...] This was really hindering progress of those projects and the development of an integrated service, because as soon as funding run out

the project had to stop. There was no continuity, no way of binding different pieces together. And I think that's a story everywhere, certainly everyone I have spoken to or heard had the same story. (Corporate Development Manager, SLaM)

What is also needed, is a more detailed feasibility study and a plan of action, as indicated by the Corporate Manager:

What we have done so far is to identify what our vision is. Now we need someone to cost it up, to determine the core components of the service, who would be involved, how much of their time, how much that would cost, which GPs or PCGs would signed up to this, how much equipment would we need, the practicalities of that. Also, what would be the financial increment and financial advantages. We would need an economic element.

A number of obstacles to realising this vision have been identified by the Corporate Development Manager:

We would have to sell the idea within the organisation and get clinicians signed up to delivering services in this way [via telehealth]. Which is a very big cultural shift. There are some people who are very enthusiastic and others who have their reservations. That would be a very big change. I would compare it to when people first started using email and computers. At the beginning they said 'I will never use a computer'. It has taken years. Now nearly everyone uses it. So, it will probably take a lot of time.

SLaM's vision is broad and comprehensive, as it is not limited to a few disconnected projects but rather it acknowledges the potential of telehealth to permeate many aspects of healthcare delivery, at the interface with patients, other organisations and within the Trust. However, so far, the implementation is largely ad-hoc, mainly building upon work of two psychiatrists in the area of telehealth, who saw the potential of new technologies to deliver care locally (via tele-consultations) and increase communication between different parts of the organisation (e.g. through video conferencing and transmission of patient data). However, other projects are also under development, including the web site for people with mental health problems (this project, called EmpowerNet, is discussed in the next chapter).

6.3.4 Guy's and St Thomas' Hospital Trust's telehealth strategies

In St Thomas' and Guy's Trust there is a Telemedicine Working Party, which includes many clinicians. However, as the interviews conducted reveal, in terms of outputs, it is not the focus of telemedicine in the Trust. Instead, the projects are generated from two areas: corporate development, which looks for opportunities from outside of the NHS and clinical development, which includes IT staff and people from the medical director's

office. Thus there is a technical and clinical leadership to telemedicine. In addition the 'Information for Health' steering group⁴⁷ is responsible for providing the structure to steer different projects, including referrals, pathology, radiology, on-line results and outpatient booking, as well as web-based information.

To form a picture of telehealth strategy people from both areas were interviewed, including the Telemedicine Manager from the Corporate Department, the Clinical Development Manager, as well as the IT Strategy Manager, and the IT Consultant & Telemedicine Manager.

Guy's and St Thomas' telehealth strategy is, at least partly, embodied within their wider '*Continuation of Care*' strategy. The strategy does not exclusively focus on the application of ICTs, but rather it considers ways of improving the service delivery. Specifically, it is aimed at:

- Improving the quality of communication, by harnessing new technology and working closely with primary care professionals.
- Improving the continuity and quality of service delivery, whether thorough the development of agreed pathways or protocols, or through improved access to service.
- Improving knowledge and skills through working in partnership to develop joint training and professional development. (Guy's & St Thomas' Hospital Trust, 1997 p 3)

The strategy reflects the Trust's overall ambition to provide integrated care, regardless of where it is provided. It also responds to the government's drive towards seamless care, with barriers between secondary and primary care (and social services) being brought down, and the emphasis on local, primary services.

In this strategy context telehealth (particularly email) is seen in terms of supporting communication and transfer of clinical information between different organisations (including primary care). E-mail and Internet-type services are also seen as a good way of providing primary healthcare teams with on line information about the services and training that the Trust offers. In addition, the '*Continuum of Care*' strategy mentions the development of telemedicine links to assist in the provision of services to remote areas.

The interviews conducted reveal that one of the distinctive drivers behind telemedicine at St Thomas' and Guy's Trust was their contract for providing medical cover for NATO

⁴⁷ Formerly called IT Steering Group.

forces in Germany and their families. The Trust has developed communication links with field hospitals to be able to provide second opinion and help to decide if patients have to return to the UK to be cared for in the Trust. Store-and-forward technology is used for transmitting patient's data, while the majority of live transmissions are utilised for conducting meetings rather than for clinical consultations.

Building on this, the Trust is looking at other areas for developing telehealth services and opening business opportunities, as identified by the Telemedicine Manager from the Corporate Department:

There is an opportunity for the Trust to get more customers, to make more money through the use of telemedicine. We could serve our existing National Health customers; whether it is a local GP surgery or a hospital to which we provide secondary or tertiary care, not necessary patients, rather Health Authority would be the customer. Then, we can look at non-NHS customers – private patients, foreign referrals, and commercial insurance.

As St Thomas' hospital is a medical school it also looks towards potentials of telehealth to improve training. Most importantly, it strives to maintain its status as a centre of excellence and thus it constantly investigates if and how available and future technologies can help to deliver better care and better service to its customers.

A tactical approach to implementing telehealth is favoured by the IT Consultant & Telemedicine Manager:

Benefits of telemedicine are as yet to be proven in practical day to day applications. We try to find those projects, which can offer a 'quick win', where we can get a service functioning which demonstrates to people how telemedicine can be used.

The Trust is involved in a number of telehealth pilots. The following projects were initiated by the Trust in April 1998: Histopathology, Dermatology, Radiology, Psychiatry, Video Clinic, Women and Children (Foetal Ultrasound). These are still ongoing except for the Foetal Ultrasound. There are also plans to discontinue the histopathology project that involves remote control of a microscope using satellite communication and then high speed ISDN lines. It was concluded that the technology is inappropriate at this stage, partly due to the large expense (several thousands of pounds). (The Deptford Foetal Ultrasound project will be discussed in Chapter Seven.)

In summary, it appears that as with SLaM, St Thomas' Hospital's telehealth strategy has a number of strands. It incorporates delivering services more locally, improving communication with different organisations and within the Trust, training, and harnessing opportunities of telehealth to confirm the Hospital's name as a centre of excellence and capturing other markets. Overall, the Trust considers telehealth (or using their term telemedicine) as one of the significant, future changes that will affect both the provision of care and their strategic development.

6.3.5 Further interpretations of local Trusts' strategies

Transformism versus continuism and concordism versus antagonism

The first ('preferred') reading of the Trusts put forward an image of organisations endeavouring to provide best healthcare and health services possible – with ICTs used to support these aspirations. Thus telehealth is seen as supporting internal working of the Trust (through better communication and training), enabling seamless delivery of services (through better co-operation between different parts of the NHS and beyond), and directly changing (improving) the services delivered to patients (e.g. through telepsychiatry).

Beyond this supportive role, as with Lewisham Local Authority, in policies of SLaM and Guy's & St Thomas' Hospital Trust, ICTs are often ascribed transformative characteristics and given a dual role: as an enabler of change (i.e. in terms of realising the vision) but also as a factor potentially inspiring the changes. Moreover, our interviews reveal that telehealth is seen within a rich canvas of change in the healthcare delivery and in the wider society. Both managers quoted below agree on the need for radical change in the healthcare provision but they also point out that such change would be incremental:

What we need is a paradigm shift in the way health is delivered. [...] But telemedicine is not a priority of most clinicians. There are usually clinical and cost situations, waiting lists and reconfiguration situations. That's why I say it is a revolution but it is going to happen by evolution. Put it a little bit here, get it working, extend it, make it into a little service, show benefits [...]. Try to get them to think if they are delivering or changing a service – what role telemedicine would play in that change. (Telemedicine Manager, Corporate Department, St Thomas' Hospital)

I think the way we deliver our healthcare at the moment is still very much grounded in sort of post-war British society. [...] Keeping people waiting for days if not months for a treatment when they are in a lot of pain is just not appropriate or sustainable in this day and age. [...] And it seems very wasteful and ineffective the way we organise our health services. But I think changing this is going

to entail a fundamental change in a way doctors organise their time, in a way hospital wards and outpatient services are run. That's going to mean big shifts in power and people letting go of the ways they have worked previously and that's not going to happen over night. (Corporate Development Manager, SLaM)

These citations incorporate a number of themes. The first highlights telemedicine's role as an enabler of change, but change that is initiated by clinicians and situated within a context of redesigning services. In the latter, the Corporate Development Manager at SLaM draws our attention to problems of the current system. She points out the need to change the way healthcare is organised. She acknowledges that this would not be easy, as it would entail altering working practices and power shifts. The concept of 'power' is a re-current and important theme in the interviews. Thus, although in this thesis we focus on patient empowerment, rather than on alterations of power relations between professionals, we felt it was important to signal this issue here.

It is again mentioned in the context of the move towards primary-based care. The Corporate Development Manager at SLaM stresses that the changes would not be cosmetic but "... transfer real power to primary care. [...] We would like to have mental health services that are very much focused on the needs of primary care and making them more seamless between us and the primary care." But she acknowledges that this is not easy:

People will have to see benefits of the system. And then we also have to sell the idea to GPs if we really are going to have a primary care base service. We have to find a way of working with GPs, packaging our services in a way it is attractive to them. So they are not overwhelmed with the burden of suddenly having all those assessments happening in their practice, when they don't have enough time to see ordinary patients.

She then suggests that the call for change might come from patients (or citizens) empowered by new technologies, and links such changes to trends in information society, as expressed in the quote below:

I think that healthcare is going to be influenced a lot by the way the society is changing, by the way we are entering more informed age. Perhaps the public hasn't been that demanding up till now, because hasn't been well informed, but now there is a wealth of information becoming more readily available at people's finger tips, e.g. through digital television, Internet and web TV. There is already talk in the Department of Health about NHS TV. When people become more informed about their healthcare they will want more choices and input into decision making on how their care is delivered. I think this will lead to a change in the professional patient relationship and the way care is delivered. But I don't think we are going to see it soon, perhaps another ten years, twenty, fifty maybe. (Corporate Development Manager, SLaM)

This quote highlights many important themes, including patient empowerment, altering of the doctor-patient relationship and ultimately changing the nature of the NHS, from a paternalistic organisation to one based (as far as possible) on a partnership. Patient partnership is on the agenda (at least theoretically) in (some of) the local NHS organisations and more broadly in the whole of the NHS (Editorials, 1999). Yet, this quote presents a simplistic view of information (at one's fingertips), reproducing *fantasies or myths of information*. But it also acknowledges that changes will be slow to come. Our worry is that in this new NHS more informed and vocal patients may be able to get better treatment than those who are less knowledgeable or/and less assertive.

Nevertheless, this vision of changing NHS can be seen as concordist, as it is understood not only in terms of more efficient delivery but it emphasises continuous care, prevention, and generally a more holistic approach, as for example in the quote below:

Expanding telepsychiatry services mean that shared care model can be developed and that the professionals here can provide expertise and support to the professionals in a GP practice and it reduces travelling on both sides. We always fire fighting because of the sheer volume of case loads. [...] We are hoping that telemedicine will be one way of releasing of some clinical time so therapeutic work can be done to stop patients almost constantly being on the revolving door of getting well but not quiet addressing the problems, then relapsing and back again. So this is a way of intervening earlier in an illness or doing a follow-up. (Corporate Development Manager, SLaM)

Telehealth is also seen in terms of addressing social exclusion:

We feel that we have a way of revolutionising the delivery of health care, making it more accessible and immediate. And particularly for disadvantaged communities, they may not have access to expert care – a way of bringing it to them. Perhaps in 20 years it will be happening everywhere, as email, computers and Internet are now. But for now it feels like an uphill struggle with the funding. (Corporate Development Manager, SLaM)

Telehealth, is seen by the Corporate Development Manager at SLaM in terms of “getting some advantages for both staff and patients”.

Her views can be interpreted as a far-seeing vision of an enthusiastic person who can see and is willing to harness the potentials of ICTs to improve (revolutionise!) healthcare services and beyond that – to facilitate empowerment of patients/citizens.

But they can also be re-interpreted as being driven by instrumental reason and technological rationality. This is because they oversimplify the role of technology and focus only on one-sided positive effects. (Will the application of technologies, like

remote consultation and video conferencing, really release more clinical time? Will their benefits outweigh costs?)

Similarly, the researcher's own statement, in the previous section, summarising Guy's & St Thomas' Hospital Trust's position is very simplistic: "Overall, the Trust considers telehealth (or using their term telemedicine) as one of the significant, future changes that will affect the provision of care". First of all, it implies that the Trust is a monolith organisation, where everyone is driven by the same aims and goals, and moreover where everyone holds similar views about telehealth. It subscribes to the view of one prevailing organisational (and techno-economic) rationality, ignoring the existence of 'multiple situated rationalities' (to use Avgerou's expression (Avgerou, forthcoming)).

Of course, there are 'multiple rationalities' and multiple views. While discussing *LIS* we pointed out serious problems identified in the document itself and by our interviewees with the implementation of the proposals, namely lack of funding, time and skills. In addition, there is very legitimate opposition to telehealth (or at least voices of caution), from different corners, even from those involved in telehealth. Although most people interviewed were enthusiastic about new technologies or at least believed that their potential may be harnessed to benefit citizens, some voiced concerns. For example, they worried that the quality of service might be somewhat reduced (e.g. through introducing electronic mediation) or that patients may lose confidence in the service they receive. A member of Lewisham social services expressed uneasiness about sharing data between social and health services, as this may lead to people withdrawing some information they would otherwise pass on to healthcare workers. She also questioned the viability of using teleconferencing equipment to communicate with the elderly or fragile patients, who often have hearing or sight problems and sometimes find it difficult to use a telephone.

The Consultant & Senior Lecturer in Old Age Psychiatry saw telecare systems (even those not based on video surveillance equipment but on some sort of sensing mechanisms) as potentially infringing people's privacy and the right to self-determination. However, this view was not necessarily shared by others (e.g. IHMS consultants) who pointed out that the elderly welcome the sense of security such systems bring. They considered the arguments about privacy and self determination as 'over intellectualising' the issue, of intellectuals speaking on behalf of others but essentially not being in tune

with their (the elderly people) feelings. Certainly home alarm systems are proving popular, so perhaps telecare would be too.

This discussion depicts different meanings that the same service or technology may have for different people. It also illustrates that people hold complex views and even thought many of the statements made by our interviewees could be seen as a reflection of instrumental reason or technological rationality, it does not mean that they see technology purely in terms of reified decontextualisation. On the contrary, they acknowledge the importance of organisational and societal context.

6.4 Conclusions: Meanings of telehealth unfolded in these readings

This chapter introduced the London Borough of Lewisham, highlighting its population's diversity, relative deprivation and health problems. It also suggested that although larger percentage than national average has access to the Internet at home, this is largely limited to younger people from higher social classes. It is within this context that Lewisham organisations are planning and implementing health and social care services.

Our research (including documents and interviews) indicate that Lewisham's Local Authority (LA) considers telehealth to be an integral part of a range of services provided, incorporating access to localised health information and the provision of alarms (linkline) in homes of vulnerable people, perhaps in the future turning them into 'smart homes'. The two LA documents considered here (Quirk, 1999; Sullivan, 1998) convey a belief that the employment of ICTs is pivotal to wellbeing of Lewisham people. Thus their application is very clearly seen in terms of Miles III (Deep, Broadening) quadrant within a wider vision of increasing social cohesion and minimising social exclusion by improving training and employment opportunities, supporting businesses but also by connecting people to each other and improving community spirit. Telehealth is also seen, by Lewisham LA, LSLHA and the health Trusts as an enabler of better communication and co-operation between organisations and of the provision of 'seamless' care.

Within the Trusts, telehealth acquires different roles, that of supporting existing services (e.g. emails used to contact patients), altering the delivery of current services (e.g. introducing new means of consultations e.g. in telepsychiatry) and providing new services (web-based information). From the patient point of view it has a potential to offer easier access to information, facilitate self-management of chronic diseases and creation of self-support groups not limited by geographical boundaries, and access to specialist services in distant areas (when the distance can mean another country or a deprived London Borough). Thus, as with Lewisham LA, telehealth is seen in concordist terms, within its social perspective (e.g. as empowering patients or reducing social exclusion) and its medical context (as providing healthcare).

But the interviews conducted at SLaM and Guy's & St Thomas' Hospital Trust, suggest another meaning of telehealth – that of a business opportunity. Telehealth is seen as a way of enhancing organisational status (becoming a centre for excellence) and increasing organisational income (when hospitals can enlarge their catchment areas and sell services abroad). Consider the citations below:

We think we have a real opportunity to be identified as a centre for excellence, to almost pilot telepsychiatry, telemedicine in the mental health field for the Southeast of England, given that this is one of the priorities in the Labour party's manifesto, Tony Blair has spoken about it in various speeches, and it is one of the key plans in '*Information for Health*' strategy. (Corporate Development Manager, SLaM)

There is an opportunity for the Trust to get more customers, to make more money through the use of telemedicine. (Telemedicine Manager, Corporate Development, St Thomas' Hospital)

I suppose if we don't do it [telemedicine], somebody else will. So, it could also be a threat to us if we didn't do it. [...] Someone could take patients from us. (Telemedicine Manager, Corporate Development, St Thomas' Hospital)

These citations implicitly indicate that telehealth acquires a meaning that is somehow removed from patients or citizens. Telehealth is seen as a potential source of profits in monetary and political terms, as something that can be played to the advantage of an organisation. This suggests that the developments in telehealth may follow technological-economic rationality.

However, these economic concerns are tempered by ethical considerations. In Chapter Two we suggested that the practice of medicine has strong ethical underpinnings and it is partly within this tradition that telehealth acquires its meaning(s). Thus, even within increasing managerialisation of the NHS and healthcare provision in general, cost

efficiency and cost-effectiveness are seen (or should be seen) in terms of releasing resources for other (perhaps more important) services, than in pure profit terms. Thus, although the business site of telehealth is readily identified and explored by the Telemedicine Manager from the Corporate Department at St Thomas' Hospital, the research activities are clinically driven:

We are a medical school hospital. We need to be conducting R&D into these new technologies from a clinical point of view. Remember, our role here is clinical services; we are not an IT or telecommunications company. Our business is medicine.

The main aim of telemedicine initiatives here is to improve the delivery of healthcare through the use modern telecommunications and IT – that's the overriding thing.

This chapter also highlighted problems with the vision of telehealth. First of all, the vision conveys a somewhat simplistic understanding of technologies (as tools) and organisations, ignoring 'multiple rationalities' present in organisations. Lewisham Council's documents convey a seemingly positive but simplistic message of modernising the Council and the Borough through the application of ICTs. They ignore any negative effects such proposals may have. In contrast, Local Implementation Strategy does indicate problems with implementing this vision, namely lack of funds and skills, and too optimistic time scales. Still, our interviews indicate that all the official documents underestimate problems. Although in general agreeing with the concept of a more open local government and ideas of close co-operation between different agencies (e.g. health sector and social services), many employees remain sceptical about feasibility of modernisation plans or are frightened by the pace of change that may lead to some people 'being left behind'.

Moreover, some people pointed out problems not only with the way the vision is to be implemented, but also with the vision itself (or rather with some aspects of the vision). For example, concerns were voiced about telecare and ideas of privacy and the right to self-determination. Furthermore, it was pointed out, that sharing customer data between different agencies is not only a matter of security (and thus having a technical solution), but also of preserving trust of clients, who may not wish social services, for example, to have their health data. Some people stated that telehealth and modernisation in general is being 'pushed on to them' (i.e. that the central government puts pressure on organisations to implement telehealth solutions, and the organisation then may force workers to embrace them). This raises concerns that those who may have genuine and

legitimate misgivings would be branded as Luddites. In this chapter we highlighted potentially alienating effects of IT on the Council staff, as well as financial costs of providing on-line services that are expected to lead to cut-backs in some conventional services (and thus privileging people with access to the Internet). Thus, (paraphrasing Feenberg), even relatively neutral systems are biased because of the prejudicial choice of the *time, place and manner of their introduction*. But, as we argued in Chapter Five, telehealth systems are not simple, relatively neutral tools, rather complex systems with many biases.

Concluding, we would say that, although in local strategies telehealth seem to acquire largely concordist meanings, our research indicates that these meanings are multi-dimensional and not unproblematic. An implementation may potentially be perceived in antagonistic terms (e.g. as a struggle for control, status and funding or/and as contributing to alienation of staff, etc). Failed implementation may adversely effect the quality of services to citizens. Yet, difficulties lie not only in implementations, but also, to some extent, with the meanings themselves. These meanings are re-interpreted and concretised in actual telehealth projects. The next chapter describes telehealth projects conducted in Lewisham by some of the organisations described here. These projects are then interpreted and re-interpreted in a number of readings, and some issues touched upon in this chapter, e.g. empowering qualities of such systems and their potential to help to address some of the processes of social exclusion, are explored further.

CHAPTER 7

Critical analysis of telehealth projects in the London Borough of Lewisham

The previous chapter introduced the local authority and the main healthcare organisations in Lewisham Borough, discussing their policies and strategies with regard to ICTs and telehealth. The chapter concluded that telehealth acquired strongly transformative and broadly concordist (at least in the official documents) meanings. Nevertheless, subjected to critical analysis, those meanings are not so straightforward. We noted that the strategies ignore local rationalities and situated meanings of telehealth. People's genuine concerns regarding the implementation of proposals were brushed away or at least under-estimated. Furthermore, not all the meanings of telehealth are concordist in their conception (not just implementation). Telehealth is also perceived as a means of increasing organisational status, extending catchment areas and as a source of additional income for the Trusts. Thus telehealth is seen in terms of technological-economic rationality. Nevertheless, the official documents (strategies) and the interviews conducted suggest that telehealth is expected to help to improve patient care by supporting the co-operation between organisations (within and beyond the NHS) and the patient-centred or rather citizen-centred model of healthcare, (e.g. by making the delivery of care more local).

This chapter seeks to explore how these different meanings are reflected in concrete telehealth projects in which the Trusts discussed in the previous chapter are involved. The first project or programme, brought together many organisations in their search to identify health and healthcare needs of the people living in a particular locality within

Lewisham Borough (Deptford) and sought to explore how those can be addressed through telehealth. The aim of this programme was purely exploratory. The latter part of this chapter covers projects that implemented telehealth services. Of those, five are discussed at greater length, other related projects are summarised in a table format. The projects discussed are: telepsychiatry service at the Grove Medical Centre; Telelink (foetal ultrasound) at the Deptford Market Women and Children's Centre; a web-based system (EmpowerNet) providing information about mental health problems and services; Total Purchasing Pilot (a healthcare Intranet connecting GPs in North Lewisham with the Health Authority and other organisations); and Seahorse project offering an on-line support system to HIV/AIDS sufferers, their carers and care organisations.

This chapter, first of all, provides description of these projects, focusing on their aims. Then, it revisits the telehealth projects described, analysing them through the perspective of critical theory and Miles' framework of information society scenarios. It focuses on the projects' aims but also highlights different stakeholders' interests and perceptions of telehealth. It also explores what can be learned about the projects from the way they were evaluated. For example, to what extent are evaluation practices related to the aims stated and what other concerns (perhaps not explicitly voiced) do they suggest. These interpretations are linked to the discussion on different notions of empowerment and social exclusion or inclusion enacted in the projects. Drawing on critical theory and bringing the research findings together the final section discusses the possibility of 'transformation within' of telehealth technologies and services they support.

7.1 Telemedicine and Telecare Programme

7.1.1 The first reading

Members of the Telemedicine and Telecare Programme Team, from the Institute of Health Services Management (IHSM), pursuing their interest in the field of telehealth, organised a project exploring the potential of telehealth to improve healthcare provision in Deptford (probably the most deprived area of Lewisham Borough), and more specifically at the Grove Medical Centre. The researcher attended the last meeting organised by the team, taking place on the 16th of April 1999. She was also given the

minutes of previous meetings and the final report produced by IHSM, as well as related reports based on other projects (IHSM, 1999a; 1999b).

The organisers expressed the hope that the project will provide:

- a basis for planning future services for the population of Deptford
- a guide to the development of telehealth services for the rest of the North Lewisham Primary Healthcare Group and the whole area covered by Lambeth, Southwark and Lewisham Health Authority and the London Borough of Lewisham
- a guide for similar communities elsewhere. (IHSM, 1999b p 3)

They managed to secure sponsorship from BT Health and co-operation of other organisations, including major stakeholders in the local healthcare domain: the Grove Medical Centre, Guy's & St Thomas' NHS Trust, LSLHA, Lewisham Hospital NHS Trust, The London Ambulance Service, The London Borough of Lewisham, Guy's and Lewisham Mental Health NHS Trust (now part of South London and Maudsley NHS Trust), and Optimum Health Services NHS Trust (now part of Community Health South London NHS Trust).

During the first workshop members of the Primary Health Care Team (PHCT), patient representatives, allied social workers and school nurses considered key healthcare related needs of the practice population. The second workshop, attended by the stakeholder organisations, focused on issues and problems facing health and social support services.

The core objectives that came out of the workshops are:

- Enabling and supporting self-care;
- Promoting better joint inter-agency working and within agencies (e.g. by modernising care pathways);
- Improving access to services and information (e.g. by introducing one stop shop and community based Poly-Clinic); and
- Improving effectiveness of services provided.

The detailed description of these points can be found in (IHSM, 1999b). These objectives indicate that, in general, the government's proposals for joint working, encouragement of self-care and improved access to information are considered important by the people 'on the ground'.

During both workshops the participants were asked to consider if telehealth could help to address any of those objectives. As a result a list of potentially beneficial telehealth applications was compiled:

- Interpreting services available to all agencies;
- NHS Direct – especially if enhanced to facilitate immediate referral and, preferably to a number of different agencies;
- Virtual home visiting by community nurses, health visitors, specialist nurses and GPs;
- Telephone follow up or consultations by hospitals GPs, nurses, social services;
- Home-based monitoring of health status and domestic activities;
- Prompting services for a wide range of activities;
- Electronic Health Record Development (although EHR is often seen as separate area to telehealth, it is central to information sharing between organisations);
- Video conferencing facilities between the community and their support, electronic case conferences and other meetings;
- Store & forward outpatient referrals;
- Telemedicine consultations from home / clinic to regional /national centres allied to modernised care pathways;
- Interactive outpatient clinics via live video;
- Continuous Professional Education;
- Access to National Library of Health/Medline, etc. through Intranet;
- Establishing & monitoring compliance with agreed protocols through disease management systems; and
- Community radiology services.

Additional applications, not suggested during meetings, but included in the report are:

- Laptops for district nurses, with decision support systems and facilities for direct referrals;
- Telepsychiatry; and
- Wider Internet access.

These programmes illustrate the wide-ranging needs of the citizens and healthcare providers, and suggest possible telehealth services that may help to address them. In all

this, telehealth is largely seen as (fairly) unproblematic and its benefits are considered as either already proven in other settings or requiring further assessments. Little doubt is expressed about the viability of some of the projects. Integrated, strategic approach and multi-use of equipment is proposed in order to reap most benefits and reduce costs. Overall, the report concludes in optimistic tones:

The groups identified a range of opportunities where the introduction of Telemedicine and Telecare will improve both the quality of care and the quality of service available to the population served by the Grove Medical Centre (IHSM, 1999b p 15)

7.1.2 Alternative reading

The report claims that the workshops and meetings run as a part of this programme focused on identifying the needs of patients and providers, rather than on promoting new technologies. Thus it appears clearly not to be driven by instrumental or technological reason. Nevertheless, a careful reading of the report notes its very enthusiastic tone when describing telehealth and a very slight treatment of concerns (e.g. ethical) or implementation problems. For example the report states:

The ability of Telemedicine and Telecare to meet particular healthcare needs has been demonstrated in a number of projects in a wide range of applications and specialities in this country and elsewhere. Two such projects are successfully operating in Deptford, one linking the Women and Child Health Centre in Deptford with the Obstetric department at Guy's Hospital and another providing telepsychiatry services between the Grove Medical Centre and South London and Maudsley NHS Trust. (IHSM, 1999b p 3)

The literature review in Chapter Two, indicates that there is little reliable evidence regarding benefits of telehealth, particularly its cost-effectiveness (AHRQ, 2001; Roine, et al., 2001; Whitten, et al., 2000), although some projects have indeed demonstrated ability to meet healthcare needs (Johnson, 1998; Trott, 1996; Trott and Blignault, 1998; Whitten, et al., 1998). Furthermore, one of the examples mentioned in the above citation (the Deptford Centre foetal link) did not operate successfully (see section 7.2 for analysis of this project).

The report also utilises a rather simplistic notion of empowerment, without considering implications of the proposals (e.g. would the staff be empowered or burdened with extra responsibilities):

A Telemedicine link from the nurse at home would empower community services to deliver a greater proportion of care, including preventive care, at home at the time it was required. (p 7)

Virtual home visiting by community nurses, HIV & specialist nurses. Experience to date shows that these services provide a cost effective and patient empowering supplement to traditional services. The clinical and business and service cases should be positive but will need validation. (p 12)

The second citation indicates that the authors see virtual home visits as an additional service (a supplement), rather than a substitution for face-to-face interactions. This may be seen (in a very limited way) as empowering to patients. However, cost savings in existing projects have been shown in terms of substitution of at least some home visits. It would be very difficult to show a 'business case' for a service that would deliver additional virtual visits without reducing face-to-face visits (Doze and Simpson, 1997; Mahmud and Lenz, 1995). This problem raises an important question of where the NHS and public services are heading and to what end telehealth will be used. Substitution of personal by virtual visits is unlikely to be 'empowering' for patients. One could argue that patients would benefit because more virtual visits can be made in place of one face-to-face visit, at the same cost. Nevertheless, one of the participants in the workshop, interviewed by the researcher at a later date, expressed doubts about such services, pointing out that the elderly often find it difficult to use technology (e.g. because of hearing and visual impairments). This indicates that clients of such services must be at best carefully chosen.

We also note, that her misgivings did not find their way into the final report. She said that she knew little about telehealth, was told to attend the workshops (to represent social services) and felt that there was not enough emphasis on social services work. This indicates difficulties many people face when attending meetings. The ideal speech situation (to use Habermas concept) is difficult to achieve. Although during the workshop everyone was briefed on the potentials of telehealth, the concept of re-engineering and the planned future for healthcare in England, this was not enough to ensure equal 'footing'. Obviously some participants (for whatever reasons) had been able to exercise more power (or at least have more clout). It is also important to note, that the Programme was sponsored by BT Health, who had their own agenda. Nevertheless this Programme was exploratory, aiming at generating ideas, rather than implementing concrete proposals. For this reason, people might have been freer to express their opinions, than in other settings. (For example, Forester (1993) deconstructs urban

planning meetings, showing how certain participants can use their position and language to force their agendas.)

Thus, despite our criticisms, we acknowledge that the Programme was a valuable exercise. One that needs to be repeated and where voices of concern should be more actively encouraged. The Programme, notwithstanding its limitations, produced valuable suggestions regarding potential application areas of telehealth in Lewisham. It gave healthcare and social workers opportunity to learn about telehealth, as well as to discuss potential reforms to the way services are run. It also provided (limited) forum for patients to voice their opinions (representatives of patients were invited to the first workshop). This is particularly important in view of the government push towards telehealth and 'modernisation' in general. Any discussion must be welcomed. Although, inevitably centred around technology, the approach taken during the workshops did encourage looking at problems first, rather than finding technological solutions. As it is noted in the report:

Some suggestions represented re-engineering of business process rather than pure technology insertion. The introduction of technology to modernise service delivery is likely to produce bigger benefits than technology alone. (IHSM, 1999b p 10)

Nevertheless, some critical theorists, for example Marcuse (1970) and Ellul (1964) would question the presumption that we need more technology. In this thesis, we take a view that technology cannot be dismissed, but rather must be re-constructed to serve social aims. (We acknowledge difficulties of this endeavour and negative, often unforeseen effects technology may have.) In the following section we explore five telehealth projects taking place in Lewisham, considering what attitudes or images of telehealth they perpetuate and create, and if and to what extent they aim to utilise telehealth towards emancipatory aims.

7.2 Interpretations of the five telehealth projects

These explorations of the projects are conducted through the hermeneutic circle, with four readings offering different points of departure and perspectives, all contributing to our understanding of telehealth (the 'whole').

The first reading introduces the projects and their aims. This is followed by the discussion of the ways the projects were evaluated, focusing on what can be learnt from this about the projects and about telehealth. The subsequent readings critically examine the projects' aims and the way they were implemented, focusing on the role of telehealth. First, the projects' claims are examined through the lenses of the notions of social exclusion and empowerment. Then, Miles' framework is applied to interpret the projects in terms of control and change dimensions. Although offering a distinctive perspective, each reading of the projects is guided by critical theory principles, and it reveals underlying meanings of telehealth and the vision of health service they may support.

Before we embark on our journey of interpretations of the five chosen projects, the following tables summarise these and other projects in Lewisham and surrounding areas, to illustrate the scope of activities taking place.

Table 4 Projects constituting the main focus of our study (described in this chapter)

Project Name/Organisation / Start Date	Description	Aims	Scope	Technology used	Evaluation
Main organisation: Division of Psychiatry, United Medical and Dental Schools, Guy's Hospital (now SLaM).	Linking a GP surgery (the Grove Medical Centre) with the Ladywell Unit (inpatient unit) to enable psychiatrists conduct teleconsultations with patients at the surgery.	Clinical: better patient care achieved by local care provision and better communication between primary and secondary care professionals.	1 GP surgery (primarily 1 GP involved) and one hospital, inpatient unit (mainly 1 psychiatrist). The pilot phase: 24 consultations with 14 different patients.	IATV (interactive TV) over ISDN lines: videoconferencing system: Swiftsite Version 1.01, Siemens PictureTel Connection: ISDN2 (128 kbit/s).	Communication Questionnaire (planned economic evaluation and RCT).
Women and Children's Centre (Foetal Ultrasound)	Early Pregnancy Assessment Unit at Deptford clinic supported by a telemedicine link to the Guy's and St Thomas' hospitals. Ultrasound image together with key patient data to be viewed live from either hospital, with video conferencing facilities also available. Alternatively a store-and-forward technology can be used.	Technical: explore new technologies and to determine the responses of patients and professionals staff to interviews conducted via IATV.	1 local Centre (Women & Children's) plus two hospitals (primarily Guy's, in some cases also St Thomas').	Combination of store & forward and live video. Links: ATM (ISDN 6). Equipment: B1/Global TeleMedix system.	Evaluation: Formal, multifactorial evaluation conducted by an external organisation.
Start Date: end of 1998 Link discontinued after 1 year	Support the Centre staff by providing a link to specialists.	Support the Centre staff by providing a link to specialists.	ISLHA, local Trusts and GP surgeries from the North Lambeth Primary Care Group.	Comments: Telemedicine link has not been used at the clinic.	
Total Purchasing Pilot (the healthcare intranet)	The Intranet provides secure connection between the PCG members and other organisations, including ISLHA. Linked to the national NHSnet. The system offers	The Intranet is seen as offering a great opportunity for facilitating co-operation within the PCG and with external agencies, as well as encouraging practice of evidence-	Standard PCs connected to the NHS Intranet and the Internet via a PSTN line (i.e. a	Interpretative evaluation largely focusing on user satisfaction and utilisation of the system but also covering other	

Start date: 1998	email facilities, data on different agencies within the authority boundaries and beyond, general information, including health and the NHS related news, and search facilities, e.g. of medical journals. Can be used for many tasks, including exchange of patient-based information and clinical governance.	Seahorse I – feasibility study and analysis of requirements. Seahorse II – implementation of the web-based system, consisting mainly of repository of information and links to other sites but also interactive services (bulletin boards, comments on sites and articles produced by service users, etc), and decision support software for GPs.	based medicine. It is hoped that the deployment of the Intranet may eventually lead to a better care for patients.	regular telephone exchange line) were installed in participating surgeries.	factors, as per the framework in figure 6.
Seahorse I & II	Co-ordinator organisation: the Tavistock Institute Duration: Seahorse I 01.12.95 – 31.11.96 (Final report produced in February 1997). Seahorse II 08.1998 - 30.08.2000 (official end date, but evaluation is still ongoing as of November 2000).	Explore the potential of telematics for supporting people with HIV/AIDS and facilitating collaboration between carers. This includes assessment of information needs of self-help groups and developments of computer-based applications.	There are number of partners involved in the project from the UK, Spain, Greece, Rumania and Italy, including ISLHA (in Seahorse I) and the London Borough of Lewisham (in Seahorse II).	Web-based system, email facilities, decision support tools, on-line interactive user monitoring tools.	Evaluation: to be conducted by all localities involved. Users to complete a questionnaire on their knowledge of HIV/AIDS issues, what information they consider important, satisfaction with the service and usage patterns. The evaluation report is to be submitted to the European Commission.

Table 5 Other projects where at least one organisation involved is based in Lewisham (not described further)

Project Name Start	Description	Aims	Scope	Technology used	Evaluation comments
Teleconferencing Main organisation: SLaM (Ladywell Unit)	Teleconferencing system linking different parts of SLaM. Linking community team and the inpatient team now separated by one mile distance. Although it is a short distance, teams need to communicate very often, walking takes time, driving difficult, no adequate parking.	Improve communication and co-operation between different teams. More specifically, assist rapid discharge of patients from the wards to the community teams, and conduct case conferencing. (Historically the teams used to be very close, but since moving to other building communication has been more difficult).	Ladywell Unit and a few community sites within one Trust.	PC-based telecommunication system.	Not used much; problems with reliability and cost of connection, compounded by minimal technical support. However, the psychiatrist involved is very enthusiastic about the idea. Hopes it will catch on. (Considers it cheaper than paying for more parking spaces, and emphasises that close co-operation is vital for good care).
Telecommunication link Main organisation: SLaM Start date: Preliminary work August 1998, project operational in February/March 1999. Short term funding (initially till August 1999, then extended).	Providing teleconferencing facilities between different wards (John Dixon acute ward at Guy's) and intensive care unit (PIC) at Lewisham. (They are separated by about a 5 mile distance).	Facilitate the assessment process that PIC and nursing staff make. Improving communication between different wards. More proactive care – the link enables psychiatrists to talk to patients in acute ward before crises arise and they have to be transferred to PIC. Continuity of care -allowing nurses from John Dixon ward to maintain communication with patients in PIC. Future possibility: the provision of relative-patient video link.	One ward and one intensive care unit within one Trust (two hospital(s)). Initially just few patients taking part in the trial.	IATV link.	“The project seems to be overcoming or unearthing a number of communication problems. [...] It needs to be evaluated properly.” (Corporate Development Manager, SLaM). (In preliminary stage analysis of referral pattern between two acute wards: Ladywell and Guy's were conducted.)
Diabetes 3 Main organisation: Guy's and St Thomas'	Information sharing about people with diabetes (now web	Better collection of health data on people with diabetes (common data capture between Lewisham, St Thomas	3 hospitals, Health Authority, local GPs (within Lambeth, net.	Standard web-enabled version utilising NHS	Evaluate technology and security. Comments: work on better data

Trust based). Start Date: 1999	Clinical messaging system.	and Kings hospitals). Development of chronic disease management system (first for diabetics, then maybe extended to asthma sufferers, etc).	Southwark and Lewisham area).	capture has been going on for 15 years, with different technologies being employed.
Direct bookings Main organisation: Lewisham Hospital Trust Start date: June 2000	Direct booking of patients. Since June 2000 GPs in South Lewisham Clinic can book patients into the hospital using a web-based system.	Speeding up referral process (to benefit health professionals and patients). Improving the process through the use of a protocol. Because GPs have to answer a number of questions regarding patients' history, treatments and tests undertaken, referrals tend to be more appropriate, tests do not have to unnecessarily repeated by the hospital staff. GPs might be asked to do simple preliminary tests. If the patient is not suitable for the treatment sought by the GP, the system might suggest an alternative.	For the moment, this service is limited to routine appointments with the Women's Health Unit.	Perceived factors contributing to the acceptance of this system: clinicians in Women's Health Unit are IT literate and have positive attitudes towards IT (this is not true of all clinicians in the hospital); the protocol has formalised an existing process rather than introduced new procedures; it was agreed between GPs and clinicians, thus they were 'enrolled' into the system. It benefits clinicians because it prevents inappropriate referrals and allows an element of control.
Electronic referral/results Main organisation: Lewisham Hospital	Electronic referral/results system linking Lewisham Hospital and GP surgeries.	Improve the process of referrals (make it more speedy and appropriate). Improve the way results are delivered (faster, in a more readable format, i.e. typed, including more information).	As of June 2000 - 16 GP practices signed up for the electronic referrals. Electronic pathology results were being delivered to about 20-22 surgeries.	Standard PC and software. The practices involved are usually large, with many doctors, and in terms of number of patients they cover in region of 60-70% of Lewisham population. There is no electronic protocol for delivering discharge summaries but they go out virtually to every GP practice, which has a fax. The majority of practices want to participate and are very satisfied with the results. Some have no appropriate equipment (PC linked to the Internet). One practice in the locality has no fax, as well. Thus the trial cannot encapsulate all of the local

				surgeries.
Video conferencing between Lewisham hospital and tertiary hospitals.	Video conferencing links with tertiary hospitals, allowing transmission of different images, e.g. pathology samples.	Initially: Lewisham, Guy's and St Thomas' hospitals. If Lewisham Hospital becomes connected to Guy's, it will automatically be linked to St Thomas' (because these two hospitals are already linked). Ultimately it is hoped that the connection can be extended to other organisations, first of all – another tertiary London hospital – Kings and then to other hospitals around the UK and perhaps beyond.	Video conferencing equipment: ISDN lines. Considering radio or infra-red links (128 Kbit/s ISDN lines have not enough capacity to transmit X-rays, etc.) Guy's and St Thomas' hospitals already have their own internal, very high band communication.	After demonstrations, the clinicians were impressed with the system but initially worried about the quality of images (e.g. pathology samples) transmitted. After further checks they were satisfied with results, concluding that for only 1% of the work they currently do, the quality of the transmitted images might not be good enough.
Current Clinical Summary Main organisation: SLaM	Small pilot project implementing an EPR-type system for mental health patients.	Initially part of Lewisham, then extending to other boroughs covered by SLaM.	Software: Lotus Notes used on a standard PC.	Very popular system. Appraisal of the pilot was made by the Trust and the system is going to be implemented across the Trust (beyond Lewisham, to reach Lambeth, Southwark and Croydon). Then, extending its reach to primary care (when GPs are connected to NHS net).

Table 6 Projects involving Guy's and St Thomas' Hospital Trust (but none of the organisations based in Lewisham)

Project Name /Start Date	Description	Aims	Scope	Technology used	Evaluation
Electronic referral Main organisation: St Thomas' Hospital Start date: 1999	Electronic referral system	Speed up and improve the quality of referral system. Provide more structured guidelines on what clinical information is to be included.	St Thomas' Hospital and participating GP surgeries (initially one)	Standard PC with connection to the Internet. Using email for referrals.	Initial problems with technology and lack of IT skills but overall GPs are eager to have such a system. To be extended.
Radiology Main organisation: Guy's & St Thomas' Hospital Trust Start date: end 1999/beginning 2000	Transmission of radiology images between St Thomas' and Guy's Hospitals. (Capturing high definition radiological images and moving them to workstations.)	Switch from film-based, black and white images to digital images. Improve access to and sharing of data (images).	2 hospitals.	Picture Archiving and communication system – PAX.	For the service to work well workstations costing 5-6 times more than normal PCs and high-band telecommunication links are required. (NHSNet is not really adequate, would easily overload.)
Radiology Main organisation: Guy's & St Thomas' Hospital Trust Start date: March 1998	Transmission of store and forward images between St Thomas Hospital and Dubai.	Second opinion service.	Initial study of 60 cases.	Package used for radiology: Vistran Telecommunications: ISDN.	
Psychiatry Main organisation: Guy's & St Thomas' Hospital Trust Start date: April 98	Psychotherapy service from Guy's to Northern Ireland (a pilot study).	Improve access to specialist care for remote areas.	2 GP practices in Northern Ireland and a hospital in London.	Video conferencing equipment.	
Dermatology Main organisation: Guy's & St Thomas' Hospital Trust	Store and forward technology used to send still digital images between GP practices and the	Develop a protocol for sending the images. Develop a second opinion service.	2 GP practices, Guy's and St Thomas' Hospitals.	Package used for dermatology: Vistran Telecommunications: ISDN from GPs and ATM between Guy's and St	

Start date: April 1998	departments of dermatology at both Guy's and St Thomas' (also between the two hospitals).		Thomas'.	
Histopathology	Trial with Oslo and Hammersmith to evaluate a package called PathSight, allowing a microscope to be driven remotely.	Evaluate technology.	3 organisations.	PathSight software, Links: Initially satellite, then ISDN.
Main organisation: Guy's & St Thomas' Hospital Trust	Start date: April 1998			At the time of our interview (1999) it was suggested that the project would be discontinued. It was deemed that technology was not appropriate and too expensive, and there was no over-riding need for using it.

7.2.1 First reading of the telehealth projects

Telepsychiatry project

Our first example is a small pilot project linking a GP practice (the Grove Medical Centre in Deptford) with consultants in the Ladywell Unit, University Hospital Lewisham. Consultations between patients and psychiatrists are conducted remotely via teleconferencing equipment in the presence of a GP (McLaren, et al., 1999). The researcher interviewed the psychiatrist who organised this project, his colleague with whom he was involved in the earlier project, and the GP taking part in the pilot. The psychiatrist told the researcher that the reasons behind the project are two-fold: to address perceived clinical need and to explore new technologies. Specifically, the aims of the pilot phase are: to produce guidelines for communication via interactive television (IATV), and to determinate the responses of patients and professionals staff to interviews conducted via IATV (McLaren, et al., 1999).

Beyond this, the aims are to move towards more local, primary care based services and to increase co-operation between different organisations within the NHS (particularly between primary and secondary care). This, it is hoped, would improve patient care. This is particularly important for mental health patients who are increasingly being catered for in the community by different agencies and professional groups. GPs, social workers, occupational therapists, community psychiatric nurses and other professionals are required to attend meetings with psychiatrists when the care programme for a patient is being reviewed. Presently, because of lack of time and distances involved, GPs seldom attend such meetings. It is hoped that teleconferencing facilities will encourage them to take part virtually, that the Trust would be better able to support them, and that a shared care model can be developed and sustained.

A more equitable service is proposed as another potential benefit. This is because some, perhaps single-handed practices, may not possess the same resources available to bigger practices, and the Grove Medical Centre with its teleconferencing facilities might offer some services to patients from other practices. (But we suggest that this would result in considerable organisational problems and have impact on professional roles and status.)

Moreover, the people involved in the project claim that patients are more likely to attend consultations undertaken in a local practice rather than in hospital, because it is easier to get to and there is no uneasiness and stigma associated with visiting a psychiatric ward. They see such services as particularly beneficial for poor or vulnerable patients.

Deptford Market Women and Children's Centre – foetal scanning link

Another project in the same geographical area is located within the Women and Children's Centre in Deptford. The Centre, launched in the autumn of 1998, offers services associated with paediatrics, antenatal care, gynaecology and an early pregnancy assessment service to support women having difficulties with the early stages of their pregnancy. These services have been traditionally offered within the hospital's outpatient departments. The Centre is staffed by midwives and nurses and there is no permanent consultant on the premises. It was intended that the Early Pregnancy Assessment Unit at the Centre would be supported by a telemedicine link to the Trust's hospitals. If a doctor's opinion is required immediately, telemedicine permits the ultrasound image together with key patient data to be viewed live from either hospital, with video conferencing facilities also available. Alternatively a store-and-forward technology can be used.

The Centre (and the project) is a part of a larger initiative of the Guy's and St Thomas continuation of care strategy (described in Chapter Six). The Centre is integrated into the local primary care delivery. Local GPs and their teams are involved in the planning and management of the Centre. It is hoped that the Centre will act as a focus for developing links with services delivered by Community Trusts and the local Council, as well as contributing to improving health education links with schools. It is also expected to serve as a health information centre for local people and a shared resource for the primary care teams.

The project is a national pace setter, providing an innovative approach to the delivery of acute care. It is in line with the Government's thinking on improving public health by breaking down the barriers between the different agencies contributing to a population's health. (Draft version of the evaluation report of the Deptford Market Women & Children's Centre, Introduction Section)

Our interviews with the Trust's staff and a nurse at the Centre, revealed that the Centre's aim is primarily seen as providing new service and to increase access to appropriate

healthcare for women in a very deprived area. It is thought that, despite proximity to the hospital, women find it difficult to travel there. Car ownership is low and public transport thought of as unsafe. Not many women can afford to pay for childcare needed during their visits to the hospital.

There are many partners sponsoring the project: Creekside Business Partnership, Lewisham Council who helped with the property and BT Health who gave discount on some equipment. However, it is mainly funded by St Thomas' Hospital from its development funds.

The researcher visited the Centre and interviewed the senior nurse there. She also spoke to a number of people from Guy's & St Thomas' Trust who are involved (to a lesser or greater degree) in the project, that is: the Clinical Development Manager, IT Strategy Manager, IT Consultant and Telemedicine Manager, Corporate Department Telemedicine Manager (all seen in person), and the Clinical Director, Women's Services who was contacted by phone. The researcher was also given a number of published and unpublished reports related to the project and the Centre, including the project evaluation report (CORU, 2000), information pack about the Deptford Centre and the strategy document from Guy's & St Thomas' Hospital Trust (1997).

EmpowerNet - Web-based development in the South London and Maudsley NHS Trust (SLaM)

The researcher interviewed two key people involved this SLaM's initiative: the Borough Director for Lewisham and the Service Development Manager. EmpowerNet (a web site) aims to inform people with mental health problems about services in South East London and to provide employment resources for them and their potential employers. It was designed and developed by users (mental health patients) under SLaM's auspices, and it is honed to address the interest of the local service users. It is separate from the Trust's formal web site, because it was felt that some users might distrust or not relate to information found on official sites.

Interestingly and in common with 'bottom up' model of telehealth, the development of the web site, including training of users in web design was paid by some 'slippage' money from joint finance of the Local Authority and the Trust. The amount was very small

(£5000) but it helped to “get the project off the ground”. As the Borough Director for Lewisham at SLaM pointed out:

It [web site] is very modest. It is in fact born out of luck [having some spare funding] and the interest of people locally and with very little time on anyone part available. But I think in the future it will be a very important part of what we do.

The site is still evolving although it has already been made available to service users and the wider population. According to our interviewees interactive features were planned allowing the users, for example, to include comments about different articles and post messages to the discussion board. However, these features have not been implemented so far and the board was removed due to problems with defamatory messages⁴⁸.

Seahorse

Lambeth, Southwark & Lewisham Health Authority (LSLHA) and, at a later stage, Lewisham Local Authority (LA) were partners in Seahorse project, developed under the European Union’s Telematics Applications Programme (within the Fourth Framework Programme). The project’s name - Seahorse stands for Support and Empowerment for AIDS and HIV: the On-Line Research and Self-help Exchange. Seahorse I (1995-1996) was a feasibility study exploring the potential of telematics for supporting people with HIV/AIDS and facilitating collaboration between carers. Seahorse II (1998-2000) built on the findings of Seahorse I in implementing a web-based system.

There are a number of partners involved in the project from the UK, Spain, Greece, Romania and Italy. Lewisham LA joined Seahorse II in 1998, taking over from LSLHA. (LSLHA was only involved in Seahorse I.) The European Section of Lewisham LA identified the project as a good source of funding and applied to take part in it. The Section manages the project for Lewisham, while the HIV Unit, a group of people in social services promoting HIV awareness, is responsible for operations side of it.

Other UK participating organisations are: the Tavistock Institute (the project co-ordinator), London Lighthouse (at the time a residential and support centre for people affected by HIV and AIDS, presently a drop-in centre), and the Immune Development Trust (IDT) a charitable non-governmental organisation based in London.

⁴⁸ The web site can be found on <http://www.empowernet.org.uk>. Last accessed on 17/10/01.

The researcher interviewed the project organiser from the Tavistock Institute. Subsequently she was invited to attend a two-day partners meeting on 28th and 29th of January 1999. During the meeting she listened to a number of presentations, was able to test the demonstration software and informally talk to representatives of different organisations (from the UK and abroad). During the course of this research she obtained a number of reports produced by the project (Seahorse I and II). Later on, she also interviewed the Associate Director, Information Systems, LSLHA, one of the managers from the London Lighthouse, and the HIV Training Officer from Lewisham LA.

Seahorse I research activities included identification of needs and requirements of different user groups, mapping those needs onto existing telehealth applications, examining the implications of number of related issues, such as confidentiality, access to data, empowerment of users, changing patterns of healthcare delivery (Cullen, 1997). AIDS/HIV sufferers need a number of different services and vast amount of information, e.g. on how to understand and manage the illness and on the availability of services. This information is not always available, timely and localised. Telehealth is seen as having potential to address these problems by providing round the clock access to information and support services that can be delivered on demand and in confidence (Cullen, 1996).

In each country (or even a region of a country) AIDS is uniquely socially and culturally constructed. Thus, the services delivered are being customised to needs and circumstances of each participating country and locality. In Britain, Seahorse's goal is to provide information and means of communication for HIV/AIDS sufferers and their carers, be it family, friends or institutions, e.g. charities. In Romania, for example, the aim is to provide support for health professionals caring for children with AIDS rather than to deliver the services directly to sufferers. Despite these differences, Seahorse II project delivered for all locales web sites with a huge (and structured) number of links to sources of information on HIV and AIDS. Users who choose to log-on to the service can take on a more active role than just as readers of information. They can comment on those sources, rate sites, add new information and communicate via discussion groups (open to everyone or closed, i.e. restricted to subscribers). Each site lists the core data (links) and

some localised information available only from that site (but all sites can be browsed by anyone).

Whereas other sites offered access in closed environments, e.g. in centres (like Lighthouse) or to academics, Lewisham LA took another approach, providing Seahorse system to people living with HIV at home. In Lewisham there are about 30 service users, of whom 12 were given Internet-ready computers by the LA. Others either had their equipment upgraded or just needed a login, having already a home access to the Internet.

Healthcare Intranet - Total Purchasing Pilot (TPP)

The Healthcare Intranet project, or rather as it is called Total Purchasing Pilot (TPP), was initiated in 1998 by LSLHA. Essentially its aim was to provide a secure infrastructure (an Intranet) between the North Lambeth Primary Care Group (PCG) and a number of organisations, including the Health Authority and the Trusts. The LSLHA web site offers data on different agencies within the authority boundaries and beyond, general information, including health and the NHS related news, and search facilities, e.g. of medical journals. Email is also available. The Intranet may be used for many tasks, including exchange of patient-based information and clinical governance. St Thomas' hospital is currently piloting an electronic referral system between themselves and one of the surgeries. A number of computers (one per practice) connected to the NHS Intranet and the Internet via a PSTN line (i.e. a regular telephone exchange line) were installed in participating surgeries. The participating practices differ in size, ranging from single-handed (one GP) to health centres, which may combine many practices and a large number of doctors, nurses and other support staff. The level of IT utilisation in the practices and staff IT skills differ, although as a part of a training programme, at least two people from each practice should have received training on how to use Web browser and email.

It is perceived that the Intranet offers a great opportunity for facilitating co-operation within the PCG and with external agencies, as well as encouraging practice of evidence-based medicine. Thus it is hoped that the deployment of the Intranet may eventually lead to a better care for patients.

Summary of the first reading of the projects

The five telehealth projects each illustrate how different technologies and professional, institutional and strategic motivations have come to be realised. The first reading of these projects focuses on their aims and the way ICTs have been employed to achieve those aims.

All the projects considered here have aims that go beyond purely clinical or technical aspirations. They look towards improving the quality of care, making it more ‘seamless’ by bringing down barriers between patients and secondary and primary care, but also enabling better co-operation between different professionals and organisations. They reflect to some extent the idea of a holistic approach to health, that takes into account implications of social and personal circumstances on one’s health (e.g. the stress and stigma, as well as family and financial consequences of going to a hospital or the need for peer support and the feeling of being in charge of one’s health and health care). They also explicitly or implicitly address social exclusion and patient empowerment.

Thus, the initial reading indicates that the projects reach out beyond technological rationality and the scientific focus on the body. They also seem to be driven by social aims, rather than managerialist concerns of cost-efficiency and cost-effectiveness. Telehealth is employed to serve the project’s goals rather than to set their agenda.

The subsequent readings critically examine those aims and the way they were implemented and evaluated.

7.2.2 Alternative readings: Analysing the projects through their evaluation practices

So far, this chapter has focused on aims and objectives of the telehealth projects, as they were presented in the documents and interpreted by different stakeholders. In this section we learn more about the projects by studying how they were evaluated. We are particularly interested to find out if all stakeholders were represented in the evaluation process; what views or issues have become dominant, and to what extent the content of evaluation reflected emancipatory ideas.

Telepsychiatry

The telepsychiatry pilot was evaluated in two ways: firstly, comparing diagnosis of face-to-face and IATV mediated communications. This was only done in case of new referrals (only five out of 24 IATV patients). The patients were seen via IATV and then face-to-face. The consultant making face-to-face diagnosis was not aware of the outcome of IATV consultation. Secondly, the patients were asked to complete a questionnaire immediately after the IATV consultation. The questionnaire, produced by Guy's, and completed for 20 consultations, included five simple questions relating to the outcome and quality of the communication processes during the meetings. Questions asked were: "Did you achieve your aims? Could you see all you needed to see? Could you hear all you needed to hear? Would you like to meet this way again? How close did you feel to the people you were talking to?"

Due to the limited scope of the evaluation it is difficult to discuss it in terms of concordism and antagonism. The evaluation was somewhat limited, concentrating on assessing patients' satisfaction and communication modes. The evaluation did not address organisational issues, nor did it ask really fundamental questions – is the technology really needed, can other alternative services be provided (e.g. outreach, face-to-face clinics), does it improve the process of consultations and more generally of psychiatric care? It should be noted that a more encompassing evaluation was planned at the time.

Initial findings suggest that patients are satisfied with the service received. Only one patient, after having two IATV sessions, refused to participate in more, asking for face-to-face consultations. On five occasions patients did not attend prearranged appointments but this does not appear to be related to the IATV experience (McLaren, et al., 1999). The psychiatrist does not believe that teleconsultations impair his ability to make correct diagnosis or maintain adequate working alliance with patients (Ghosh, et al., 1997; Manchanda and McLaren, 1998; McLaren and Ball, 1997; McLaren, et al., 1996). Nevertheless, we cannot forget that the project was initiated by a small number of enthusiasts (consultants and GPs), and other staff might have different attitudes. For example Montani, et al. (1997) conclude that in the telepsychiatry trial most patients (11 out of 15) expressed a preference for the face-to-face consultation. It seems that

establishing rapport was more difficult in mediated consultations, and patients appeared to be more difficult to engage. Despite this the video-consultations were judged to be acceptable by the patients and the psychologists. Also, the authors suggest that as the users become more familiar with the medium, performance and satisfaction levels may increase.

It is acknowledged by McLaren and Ball (1997) that IATV changes the nature of communication. This means that even the clearest of pictures will not reproduce face-to-face interaction. Nevertheless, this does not mean that the interaction must necessarily be of a lesser quality. It is just that in mediated communication different factors come to play (e.g. facial expressions become even more important as the camera focuses on face, interviews are often taped and can be viewed later on, etc).

During the interview, the psychiatrist involved pointed out problems he struggles with, including the difficulties of doing an evaluation in an area of highly unstable technologies, measuring effectiveness of mediated communication and addressing ethical issues, e.g. is mediated communication appropriate and adequate. He suggested that teleconsultations require different approach and new skills, and evaluation must address those issues. Thus he sees both qualitative approaches and measuring and monitoring clinical outcomes as important aspects of the process of continuous evaluation. Of course, there is no easy way of proving that the patients got better because of the service, as there may be a number of reasons. Similarly, assessing cost-effectiveness is difficult. Firstly, should you even try to put a value on mental health? How do you do it? Sometimes improving health means that service users become more active and seek more services. It may not necessary be cheaper for the society. These difficulties are recognised by other professionals in the Trust. The Corporate Development Manager elaborated on problems of assessing costs and cost savings of teleconsultations:

I think it is very hard to define the cost aspect. You can do it in very crude terms, of how much time might be saved or lost if you have a GP involved in telemedicine consultations, you can add up travelling costs. What is really difficult is to define a long-term effect. Improving a GP or primary care nurse's ability to deal with mental health patients within their own practice is very difficult to cost and judge, and how that might influence patients' health, because you are never going to see the downside of that. If the person doesn't have as many acute episodes in a year you might not know that because it just hasn't happened. I think it can be difficult to do simple cost analysis of how quality has improved.

Considering all those problems, why evaluate? The reasons given by the psychiatrist were as follows: firstly, to see how mediated and non-mediated consultations differ for different problems, to learn more about the nature of communication and perhaps through this - the illness. (Again the research agenda comes through.) Secondly, to explore distinctive characteristics of technology and how it changes the process of consultations. Thirdly, to be better able to allocate resources, particularly when alternative modes of communication exist (this is specially the case in urban settings). Finally, there are political reasons for evaluation, including the need to reassure sceptical colleagues, insurers and legal people, and to accrue evidence supporting the service. RCT is seen as a scientific method as a 'stamp of approval' in medical circles. Nevertheless, according to the psychiatrist RCT can be considered at best as a building block.

Overall, these concerns indicate that evaluation is seen as an important activity that has to assess more than a narrowly understood patient satisfaction. What is more, they suggest an interest in the relationship between the practice of psychiatry and new technology (communication processes mediated by technology) rather than in the technology itself. We could also say that the psychiatrist engages in a 'dialectical' relationship with the technology. But this dialog includes other stakeholders (particularly patients) only in a very limited way.

Deptford Market Women and Children's Centre foetal scanning link

The evaluation of the Centre and foetal scanning had a much greater scope. Telehealth was seen as a part of larger changes to the healthcare provision and organisation, and the evaluation reflected this encompassing view. The decision was made to evaluate the service (primarily the telehealth part of it but also the Centre itself) independently, by the Clinical Operational Research Unit (CORU) from University College London, (However, the evaluation was sponsored by the Department of Health, Research Development Division). The evaluation was longitudinal, lasting over one year. The Trust and Centre staff were actively involved in the evaluation. CORU researchers conducted interviews and observations on the premises, and used different sources of data to get an overall picture of number of patients attending the Centre, changes to referral patterns, changes to the Guy's and St Thomas' admitting figures, etc. The report describes both the

process and the results of evaluation. Although assessing the telemedicine part of the service was at the core of the evaluation, the report acknowledges that:

Full evaluation should be concerned with broader issues than those purely dealing with the integrity and effectiveness of the new technology being used. (CORU, 2000 p 9)

It was important to recognise that the Deptford Centre was being evaluated on the basis of a service supported by technology, rather than the technology itself being the main factor. (CORU, 2000 p 43)

Early results confirm that the Centre is popular with the local population and the staff. Yet, our interviews revealed that the telemedicine link had not been used in the first year of operation and subsequently the telemedicine service, but not the clinic itself, was discontinued. The evaluation report (CORU, 2000 p 4) identifies the technical set-up as the principal problem, although it also lists other obstacles, primarily “changes in work processes that would be required, and most markedly the relative responsibilities and skills of the different professional groups involved ...”. The nurse we interviewed gave a slightly different explanations for the non-use of the tele-link. She did mention serious problems with technology aggravated by the lack of support from the suppliers, but beyond this, she complained about the lack of training on how to use the equipment and perform the procedure, leading to the fear of miss-use and the provision of an unsatisfactory service. Then she revealed that rarely there is a need for an immediate referral to a doctor, and anyway if she was given the appropriate training then she would have been able to do the diagnosis herself. Thus, it appears, that even if the technology had worked well, the system would not have been used anyway.

The report considers how the introduction of the service could affect a range of features associated with the delivery of healthcare, and focuses on accessibility, timeliness, and modes of service and health service infrastructure. The implications of the tele-link could not be analysed because the link was not used. The report instead discusses likely reasons for this and more generally barriers to the use of telemedicine. It also conveys the CORU researchers' view on evaluation of telemedicine:

There is yet no suggestion of a widely accepted methodology, which could be used to gain an early insight into the true value and potential of these tele-applications. The IHMS Report indicates that Randomised Control Trials would be a useful next step, a view supported by some observers e.g. Wyatt. However, CORU does not consider that RCT's as a method will necessarily produce more informative results. Rapid changes in technology, impact of business re-engineering, and citizen and consumer awareness are likely to create demand for new more effective services which can be implemented in short scales. (CORU, 2000 p 32)

The report promotes multifactorial assessment of telehealth (or telemedicine, the term it uses as an umbrella for different types of technologies and services), that takes into account many of its facets and its multidimensional consequences. This assessment is to take a form of cost-consequence analyses of those. What is interesting is that the cost-consequences are not seen in simple terms, instead the report states that:

Within such a framework there should be encouragement to consider the use of methods which elicit values that the public/users attach to different consequences of programmes. (p 48)

This statement acknowledges that all proposals are value laden, and that there is no one 'objective' scientific and technological rationality that can be used as an absolute guide. It also suggests the importance of 'ends' not just means. Thus, evaluation cannot be a simple exercise, driven by technological rationality.

Although social exclusion or empowerment were not explicitly mentioned, the assessment criteria indicate that social exclusion was being considered, e.g. in terms of accessibility of service, and ability to reach people previously excluded from the service (even if the exclusion was partly self-imposed). Overall, one of the major aspects of the evaluation was to assess if the Centre delivers a better service for the local population. Thus, we can see that this evaluation reflects concordist aspirations.

Although the evaluation had an economical dimension, i.e. it compared the costs of treating patients in the hospital and in the Centre to "ensure that it [the new service] provides good value for money" (CORU, 2000 p 6), certainly, no narrow, purely cost driven approach was taken, but rather one that weights different aspects of healthcare provision, following utilitarian ethical tradition. (For discussion of different approaches based on different ethical traditions see Cornford and Klecun-Dabrowska, (2001).)

Yet, these considerations of cost-effectiveness might have had other, less concordist foundations. In an ideal world (as the Telemedicine Manager in St Thomas' hospital pointed out) healthcare organisations should be driven by improved patient care. Thus if evaluation of a service points to improved care, they should pursue it. However, there are other pressures, including economic and political. Thus evaluation tends to be seen in terms of establishing who benefits and who pays. This, of course, is very difficult to

answer in case of telehealth services where effects may be long term and benefits are often more likely at societal than organisational level. Nevertheless, the evaluation of the Deptford Centre considered changes to the hospital's catchment area and thus to its influence and potential income. This suggests that the project sponsors might have been motivated by other interests – not only purely concordist.

The Healthcare Intranet (TPP)

The Associate Director of LSLHA commissioned the author of this thesis to undertake the evaluation of the deployment of the Intranet in primary care (North Lambeth PCG). Specific goals included ascertaining what applications are used, for what purpose, are they perceived as beneficial to the practice, and if so, in what way. Views on current and future information needs were also solicited.

Having in mind the aim and goals of the evaluation, as well as the interactive nature of the system, the choice of what exactly to evaluate, i.e. what questions to ask during interviews was informed by literature on the subject. The researcher tried, at least to some extent, to accommodate six major categories: system quality, information quality, use, user satisfaction, individual impact, and organisational impact, that are included in DeLone and McLean's (1992) taxonomy.

The evaluation of Total Purchasing Pilot (the PCG Intranet) primarily focused on assessing user satisfaction and usage patterns, as well as giving indication of future requirements in terms of services provided over the Intranet. Nevertheless, the researcher sought to extend the scope of evaluation to assess organisational dimension (in terms of individual stakeholder's interests and organisations they represented) and at least to highlight some societal concerns. To this end a framework designed by Cornford, Doukidis and Forster (1994) was adopted for information gathering and analysing. The framework not only incorporates system, individual and organisational characteristics but also delivers a robust template for evaluating information systems, particularly in health care settings. Not all of the matrix items, incorporated in the framework, were investigated to the same degree. Specifically, organisational context was not given much attention and the 'Effect in the world' item was not considered at all.

Figure 6 Evaluation framework

	System Functions	Human Perspectives	Organizational Context
Structure	Technical detail	Work conditions and implied requirements	Sustainability, opportunity costs, management needs, skill requirements
Process	Information processing; correct and valid	Human participation in tasks; social interaction	Altered delivery and practice
Outcome	Relevant, applicable, reliable	Quality of service, and outcomes	Effect in the world

Source: (Cornford, et al. 1994 p 499)

The evaluation was conducted only from the perspective of North Lambeth PCG. A number of stakeholders within the PCG were identified, including practice managers, computer managers, varied administrative or support staff (data inputters, receptionists, secretaries), doctors, nurses and other professionals. However due to the limited scope of the evaluation it was not possible to consult representatives of all these groups. Overall one primary care manager, six practice managers or assistant practice managers, one data inputter and one administrative assistant were interviewed (one on the phone), as well as three General Practitioners (one in person, one on the phone and one completed a short questionnaire). In total nine practices took part in the evaluation out of approximately 50 participating in the pilot. In addition two representatives from St Thomas' hospital who are piloting a referral system between the hospital and one of the practices were invited to comment. A representative from the local medical school's Primary Care Skills Centre who conducted training sessions for the pilot was asked for comments on participants' IT skills and their general attitudes towards the Intranet.

The majority of the respondents had a positive attitude towards the system. All, except one, considered it beneficial, although usually email was regarded as more useful than the Intranet (web-based information). All agreed that as more applications will be available (particularly a referral system and links to laboratories), the Intranet will become very useful. The majority of respondents stressed the need for the Intranet to be integrated with clinical systems. Most (but not all) said that they had at least satisfactory understanding of the system's capabilities. Most criticism of the system came from people who are knowledgeable about IT and who use the system, and thus are able to comment on its shortcomings. Overall, the results of evaluation indicate that the Intranet potentially fulfils the goal of supporting co-operation within primary care and facilitating communication between different agencies. Greater benefits are expected to arise when new facilities on the Intranet are present to support re-designed work practices. (See

(Dabrowska, 1999) for more detailed discussion of results, and (Klecun-Dabrowska and Cornford, 2001) for discussion of evaluation approaches and frameworks adopted in the study.)

Although the researcher had sought to increase the scope of the assessment, the evaluation was perceived by the contractor as an opportunistic exercise, to be done 'quickly and cheaply' in order to present the results at a conference. The evaluation itself was intended as a concordist exercise, i.e. as a learning process (formative) rather than summative evaluation apportioning blame for perceived failures or shortcomings. The choice of participants may have produced biased responses. A more encompassing evaluation, securing a greater number of GPs, may yield more insights.

Seahorse

Within this project formal evaluation was to be conducted by all localities involved, based on survey of users (people living with the virus) and interviews and focus groups with health professionals (the numbers of health professionals are likely to be too small to yield valid survey results). The survey for users consists of two questionnaires: pre-test and post-test. In the first questionnaire users are asked to answer questions regarding their personal details, their knowledge of HIV/AIDS issues, what information they consider important, their usage of the Internet and their health. The second questionnaire repeats those questions, but also enquires about their usage patterns of Seahorse (how often, for how long, what facilities they have used) and levels of satisfaction with the system (information reliability, completeness and relevance, usefulness of additional features and the system's design and technical reliability). This evaluation is being currently undertaken. The final evaluation report is to be submitted by the Tavistock Institute to the European Commission.

Seahorse evaluation so far has largely been based on user satisfaction. The formal questionnaires do not ask explicitly about empowerment or social exclusion; it would have been very difficult to do so. However even simpler questions regarding changes to user status (e.g. feeling depressed or isolated) were not posed. (Such questions have been asked in evaluation of Computer-Link project in Cleveland, USA (Brennan, 1995; Brennan and Ripich, 1994a).) Some additional information was collected through informal contacts with the service users. Issues of empowerment, social exclusion and

the effect the project might have had on changing relations between doctors, patients or NHS organisations and NGOs may be addressed in the final report (not yet available). It would be very interesting to see how (if at all) these issues are going to be assessed, and if such an assessment would be based on the report writers views, or findings from interviews with health professionals and patients.

Although the formal evaluation is still on-going, the use of the Seahorse site has been monitored continuously. On this basis, it is possible to give an early indication about usage patterns. The following citation refers to Lewisham site but similar behaviour was noted in other London sites (IDT and Lighthouse):

Unfortunately for us most of them have chosen to use it just as read-only. People don't log-in as much as we would like them to. It doesn't mean that they are not using the service. They are just reading it rather than login in. They don't have to log-in unless they want to make a suggestion or a comment or email or join discussion group. The information they would see is identical, except that they have the opportunity to review, award stars, suggest new sides or point out inaccuracies. They tend not to use that. (Chris Long)

Interestingly, Chris Long who works for the HIV Unit and has close links with the service users, perceives evaluation as a continuous and often informal process, that incorporates reviews of the web site's content, as well face to face, over the telephone and via email meetings with the users invited to give feed back, dealing with the users and their problems on daily basis, and providing training sessions. As Chris Long concluded:

There are many ways of evaluating. My background is in the community work. I always work on the assumption that the expert is on the other side of the counter. So the service users know what they want and we have means to make it happen.

Such an approach to evaluation indicates a more dialectical relationship with the technology, and one that – importantly – includes the users.

Summary of the second reading

In Chapter Two we have argued that an evaluation focused on narrowly defined issues of feasibility, safety and clinical outcomes is not sufficient. We suggested that the evaluation should incorporate organisational and societal dimension and perhaps to include (or synthesise) different ethical traditions (medical, information systems and information society).

From the above discussion we see, that the projects studied certainly were not evaluated in purely medical terms. This is partly due to the fact that projects like Seahorse can be better described as telehealth rather than telemedicine initiatives. For such projects conducting Random Controlled Trials (RCTs) is often not feasible. Even for other projects - like the telepsychiatry - RCTs are difficult to conduct and are seldom sufficient (as the psychiatrist acknowledged). Anyhow, even the telepsychiatry and the foetal tele-link at the Deptford Centre (more traditional telemedicine projects) were also not perceived in purely medical terms but seen within organisational, inter-organisational and societal context. These wider concerns are to some extent reflected in their evaluation practices. Organisational aspects were evaluated in the Deptford and the Intranet (ITP) projects. Although these were not present in the evaluation of the telepsychiatry project (at the time) they were clearly taken into consideration (e.g. in terms of how this service can support co-operation between primary and secondary care). Thus in these evaluations we see some convergence between medical and IS traditions.

The fact that these projects were evaluated at all and that the assessments went beyond a technological focus or narrowly understood organisational interests might be seen in itself as a modest critical activity. (Only EmpowerNet was not formally evaluated, just informally assessed.) What we mean is that evaluation may be considered as an essentially normative exercise, as a search for answers about 'goodness' and 'badness' of technologies or services. This also suggests that technological rationality is not all prevailing. This seems to be supported by comments made by people involved in the projects. Even those clearly fascinated by new technologies and their potential are still questioning their value. For example, referring to the telepsychiatry project at the Grove Medical Centre, the psychiatrist involved stated:

We are not at all convinced that we are adding a value. We like it, the patients like it. But it is also quite expensive in terms of resources, in terms of my time and GP's time. And we are not at all convinced that the benefits, if you like, are demonstrable and definable.

But although the projects themselves are seen in societal terms their evaluations do not explore that perspective adequately, and empowerment and social exclusion notions are only to a limited extent addressed, mainly in terms of access to services.

Furthermore, the user role in evaluation was also, to a lesser or greater extent, limited. In the telepsychiatry, Deptford Centre, Seahorse and TPP projects users took part in evaluation, mainly through answering questionnaires or taking part in interviews. In TPP project the researcher asked open-ended questions and encouraged users to comment. In Lewisham site of Seahorse users were encouraged to give suggestions regarding the system. Nevertheless, it seems that the users did not set the evaluation agenda. They did not design the questionnaires or choose evaluation procedures. (Although in Lewisham site of Seahorse, one of the users volunteered to conduct an assessment of the system regarding its suitability for disabled people.)

Despite claims to objectivity (which sincerity we do not dispute), the people involved in the projects have vested interests in telehealth, in terms of research interests, furthering their careers, prestige, etc. For example, the telepsychiatry project is as much a research exercise, as an on-going service. Foucault suggests that truth claims in science have political character and power/knowledge relations are always present in the scientific discourse of a particular discipline. Furthermore, as many authors in IS discipline point out evaluation is a complex, political and often contested process (Hirschheim and Smithson, 1987; Hirschheim and Smithson, 1988; Smithson and Hirschheim, 1998; Wilson and Howcroft, 2000). Thus, as critical researchers we must consider if people's worldviews (and to some extent findings) were not conditioned by those interests. Similarly, the author of this thesis must ask herself if she, by virtue of researching telehealth, has not become positively biased towards it.

7.2.3 Social exclusion, empowerment and telehealth – the third reading

The following section critically analysis the project's aspirations relating to social exclusion and empowerment, in terms of the projects' aims and their enactment.

Social exclusion and telehealth

Although social exclusion tends to be explored in terms of economic and social activities (Burchardt, et al., 1999) we have shown in Chapter Four that there is another, inter-related dimension to social exclusion – health and healthcare. It is with this encompassing meaning of social exclusion in mind that the analyses of the projects are

conducted. At first sight this may seem to offer a very specific and partial view of telehealth activities. And yet, reading through the literature in this field, we see it (or something like it) as a central and sustained theme. From the earliest days of telemedicine in rural communities (radio doctors etc), communication technologies have been seen as providing an opportunity to bring into processes of health or medical care those who were (geographically) beyond it (spatial exclusion). The studies we have outlined in this chapter are not based on bridging great geographical distances, nor are they essentially or exclusively concerned with medical processes, and yet they can be seen as continuing this tradition. The distances that they transform, and the inclusion that they seek to serve, are rather social and organisational.

Thus, although at a first glance the exclusion of Deptford residents might be seen in geographical terms, i.e. as a distance to the nearest hospital, it is the social circumstances of the community which make this distance significant. Thus it is the poverty of the community prohibiting people from using taxis, the train station thought of as unsafe, the difficulties of travelling by public transport with young children, and in some cases the attitudes of people towards attending hospital appointments, that the Deptford Centre seeks to address.

We have noted in Chapter Four that social exclusion is a dynamic process, that affects people in different ways, in various dimension and over time (Burchardt, et al., 1999; Hills, 1997). The social exclusion that Seahorse and SLaM's EmpowerNet project hope to remedy is particularly complex. It stems from the illness (be it AIDS or mental health problems) faced by the systems' users, but it is also reflected in the economic status of the users and their social ties (or their lack). Seahorse co-ordinators recognise that users are not static, their circumstances change and so do their needs (seeing exclusion in relative and dynamic rather than absolute and static terms). This understanding suggests that the system must not only be localised, contextualised and directly relevant but also cater for people at different stages of HIV/AIDS. The social context of systems provision is of particular importance, with existing service organisations acting as gatekeepers or facilitators for the telematic services (Cullen, 1997). Seahorse is a good example of a service trying to reach varied types of users (health professionals, social services staff and AIDS/HIV sufferers, who in themselves are a very diversified group).

However, although projects such as Seahorse may seek to focus specifically on socially excluded groups, they may also serve to increase the degree of isolation of their target communities. Providing care and support in homes may encourage people to venture less outside. Different people involved in Seahorse have different views on this. In Lewisham it was considered vital to provide equipment at home, to allow those very ill or very poor to have access to the system without travelling. This raised many complex problems, as users required training, help with delivering and installing the equipment, and on-going support.

So we didn't take an easy route. Nonetheless, it is the lifeline for people trying to get the latest information from home. (Chris Long)

In other sites (like Lighthouse) Internet computers were available at the centre. This is a group versus individual model, and is preferred by the project co-ordinator at the Tavistock Institute:

What we are doing is trying to move away from the notion that there is one-to-one direct, individual user base link. One of the problems with access is that a significant user base for applications like Seahorse are intravenous drug users. They are in some situations homeless, they have no access to equipment, and if we gave them the equipment they might misuse it.

Even, when offering such facilities to groups and building a community of AIDS sufferers may not, in practice, promote their sense of involvement in the wider community. Equally for carers, the solidarity they can develop, or the sense of power they feel in decision making, may actually reinforce their sense of isolation and serve to distance them from other groups.

On the other hand, an argument could be made that for some people the link via a computer is the only available connection to the outside world. Furthermore, using Seahorse would not necessarily mean that people would choose to stay at home. Social exclusion can be interpreted in terms of *feeling* excluded as much as *being* excluded from information, and these projects might alleviate such feelings, and (perhaps in a small way) some of the processes by which people become socially excluded.

Of course, the provision of information alone cannot combat (usually multifaceted) social exclusion, but Milio (1992) points out that the value of health information goes

beyond creating individual awareness to include educating and motivating for action. When it is shared (in two-way exchange), she suggests, it can help to express and test ideas, bind people and communities, and foster an environment conducive to people's well-being.

Social exclusion (and its health dimension) should not be thought of as only concerning patients. Seahorse in the UK centres on the sufferers, their carers and NGOs. Yet, social exclusion, in some ways, touches the healthcare workers as well, and as one of the partners noted, they should be better cared for:

When you look at the delivery systems that we currently have for healthcare and social services and welfare generally, it's probably more realistic and more productive, in my view, to look at delivering this technology and services not directly to the end user but to the people who are at the front line of service delivery. Because the reality is that these people are very often just as excluded and disconnected as the clients they are serving. And if you are looking at seamlessness of care as a concept, it's your field workers who need a better contact. (Associate IT Director, LSLHA)

In the above citation another – organisational – dimension of social exclusion is alluded to. This dimension is at the centre of the Intranet (TPP) initiative. In this project organisational exclusion is manifested through GP practices not connected to the wider NHS, excluded from results of new research and (on-line) training opportunities. The Intranet means that the practice staff has gained access to on-line medical journals, NHS bulletins and secured email system. They can communicate with each other and perhaps be less isolated from other organisations in the NHS.

I think it is going to get more and more [beneficial] as more people start using NHSnet and the Intranet. Need to use it to keep up with what's going on. (Surgery administrative staff)

Poorer practices have also gained access to the wider Internet (not just the Intranet) and the resources it offers (some bigger, richer practices already had it). This may be seen as in some way alleviating social exclusion of health professionals in smaller practices and thus their patients. However, because of under-staffing and limited IT skills small practices may not be able to take full advantage of things on offer (our study of the project seems to indicate this). Thus, only if funding and training is provided, can this project help to eliminate some of the processes of disadvantage faced by smaller practices. Similarly, the claim that the teleconferencing link at the Grove Medical Centre will enable patients from other practices easier access to experts, does not take into

account organisational arrangements and the need to re-negotiate professional roles and responsibilities. This claim reveals a belief driven by technological determinism.

Empowerment and telehealth

The concept of social exclusion is often linked to the notion of empowerment. Socially excluded people may feel disempowered. Empowering people may help them to combat social exclusion. In that sense the provision of home access to Seahorse was seen as empowering:

Because we are offering services at home, we give access to information which otherwise the users wouldn't get if they weren't well enough to get to a library or if they weren't earning enough money to have their own Internet connection. So yes, empowerment was there. (Chris Long)

Chapter Four introduced the notion of different types of empowerment, i.e. professional, liberation, self-help and exchange. This section begins by exploring concepts of empowerment held by the people we have interviewed. Thus, the IHMS consultants offered their interpretation of empowerment:

One of the difficulties is that patients are not homogenous, and all the treatments we have got tend to treat people as a homogenous mass, and I think the real empowerment would be if it would be possible to actually deal with an individual patient once more, further away from the centre. But then you have to probably take into account not only health problems but social problems as well.

This description captures new trends in healthcare discussed in Chapter Two, including the notions of a holistic approach to the person, focus on his/her well-being not just treatment, and local care. Telehealth might potentially support these developments by facilitating local delivery of care (e.g. via teleconsultations, second opinion services and training opportunities for doctors and nurses, etc.). We see the telepsychiatry project and the Women and Children's Centre in Deptford as examples of such initiatives. (But we note the problems they have encountered.)

Another aspect of empowerment – the relationship between the ill and the health professionals and the wider community is explored by the Borough Director for Lewisham in SLaM:

Empowerment is fundamentally about the relationship that we have. I mean it is all about putting yourself in a position of being a service user. [...] They would want to feel like it is a partnership. And yet it has taken so long for people to understand that people with long term if you like [mental]

disabilities have exactly the same aspirations that people with physical disabilities or learning problems have. Just because the nature of disabilities are severe, their aspirations are not different, and nor should our responsibilities be different. It seems to me obvious that that's fundamentally what it is about. Information is a key part of it, because as everyone is acknowledging information is power. [...] It is really important being honest with people about what information we have or don't have about the illness, effectiveness of treatment and about side effects. About what we know and don't know. And people [doctors] find that very challenging because everyone always wanted to say that psychiatry is a science. And it isn't.

Her views on empowerment and her understanding of people with mental health problems are built on years of experience in this area, in planning services and forging close links with the service users. She sees information at the centre of empowerment, as a vital stepping stone to opening a dialog between patients and health workers. She gave an example of a simple proposal to print information about the drug prescribed, e.g. its average dosage and side effects, on the reverse side of the prescription itself. This would at least give the patient a chance to question the suitability of the drug and the dosage prescribed. She accepts that for the patient to feel confident to complain there needs to be a qualitative change in the doctor patient relationship. Thus she does not see information or telehealth as end in itself or in terms of reified decontextualisation, but in the context of building relationships.

The importance of information is also highlighted by the Corporate Development Manager at Lewisham and Guy's Mental Health Trust (now part of SLaM):

When people become more and more informed about their health care they will want more and more input into choices and decision making and how their care is delivered. I think that will lead to a change in the professional/patient relationship and the way care is delivered. But I don't think we are going to see it soon, perhaps another ten years, twenty, fifty maybe.

The importance of information in the overall model of empowerment is also acknowledged by Seahorse report 1.1. (Cullen, 1996 p 23):

The Seahorse concept aims to empower people with HIV/AIDS (and their carers) in the management of their own health care. The underlying model of care has three main elements:

- providing people with HIV/AIDS with *convenient* access to information to enable them to make well-informed health care decision
- enabling people with HIV/AIDS to engage with professionals with the status of primary actors as opposed to passive recipients
- valuing and sharing experience-based knowledge and understanding through mutual helping systems (self-help, mutual aid).

In this citation we also see the presumption that information is a stepping stone that may help people to take responsibility for their health and change the balance of power in the

doctor/patient relationship. This is the patient-oriented or rather citizen-oriented model of healthcare telematics introduced in Chapter One. The report proclaims: "Empowerment is a central focus of SEAHORSE" (p 35).

Critical theorists, including Horkheimer, Adorno, Marcuse and Habermas, tell us that the process of emancipation is inseparable from the struggle for self-emancipation (Held, 1980). This holds true for empowerment. Citizens/patients cannot be given empowerment or be empowered; they must empower themselves. Thus an information system cannot empower people. It can only provide conditions sympathetic to empowerment but these must be taken advantage of by the people. Seahorse is an interesting example, where at least in one locality – Lewisham, people did not take advantage of the full potential of the system.

They don't have to log-in unless they want to make a suggestion or a comment or email or join a discussion group. The information they would see is identical, except that they have the opportunity to review, award stars, suggest new sides or point out inaccuracies. They tend not to use that. Our service users tend to see it as a service they want to use rather than a project, or a club or something they are joining. (Chris Long)

However, he also added that users who were on-line before the project tended to be more active and use the interactive features more. This suggests that in the future such facilities might be used to a greater extent. This, of course, does not only depend on the level of IT skills but, amongst others, on existing social ties and the sense of purpose (e.g. a will to change existing service, etc).

It seems, that in Lewisham part of Seahorse only the professional model of empowerment was enacted by providing relevant information to service users (and thus enabling them to take better control of their lives, to be able to exercise existing rights). This may also, to some extent, be taken as a necessary stepping stone towards opportunities for fighting for the extension of those rights (a 'weak' liberation model).

On the other hand, EmpowerNet has been more successful at encouraging different types of empowerment. Some users used it not only to seek information but to keep in touch with health professionals and post information on the bulletin board (moving towards self-help and exchange models of empowerment, where perhaps the health professionals could gain more insights into mental problems people suffer and how they cope with them). This service, at the time of the interviews, was in its early stages, and

thus it is difficult to say if, indeed, it helped users in any way in their quest towards empowerment.

Both projects found it problematic to define boundaries of user autonomy (empowerment). In Seahorse, discussions during meetings revealed disagreements on what constitutes legitimate information and how much control over site content should the users have. Should Seahorse provide structured, refereed information monitored by the Central Clearing House, or should the users take charge? Some partners suggested that messages posted should be monitored to prevent unsuitable information being displayed. This suggestion met with opposition from London user representatives. Similar problems were encountered by SLaM. A bulletin board, initially part of EmpowerNet, had to be withdrawn (perhaps temporarily) due to derogative messages about a doctor posted on many occasions by one of the users. These examples show that in some occasions the 'empowering' aspects of the system maybe withdrawn (suggesting the ownership of the system still lies with providers rather than users).

Empowerment can certainly be an over-used term. The claims of empowerment are often over-stated, while as we have shown in the above examples, the changes are slow and very much context-dependent. 'Individual citizens' in their personalised 'information capsule' (Cullen, 1996 p 83) could become quite lost and unsure of how to make choices and what to choose. Furthermore, some developments can be sold as empowering although their effects are far more ambiguous. As one of our interviewee noted:

That's what worries me about empowerment. What is it we are actually offering people. I think we are actually giving power to choose not to go to a doctor. I'm not certain that's actually good. *NHS Direct* is doing that as well. [...] But they would say 'but the user is in control because the user can press the button'. But they don't want to press button they want help. (Consultant, IHSM)

This view brings us to problems mentioned in the earlier chapters, that is of depersonalisation of medical services, medicalisation of problems and ultimately of disempowerment. There is a danger that the provision of technologies would be somehow equated with empowerment, while in fact having alienating effects, and contributing to the feeling of lose of control.

From the critical theory perspective it is important to note that, with exception of EmpowerNet and perhaps Seahorse, patients had a minimal input into decision making

process with regard to telehealth services, although in all projects they were acknowledged as stakeholders (at least theoretically if not actively).

Even in the case of Seahorse, although one of the reports (Cullen, 1996) states that users are co-architects of the systems, bringing their own knowledge and expertise, in practice they were involved in the design and development process only to a limited degree. In general project partners were considered to be surrogate users although 'real' users were also invited to London meeting (only two AIDS sufferers attended). Representatives of users were asked to suggest what type of information they needed, how they wanted it structured and then to comment on the prototypes. Once the system has been built the users have been able to add to its information base.

In contrast, EmpowerNet was designed and built by the service users. The project is rooted in a long-term work on patient empowerment, and the telehealth service is only a part, and not necessarily a central part, of the Trust's movement towards patient empowerment. This movement towards empowerment of patients started in the early 1990s, partly in response to the changes in the NHS, i.e. emphasis on consumerism and putting patients first, and partly due to pressure from mental healthcare users themselves, who are much more vocal than other patients.

One of the things that arose from the research was the need for good, effective and tailored information available to people (staff and users). Instead of just concentrating on the means of delivering information, the people involved took time to think about cultural issues (e.g. attitudes to mental health problems), relationships between service users and different organisations and the content (what information should be provided, at what times, to whom). From those discussions a working code of practice was developed. Service users were actively involved in this process. In time, the Internet presented itself as a convenient mean of delivering information and opening communication (in addition to paper-based information, and communication via a telephone). It was felt that such service could be feasibly provided, particularly that already some service users were receiving computer training, as a part of developing their vocational skills.

Both the Seahorse and SLaM projects do not see patients as a passive, stable and homogeneous group, but rather as an active and changing gathering of individuals willing to take charge of their health, make decisions about lifestyles and treatments, and organise themselves to influence the services they receive. Using critical theory vocabulary we could say that they do not reify patients and their conditions. What we mean by it here is that mental health patients are seen (at least by the Corporate Development Manager and the Borough Director for Lewisham) as autonomous people who may – at times – succumb to mental illness, which at times can be very severe and disabling. Nevertheless, the patients are not defined by their illness and they retain their identity (as persons) and the right to self-determination.

Overall, however, our analysis indicates that the claims regarding empowering potentials of the projects are over-stated, and the potentials of technology employed to such aims are exaggerated. (The interactive facilities were withdrawn at EmpowerNet and under-utilised at Seahorse site. Current EmpowerNet site has a very official feel and does not appear to include users' accounts, e.g. their views on the services available or ways of coping with illness, etc.)

So far the projects' claims towards empowerment have been discussed from the point of view of patients/citizens. If telehealth systems, like Seahorse or EmpowerNet would help to make the position of patients stronger (as information can become a tool in negotiations with professionals) professionals' position may be challenged. (This development must be seen within wider changes in the society, particularly postmodernist trends towards challenging authority of any professionals.) As IHMS consultant suggested: "Doctors will loose. [...] There are major winners – patients".

However, the Intranet (TTP), foetal scan at the Deptford Centre and the telepsychiatry project could be interpreted as empowering health professionals. These projects reflect the GP-oriented model of user-empowerment described in Chapter One. In TTP, interest in empowerment, although not explicitly stated, was pursued in terms of empowering primary care professionals (or rather helping them to empower themselves) to have greater 'ownership' of their patients (being able to follow the patient progress by communicating with the secondary care in case of referrals and co-ordinating care pathways, etc), and supporting the practice of evidence-based medicine. However, the

trend towards evidence based-medicine can be seen in concordist terms as an effort to promote better practice or as an antagonist development, introducing control, converting the art of medicine into an autonomous science.

Also, in our study, one practice manager expressed a concern about email having potentially a de-personalising effect on relationships between staff from different practices, if email was to reduce meetings in person and replace all together telephone calls. This would further isolate already isolated surgery staff.

Furthermore, Deptford foetal scan and link may be considered as an example whereby less qualified staff (the nurse) is asked to do a job previously done by a specialist. Our interview revealed that she was worried that she may be providing lesser quality service (if she was to do scans herself). This trend can be perceived as not empowering but burdening doctors or nurses with extra responsibilities, shifting workload from one sector to the other. This concern is also identified in the telehealth literature:

Telemedicine technology has the potential to empower the remote nurse practitioner to conduct a greater variety of tasks under supervision from the advising clinician. [...] This is presented as a burden rather than benefit due to the effects it may have upon the nurse practitioner. There may be increased stress as a result of fear of the unknown consequences and the responsibility of utilizing telemedicine technology, damaged morale due to changes to the local nursing hierarchy, and the possible medicolegal implications of a nurse undertaking procedures at the limits, or outwith the limits, of their professional capabilities. (Maclean, 1996 p 55)

Even those who welcome such new technologies worry about financial and time implications, as in the case of the GP involved in the telepsychiatry project:

It [this service] is shifting some of the workload onto us, which we would have normally referred back to the secondary care. Probably this is one of the barriers to developing telemedicine in the primary care. The way the NHS works, primary care works – we manage patients populations, we don't have a case load [...] you don't get additional payments for having more or longer consultations or even managing serious or difficult problems. On average a patient consults with us 3-4 times a year. And if you have a patient who is seriously ill – it is a liability, an additional burden.

Inevitably, different views and disagreements are part of the projects. For example not all participants in the TPP (Healthcare Intranet) project agreed on how many GP surgeries should take part in the trial, what equipment was needed and where it should have been installed. An even more contentious issue was the separation of TPP system from the clinical system. The role of the Health Authority (HA) in the project was criticised by members of other organisation. They felt that HA's staff were not open to their ideas

and by remaining inflexible, they ultimately obstructed rather than furthered the cause of telehealth. The model proposed by the HA was adopted, because the HA was given funds for the projects and thus was able to exercise its power in relation to other stakeholders.

Similarly, within Seahorse different partners had different views on how the system should have been designed. There were disagreement regarding the nature of system; an uncensored system or one with a clearing house where messages are monitored. Also, not everyone saw the need for the interactive features:

Personally I think it would be better if it was less interactive than it is. I think the interactive aspect places more of a burden on the service users than perhaps it is fair. Perhaps people are just prepared to get information they want rather than having to join in activities, giving suggesting or valuable points. There is no reason why we can't have suggestions or feedback but I don't think we should put so much burden on them. (Chris Long)

We see also that particular developments were open to different interpretations, for example an Interactive User Monitoring Tool (IUMT) was given different meanings by different partners. The tool was developed by one of the partners in Seahorse to support self-monitoring of AIDS sufferers, who can use it as a diary to log how they feel every day, how they react to new drugs and to note medical tests' results and doctors' comments. Based on this data a report can be produced, displaying history of treatments and their effects. Some interventions might be troubling in a short term but beneficial in a long term and this tool is intended to help to highlight long-term effects. However, this facility can only be used on-line. This can be expensive in the UK because of phone bills (local calls are not free unlike in the USA), an important issue for many home-bound, unable to work users. Why is such a tool not available on a CD-ROM? Cost of production could be one factor. But, as one of the partners suggested, there is another explanation. When it is used through the server all data is stored and can be used for research. This is good for researchers and possibly drug companies. In a long term it should be good for AIDS sufferers. But in the immediate terms, it is not good for the individual users. One of the partners saw this as an example of researchers 'using' patients to satisfy their career goals. Yet, the same system has been interpreted in the report as an example of a group, indirect empowerment because it contributes to the collective body of knowledge and might help treating AIDS. This example shows how the same features can be interpreted in different ways by different people, all of whom believe to have the best interests of people with AIDS in mind. It is also interesting to note

that one particular view became dominant – perhaps because it was held by people who might have better communication skills or simply are more vocal and come from organisations, which exercise more power (in terms of being more prestigious, able to secure funds, etc). This example also illustrates that the stakeholders may be sometimes driven by conflicting vested interests. These interests do not necessarily should be seen as bad, but they need to be acknowledged and questioned.

Such misunderstandings, it appears, have been compounded by lack of adequate communication between different Seahorse partners, preventing the construction of shared meanings (at least to some extent). This may be due to a particularly large number of partners from different countries and varied institutions, including academic or research institutions, charitable organisations, social services and computer consultants developing the software. Sometimes they might have been driven by different goals or at least giving impression of having ‘other’ agendas. The European Commission, provided 50% of funding, but in return required what partners saw as an excessive number of deliverables (reports). This perhaps unnecessarily restricted technical options at an early stage and what is more it re-enforced the use of academic/bureaucratic language that one of the partners found particularly obscure and unhelpful.

That meeting I went to, I had been there for 1 ½ hours and I started to look for hidden cameras. I didn’t understand a word. People really were talking another language, not other European language just another language. I found it very difficult. Overall for me it [Seahorse] has proved very worthwhile. But whether we would do it again or do it in the same way I’m not so sure. There maybe ways we would possibly changed things. (Chris Long)

I did fall out with some of the partners because the quality of communication was not that good. It is very difficult in an international project where you relying on email and faxes. There was an expectation that people understood this sort of quality of writing, i.e. Euro speak, that people understood technology, and the issues around HIV. And when you put all these things together you are looking for a very rare animal. And when we did put on the agenda of the meeting the quality of communication nobody supported us. (Chris Long)

It is ironic that a project aiming at empowering people employed a language that ultimately disempowered them (or some of them). Similar charge could be made of number of academic works and, of course, of critical theorists’ writings, which often are highly impenetrable.

Summary of the third reading

The five projects make explicit or implicit claims as to alleviating social exclusion either of healthcare professionals or citizens/patients. Telehealth is seen in terms of crossing not only geographical, but also organisational and social boundaries. It acquires meanings in its community and organisational contexts. Although telehealth (and information) cannot on its own combat (even some aspects) of social exclusion, the projects have shown that technology can support some initiatives that may have impact on alleviating social exclusion. This is particularly evident in initiatives, which bring the delivery of care locally, like the telepsychiatry project and Deptford foetal scanning link, or which aim to provide relevant, localised information for the service users and provide communication link (e.g. Seahorse and EmpowerNet).

However, these goals may be hindered by problems of access and skills. For example, EmpowerNet project does not include the provision of computers in the patients' homes, although access may be gained through day centres. Seahorse and EmpowerNet service users received some computer training (either as a part of the project or through associated initiatives). However, in case of the healthcare Intranet (TPP) the training was inadequate, and thus the process by which particular surgeries may become excluded (from information and some services) has not been fully addressed. Issues of access and computer skills are important as not to further enforce the 'digital divide'. Beyond that we see the need for contextualising technology, seeing it within its wider community context, as well as people's work practices and daily lives.

It is also ironic that the project which is a good example of addressing complex problems of social exclusion, i.e. the Deptford Centre, illustrates that new technologies are not always needed and re-designing work practices or models of care delivery may be equally or more beneficial. Similarly, one could argue that in case of the Grove Medical Centre outreach psychiatry service could be conducted without a teleconferencing link (as the distance for the psychiatrist to travel is not that great). Although in case of the Healthcare Intranet project (TPP) the infrastructure is an important ingredient without which, for example, electronic referrals cannot be processed, however the infrastructure itself cannot bring benefits unless new applications are implemented and used.

Seahorse and EmpowerNet projects make direct claims with regard to empowering service users. These claims are over-stated. Empowerment (like social exclusion) is a complex notion and ultimately the technology can play only a small part in self-

empowerment (or self-emancipation) of the people involved. Nevertheless, the projects have shown that such actions can be supported by telehealth, particularly if such projects form a part of wider organisational changes and societal/group movements.

However, there are concerns that the empowerment agenda will be highjack by agenda of cost effectiveness, and technology-based services will be introduced in order to reduce other services. As one of the interviewee asked: “What are we empowering people to do? Are we empowering them not to use the service?”. Furthermore, over reliance on technology may lead to alienation of citizens/patients, as well as healthcare workers.

Also, the problems encountered during the projects illustrate that even in projects that aim to be democratic and empowering there are groups of people or organisations exercising greater influence than others do (e.g. through the use of language).⁴⁹ Overall, there needs to be a greater active involvement of patients groups who would take ownership of the projects.

7.2.4 The Fourth reading: Transformism versus continuism and concordism versus antagonism

In this reading we interpret the projects using concepts from Miles' topology. Within the depth or 'change' dimension there are two opposite ends – continuism and transformism.

The five projects each aim to some degree be transformative, altering the nature and the way services are delivered, without undermining the main principles behind the NHS, and in some cases re-enforcing them (e.g. a right to equitable healthcare).

The telepsychiatry project aims to transform the way psychiatric consultations are conducted, and in a longer term also to strengthen the co-operation between primary and secondary teams, contributing to the wider changes in the NHS (McLaren, et al., 1999; McLaren, et al., 1996). Similarly, the Intranet (ITP) project could have an impact not only on the primary care but other organisations in the NHS and relationships between

⁴⁹ A much better illustration of this point is delivered by Forester in his description of planning practices (1993).

them. Essentially, the project aims to support (and alter) the way primary care professionals work (e.g. following evidence-based medicine), as well as how primary and secondary care interface (e.g. how referrals are conducted). While in the Deptford Centre “[t]he schema represented an innovative means of changing health service delivery to be facilitated by the use of the new technology of telemedicine” (CORU, 2000 p 6). Seahorse and SLaM’s web-site may initially alter the nature of services in a subtler but ultimately more powerful way, for instance by helping to change the balance of power between doctors and patients and by supporting self-care, thus undermining the paternalistic nature of the NHS. Thus we could claim that these technological systems far from reifying existing social structures and practices instead strive to undermine them.

Nevertheless, in the immediate terms these transformations are somewhat limited due to their narrow scope (either in terms of geographical reach or the service length). This is particularly true of the telepsychiatry project and the Deptford Centre. (Seahorse and EmpowerNet are available on the Web.)

Furthermore, even within the boundaries of these projects, the use of technologies has only partially or not at all become routinised. The telemedicine link in Deptford Centre was not used at all and finally was disconnected. Similarly, the telepsychiatry project may also be discontinued due to financial problems, the issue of reimbursing the GP for his time needs resolving. Furthermore, although users are satisfied with the service, and the consultant involved does not believe that mediated consultations impair his judgement or negatively affect the consultation process, the service still needs to prove its value in terms of cost-effectiveness. Seahorse, too is only planned to continue for a year (the EU funding has ended already).

In these examples telehealth did not, arguably, reach a sustained in-use state (through use it did not become an element of structure). Nevertheless, in each case the technology has not been rejected out of hand. Our interviews indicate that the information links provided by the Seahorse site are thought of as useful. Despite uncertainties about the telepsychiatry link, the consultant involved is expanding the service to other localities where longer distances offer better justification for the service. Similarly, the Trust sponsoring the telemedicine link at the Deptford Centre is not dismissing the idea of employing the same technology in other areas.

In the remainder of this section we explore issues of malleability of technology. We show how the same technologies can have multiple interpretations (and uses) and thus varied consequences for healthcare processes.

In the projects investigated here the technologies are employed in different ways to somewhat different (but not so dissimilar) aims. In the case of the telepsychiatry project we see general teleconferencing equipment put to use to bring the psychiatrist's expertise to patients. Yet, such technology could have been used in a different manner. Thus, teleconsultations could have been (and may be in the future) conducted only between a patient and a consultant without a GP present (as it is the case with face-to-face consultations). This could potentially change the nature of the consultations and their results. Similarly, giving a patient a videotape from the consultation may modify the patient (and consultant's) behaviour in subsequent visits. Also, Seahorse and EmpowerNet illustrate how well established and generic technologies (the Internet) can be used to similar ends but in a subtly different ways.

We believe that these examples support the notion of malleability of IT (Cooper and Woolgar, 1993; Woolgar, 1996). However, we also recognise that the technology, to some degree, does embody designers' pre-conceptions and beliefs. The consequences of such technologies for organisational structure are then to be found in this mix. Our research bears out Orlowski's (2000) argument that technologies alone do not signify organisational structures (are not themselves rules and resources), for example, technology that is implemented but not being used has no impact on working practices. Yet, the embodied characteristics (for example the physical aspects) of technologies do influence their use, even if users choose to re-invent a technology by using it in a different way, as argued by critical theorists (Feenberg, 1991; Feenberg, 1995), Winner (1985) and social constructivists (Bijker, 1997; Bijker, et al., 1987; Bijker and Law, 1992; Hughes, 1986; MacKenzie and Wajcman, 1985; Williams and Edge, 1996). For example, having to use a camera has meant that the psychiatrist involved in the project concentrates on a patients' face rather than the body (camera's position can be changed but it is a cumbersome process). He also suggested that he adapted to that by paying more attention to the tone of voice, or even asking different questions and using language to compensate.

The technologies used in the Seahorse and SLaM projects are perhaps more generic and flexible, but the systems could have been developed to offer different functionality that might have altered usage. Seahorse users were given a highly interactive system because the people involved in the project believed that empowering people means more than providing access to information. Thus a general technology, the Internet (in itself embodying certain values and beliefs but at the same time highly malleable) has been translated in a particular way in projects and has been differently appropriated by people choosing which aspects to use. Because of those variations, the scope and depth of transformations facilitated by these technologies are uncertain. Nevertheless, the malleability of the technology illustrated here, indicates that potentially it can be (re-)constructed towards emancipatory aims.

Concordism versus antagonism

From a critical perspective, we are interested in the nature of the transformations discussed above and the role telehealth may play in them. We have partly addressed this problem in the third reading, while reflecting on the projects in relation to the notions of social exclusion and empowerment. Here, we will draw on our previous observations, relating them to the whole (context of the projects). We explore what type of health service telehealth may support, e.g. does it help to fulfil the ideals of equitable service, empowerment and social inclusion, or does it re-enforce scientific rationality (focus on science, disease and body), or strengthen economic-technological rationality in the health service (focus on cost effectiveness). In our analysis we explicitly refer to the 'control' dimension of the Miles' topology, with its opposite poles of concordism and antagonism.

In our previous readings we concluded that the telehealth projects described have broadly concordist (emancipative) aims. Thus telehealth has been constructed as means of alleviating social exclusion of patients, communities and in some cases healthcare professionals, and supporting (limited) empowerment of patients/citizens and primary care workers. Finally, the role of telehealth has been envisaged in terms of breaking down barriers between different organisations in the NHS and beyond. This analysis would imply that telehealth may lead to (or rather support) the model of health service based on the ideal of universal, free service, where access to healthcare is not constraint by

geographical area or social circumstances. This model also suggests less paternalistic NHS, where patients armed with relevant information are able to negotiate with health workers on more equal terms.

Certainly, relating this reading (part) to its policy context (the whole), we can see that these aims reflect the concordist aspects of health policy documents. Nevertheless, as policy proposals are sometimes ambiguous, so are the projects and their telehealth aspects.

The vision presented above is of an ideal world, while the projects described show that changes are not unambiguous (i.e. empowerment of one group may lead to others feeling less empowered), and there are many implementation problems. Once implemented, technologies appear to be, to lesser or greater extent, problematic and sometimes antagonistic (e.g. being used to in inflammatory ways, as in the case of EmpowerNet bulletin board, or causing the staff anxiety as in the case of telelink in the Deptford Centre).

Again, relating the projects to the whole, we acknowledge the managerialist turn in the NHS, the increasing focus on cost efficiency and effectiveness, and the strive for uniformity and adherence to 'guidelines'. Without totally dismissing this vision (after all when funds are limited considerations of cost effectiveness may be desirable), we warn against employing telehealth as simplistic monitoring tools, e.g. measuring performance of the Trusts (working to superficial targets may not be the best way of delivering good service) or as a way of reducing services and containing costs. Below we consider if the projects described here are likely to support such developments.

So far, the evidence indicates that this is not the case. The projects studied do not have cost cutting as their main aim, even if their proponents promise cost savings that the services might bring. For example, Seahorse report (Cullen, 1997 p 13) states that "... the project is concerned with contributing to a better understanding of how to empower and support users in effective management of their health – to ultimately reduce their use of healthcare ..." However, during the interview the project co-ordinator clarified "I have to say that it is sort of rhetoric that the Commission wants to hear". (This does not mean that he did not expect the system to have positive impact on the demand on the

healthcare.) Furthermore, in its first year of operation, treating patients in the Deptford Centre proved to be more expensive than in the hospital, because of the lack of economies of scale (CORU, 2000). The telepsychiatry service is yet to be evaluated in the economic terms but it is unlikely that it offers savings. Thus, it appears, that the projects are not primarily motivated by short-term savings.

The telepsychiatry project and Deptford foetal link could be interpreted as an embodiment of technological rationality. After all, “ [b]ased on evidence from the first year of the centre’s operation, this particular attempt to exploit Telemedicine technology can only be judged as a rather expensive failure” (CORU, 2000 p 4) and although successful, the telepsychiatry service could be easily replaced by an outreach clinic, because of a small distance involved. However, these projects could also be understood as exploratory, seeking to investigate potentials of telehealth, contributing to the body of knowledge in the area. For example, Deptford foetal link has been seen as a valuable learning experience by the Telemedicine Manager from the Corporate Department at St Thomas’ Hospital:

I don’t class any of our projects as failures. We have learnt from each one, we have done. Some will continue, in the same form, some will continue in a different form and some won’t continue because the timing wasn’t right, or the application wasn’t right or whatever.

Overall, notwithstanding (some) ambiguities of aims and implementation problems, the projects appear to support the concordist vision of health service. However, these and future initiatives need to be closely monitored, as applications of telehealth could lead to alienation and medicalisation of service, particularly if alternatives were to be withdrawn.

What is also worrying, is that some projects seem to be perceived as research exercises, and somehow their long-term goals (i.e. benefits to patients/citizens) are forgotten. Thus, although Seahorse is perceived as useful (even if not fully utilised), the constraining structures (in this case funds related to internal workings of the European Commission) are making its future unsecured. As Chris Long bemoans:

The people were supposed to use it [Seahorse] only for 2-3 months and then however good it is, unless you can get some money, it is going to be turned off. [...] The Seahorse project really does offer a valuable tool for accessing information. And it would be very good if it was maintained and made more widely available.

This example indicates that transformations telehealth systems aim to achieve are very fragile and still uncertain. New (and old) ideas are still being proven and sometimes even good projects are being abandoned.

7.3 Summary and conclusions

The examples we have chosen to discuss in this chapter do not represent all the main areas of telehealth, nor do they amount to a comprehensive review of one particular sector of telehealth. They are, however, somewhat representative of what is happening in Lewisham Borough and serve to illustrate our point about diversity of telehealth applications. Furthermore, they have enjoyed a different degree of popularity (or 'success' to use this rather controversial word), illustrating the difficulties facing telehealth.

We have listed additional projects in the tables 4-6 to build a picture of emerging telehealth in the Borough and to show how these projects are (or rather can be) interrelated. Clearly, there is an increased activity in the field. This is reflected not only in a number of projects but also in local organisations' strategic plans (see Chapter Six). The projects differ in scale, type of services offered and application area (in terms of medical speciality and geographical scope), they employ different technologies and target diverse users, reflecting the heterogeneous nature of telehealth. The majority of the projects are pilots, funded as research as much as operational systems and still testing the feasibility of such initiatives. The infrastructure provided, and the experience and skills gained can be utilised by more than one project (but this has not happened on a significant scale as yet).

Despite their diversity, a pattern emerges. All the projects have aims that go beyond purely clinical or technical aspirations. The majority of projects either address the issues of local, primary-based delivery care and bringing down the boundaries between different organisations (mainly primary and secondary care, as well as social services) or offering information and support to patients (users). These aims correspond to the needs of users and healthcare providers identified by the programmes organised by Lewisham LA and IHSM. The first reading of the projects indicates that the overall aim to which telehealth

was employed is to improve the health of the population⁵⁰. Telehealth itself, is conceptualised as largely unproblematic, in the IHSM report and other projects' reports (except for the Deptford Centre evaluation where it clearly failed).

The Total Purchasing Pilot (Intranet) suggests that health professionals are willing and, in many cases, looking forward to using the Intranet (or *NHSnet*) for a number of applications, including direct referrals, electronic transmission of test results, information dissemination and communication with other health professionals. While projects like Seahorse and EmpowerNet indicate the ways that patients needs for information, maintaining communication and taking charge of conditions could be addressed. The telepsychiatry project and telelink (foetal ultrasound) in Deptford Market Women and Children's Centre are good examples of more traditional telehealth services (often referred to as telemedicine).

In subsequent readings the projects' aims and evaluation practices were analysed through the notions of social exclusion and empowerment, as well as in terms of the change and control dimensions of Miles' framework. The analysis was guided by the principles of critical research. According to Alvesson and Deetz (2000b) critical research entails engaging in (at least the first two) of the following activities or 'moments': interpretation producing insights, critique exploring domination and repression, and transformative redefinition indicating alternative ways of imagining and relating to what exists. They note that the first activity highlights hidden or the least obvious aspects and meaning of (parts) of social reality. The second uncovers the problematic nature of those meanings. The third points to alternative ways of constructing the reality.

In this chapter we have slightly revised this approach, rather than to concentrate on critique of domination and repression, we have focused on issues related to empowerment and social exclusion. Our interpretations of the projects give hints of sometimes conflicting interests or approaches adopted by different stakeholders, their struggle to find common meanings, constraining structures (e.g. the organisational culture, legal matters or lack of funds and skills), and different ways in which the notions of empowerment and social exclusion are perceived and acted upon.

⁵⁰ There is no clear link, however, between reducing organisational barriers between primary and secondary care and better health outcomes.

The projects themselves sought (to various degrees) to create alternative realities – where patients are empowered, where communities are not excluded, where different organisations within the NHS and beyond co-operate together to deliver best healthcare. These were the elements we have focused on in our interpretations, exploring the validity of the projects' claims (as evident in aims and evaluation schemas) and the alternative futures they suggest.

We find that, the projects' evaluation practices reveal how difficult it is to evaluate telehealth projects and that an assessment of societal aspects, as well as in terms of social exclusion and empowerment, is particularly challenging, and often left undone. It must also be acknowledged that most of the examples cited in this chapter, and in the wider literature, are projects that are funded as research as much as an operational system. What is interesting from the critical perspective, is that the projects are bottom-up, reflecting aspirations of critical theorists of post-modernist era (Bauman, 1993) promoting emancipation as a local and situated concept.

The five projects do combat some of aspects of social exclusion (of individuals, patients groups or healthcare workers) in terms of access to information or services, and to a lesser extent, opening new communication channels, and forming self-support groups. They aim to tackle social rather than just spatial aspects of exclusion, and employ telehealth towards such goals. However, TPP (Intranet project) did not adequately address the processes of exclusion, mainly the barriers of time and skills faced by some (usually small) practices. There is an additional problem of technology increasing alienation, if these services were to reduce human contact. There is, so far, no evidence that indeed this is happening in the projects investigated. But the interpretation of the projects in the context of financial pressures faced by the NHS and the social services implies that eventually such services may be seen in terms of 'saving costs' and that this can only be achieved if traditional services are reduced. Thus such services need to be continuously evaluated and such techno-economic rationality resisted.

Similarly, we must be wary of the empowering claims attributed to different technologies. The projects discussed suggest that telehealth can be used towards empowering patients, citizens and healthcare workers but also that technologies can only play a small part in

the process of self-empowerment or self-emancipation. Thus although, at a very basic level, Seahorse and EmpowerNet address information and communication needs of the service users, the projects' claims regarding empowerment of patients/citizen seem to be overstated. Also, sometimes 'empowerment' can mean unwelcome shifts in responsibility and workloads and privileging one group over another.

Thus, empowerment (and emancipation) cannot be seen in absolute terms and there are many competing, situated rationalities. Therefore telehealth will always have not one but many ambiguous meanings, and the 'transformation within' of telehealth technologies will always be a difficult process of negotiating between conflicting aims and vested interests, and constrained by existing structures (e.g. organisational boundaries or budgets). Nevertheless, our findings suggest the need to contextualise telehealth and place it within people's and communities working practices and daily lives, as well as within wider reforms striving towards (some form of) emancipation.

CHAPTER 8

Conclusions

This concluding chapter overviews the research and its findings. The aim of this research, as outlined in Chapter One, was to explore how the overall concept of telehealth is taking form in the UK, particularly what meanings telehealth acquires in policy papers, through local strategies and projects, and to suggest potential implications of these meanings, focusing on possibilities of telehealth for addressing processes of patients empowerment and social integration. This chapter summarises this thesis' main findings in these areas. It then considers how telehealth may influence healthcare services in the UK and relates developments of telehealth to the wider trends in information society. This is followed by the assessment of the study's contributions to the knowledge of the subject area, as well as in theoretical and methodological terms. Finally, the chapter evaluates the research process and suggests possible areas for further research.

8.1 Underlying assumptions behind the thesis

This research is based on the assumption that the path of technological development is not predefined, as Feenberg (1995 p 2) argues:

...modern technology is neither a saviour nor an inflexible iron cage; rather, it is a new sort of cultural framework fraught with problems but subject to transformation from within.

Within such an approach the field of telehealth offers subtle challenges to researchers as a field that matches new technologies to new conceptions of citizenship and belonging (and of lack of citizenship and exclusion), all played out in a strong institutional setting.

Telehealth systems represent not just technological artefacts, but expressions of desires to reform and restructure the delivery of care. In pursuing this, they then take on and challenge institutions and professions, as well as our understanding of the notions of health and wellness. Thus, telehealth can be seen as a clinical practice, an organisational transformation or a community resource, played out in an (information) society context. In Chapter One we suggested that telehealth can be considered in a variety of terms and in different contexts (i.e. as a drug, technology, information service and information system) but here we want to emphasise that telehealth is not 'a thing', rather an integral part of the medical, organisational and community contexts.

We also recognise that telehealth might potentially not only transform the health service (and to some extent society) but also undergo transformation itself. We have argued in this thesis, that although technologies embody norms and beliefs, they are also malleable at the point of design and use. Thus Feenberg (1995, p 40) extends his argument about transformations to include technical networks:

In sum, Marcuse was right to argue that technical networks of the sort constructed everywhere by advanced societies expose their members to new forms of control; what he overlooked was that these networks are themselves exposed to transformation by the human groups they enrol.

Furthermore he suggests that such transformation, for example changing a medical practice, does not need to be done in terms of a 'Great Refusal' as advocated by Marcuse (1970) but can take a form of a smaller-scale, bottom-up movement of many accumulating transformations building on each other. Thus Feenberg, more in the spirit of Foucault than the Frankfurt School, proclaims the importance of micro-politics. To support his view he gives us an example of a successful movement to de-technicalise childbirth that resulted, for example, in having the option of home birth, use of midwives, and allowing partners to be present during birth. More recently, AIDS sufferers have won rights to un-approved drugs (the process of approving a drug can take years).

On the other hand, Frankfurt theorists advocate the need for change through macro-politics, because locally-focused changes seldom have wider effects and they often are only partial, i.e. do not undermine underlying conditions that, for example, create injustice.

This thesis has tried to marry both perspectives – macro and micro, and to explore how telehealth is shaped and what meanings it acquires at policy, strategy and project levels, and what potential changes these meanings imply.

8.2 Re-visiting the research questions

Chapter One outlined three main research questions to be addressed in this thesis:

- How is the concept of telehealth taking form in Britain?
- What meanings telehealth acquires in national health policy and strategy, as well as in local strategies and projects?
- Considering those meanings, what are the potential social implications of telehealth, particularly in terms of social exclusion and empowerment?

The first question was addressed by studying the relevant literature, taking part in a number of different conferences and meetings, as well as through interviewing people working in administration at a central level (the NHS Executive) and local levels (e.g. Lewisham Council), healthcare providers and purchases, including representatives of medical and IS professions. The literature review included the disciplines of information systems, health / medical informatics, health policy, as well as various policy papers, (international, national, and local). The findings relevant to the first research question are described throughout this thesis, as evident from Section 8.3 (Summary of chapters).

The second research question focuses on meanings of telehealth constructed in national health policy and strategy, as well as local strategies and projects. This was addressed in Chapters Five to Seven. These chapters delivered critical readings of the UK's health policy papers, IM&T strategy and documents developed by the NHS Trusts, Lewisham Council and other organisations in South East London, as well as telehealth projects.

The last question follows from the previous two, as we have argued that social implications are related to the meanings telehealth acquires. Thus, while discussing different meanings we suggested their potential consequences. The primary reading of telehealth projects (Section 7.2.3) directly focuses on implications of telehealth in terms of social exclusion and empowerment.

The findings relating to these research questions are discussed in the remainder of this chapter (Sections 8.3-8.5: Summary of chapters, Emerging concepts and potential consequences of telehealth, and Contributions). Without repeating the material in these sections, the main points are presented here.

This thesis judges telehealth to be ambiguous phenomena. Its organising vision is still taking place on different levels and dimensions. National policy and strategy play a vital part in this process, but equally important are the local developments. The meanings telehealth acquires at first appear to be solely concordist, but further interpretations (readings) uncover more ambiguous meanings. From this, this thesis concludes that social implications of telehealth are by no means obvious or established but are still open to many interpretations. (This point is elaborated upon in Section 8.4.)

8.3 Summary of chapters

The main themes of this thesis were introduced in Chapter Two, which presented an overview of the organising vision of telehealth. It discussed different dimension of the vision – medical, organisational and societal. These different dimensions often give raise to different expectations of telehealth. We concluded that the most overriding expectation of telehealth is to potentially improve existing services and bring new ones to individuals and communities. This is often coupled with claims of telehealth potential to increase effectiveness and efficiency of services. Nevertheless, these claims are largely unsubstantiated. Thus we argue that the legitimisation activities of telehealth are still taking place, in parallel to mobilisation activities. Furthermore, the interpretation activities continue. The organising vision's visibility and perhaps more importantly its nature (i.e. its message) changes, as telehealth acquires alternative or complementary meanings.

Chapter Two also depicted how national policies and strategies create a framework within which telehealth technologies and services can be developed, how macro trends reaching beyond one country can slowly undermine the rationalistic model of healthcare or at least show alternatives (e.g. complementary medicine).

Chapter Three presented philosophical assumptions underpinning this thesis. It discussed different schools in the interpretative paradigm and critical theory. Different flavours of critical theory were compared and the researcher's views on their merits, shortcomings and usefulness to this research were argued. Ultimately, the insights from the works of the Frankfurt School theorists, particularly Horkheimer, were combined with Marcuse and Feenberg's treatment of technology and its influence on society, as well as critical post-modern writings.

Chapter Four discussed research methods used in this study, mainly the case study approach, interviews and observations. It described ways of approaching the analysis of policy documents and case study findings, through the hermeneutic circle. Finally, the research agenda was set out, focusing the study on the relationship between telehealth and national health policies, local strategies and projects, and the assessment of telehealth, particularly in terms of empowerment and social exclusion.

Following this agenda, Chapters Five and Six focused on the interpretations of ICTs and information within national health policy documents and the local strategies of Lewisham Local Authority and the Trusts in the area. Through these we sought to develop some understanding of how telehealth is imagined and given meanings and how different discourses present in these texts may influence the development of telehealth. To do this a sequence of readings of policy texts was described. The work sought to show that, while there is a preferred reading of these texts, and a set of continuities in their evolving forms, there are also a set of specific and not always consistent, images and impressions of the role of ICTs which need to be found and focused on. From this it is then possible to return to the policy and strategy as a whole, and to develop an improved or refined understanding.

Finally, Chapter Seven, concentrated on telehealth projects and the situated meanings of telehealth. We have chosen the London Borough of Lewisham as a case study to provide focus for our research, without narrowing down its scope to one project. This enabled us to illustrate the interrelation of macro and micro trends in one particular locality, as well as to discuss issues of social exclusion and empowerment from the community perspective.

This sequence of presenting national policy and strategy papers, local strategies, and projects 'on the ground' does not mean that we believe that there is a temporal correlation between them. Some Trusts (e.g. Guy's and St Thomas' Hospital Trust) had shown an interest in telehealth before it became very visible on the national agenda. Furthermore, some projects were initiated by individual/small groups of people well before their organisations showed an active interest in telehealth (e.g. the telepsychiatry project). We have rather sought to illustrate how meanings of telehealth and their relation to certain concepts, e.g. empowerment and social exclusion, are built at these different levels, and in relations between them.

8.4 Emerging concepts and potential consequences of telehealth

From these explorations a number of themes emerge. The first one is concerned with the double hermeneutics of the relationship between society and technology. The research reported here illustrates that, in order to contemplate processes of adoption of ICTs and their consequences for society, it is useful to think about how these technologies and systems take particular meanings. These meanings then suggest what type of health service (and in a more general sense – society) telehealth would encourage and reinforce. The first part of this section re-states how wider societal trends influence telehealth, and what meanings telehealth is seen to acquire in policy, strategy and practice. The second part considers the potential implications of telehealth for health services.

The discussion of the organising vision of telehealth in Chapter Two indicates that different trends influencing telehealth, and different contexts or dimensions in which it is conceptualised, developed and applied, are interwoven, and sometimes they may suggest conflicting meanings for telehealth. Thus one of the themes developed in this thesis was concerned with the tension between the concordist and antagonist meanings of telehealth.

We have shown that changes in attitudes towards illness and its treatment, health and wellness, as well as the empowerment of patients/citizens (in terms of providing more information, more choices and ultimately offering/taking a more active role in one's

health) have influenced the way telehealth technologies are conceptualised and applied, particularly as these trends become, to some extent, codified in policy papers and organisational strategies. We have seen how national health policy and strategy documents play an important part in establishing a vision for the way health service is organised and run, and the way ICTs are applied. These policies are then translated (or re-translated) in local strategies and (at times) are acted-upon on the organisational and individual levels, and thus have a real significance for telehealth.

Thus, recent national health policy documents promote a discourse of social responsibility and community values (DOH, 1997; DOH, 1998; DOH, 1999). They also emphasise health prevention, primary care-based and patient-centred services, and co-operation between different organisations of the NHS and beyond. In this context telehealth acquires largely concordist meanings. For example, it is perceived not only as a medical technology but as one that can be employed to promote social ends e.g., to bring better healthcare to the worst off, to help patients become more empowered and to reduce social exclusion of some groups.

Similarly, Lewisham Council, the local Trusts and LSLHA's strategies envisage telehealth as playing a part in making healthcare more equitable, and consider it as a facilitator of better communication and co-operation between organisations. Telehealth is also seen to acquire different roles in terms of supporting existing services (e.g. using email to contact patients), altering the way current services are delivered (e.g. at the distance rather than face-to-face) and providing new services (e.g. web-based information and communication tools, and those enabling self-assessment and self-management of an illness).

We see these different roles for telehealth reflected in the projects we have studied. Thus, although the projects in Lewisham are very diverse, ranging from more traditional telemedicine applications (e.g. telepsychiatry or ultrasound transmission via telecommunications lines) to Web-based systems delivering information to patients and citizens, they all have aims that go beyond purely clinical aspirations.

However, another countervailing theme identified is the rise of the managerialist discourse in the NHS, also brought through policy papers and a 'reform' agenda with

focus on efficiency and effectiveness. This discourse, coupled with lack of resources in the NHS and social services, may itself influence what meanings ICTs and telehealth acquire. Thus in policy papers, ICTs (and telehealth) are also perceived as means of financial control (e.g. monitoring budgets), enabling clinical governance (e.g. enforcing standardisation), and as technical solutions potentially saving money.

Antagonistic undertones can also be detected in the local strategies and the projects studied. We have seen telehealth perceived as a business opportunity at an organisational level, which raises questions about catchment areas and status of organisations. On the personal level it can be seen as a research opportunity, a way of enhancing one's standing in the community, or in contrast, as a threat to professional expertise and established working practices, changing the balance of power between different groups (in terms of professions and individuals), or subtly altering the doctor-patient relationship.

This research then shows vividly the complexity of issues involved, potential tensions and problems, and the choices to be made. The concordist aspirations are intertwined with more ambiguous meanings. Amidst hopes, expectations, difficulties and disagreements the meanings of telehealth are being constructed or rather forged, at different levels and in different dimensions.

This ongoing acquisition of meaning surrounding the role and expectations for telehealth, and more generally ICTs in the health sector, mirrors issues discussed in relation to information society as a whole. For example: centralisation versus decentralisation (more decentralised or centralised healthcare system), devolution of power versus control (devolution of power from secondary and tertiary care to primary care, from managers to doctors, from clinicians to people/patients), or alternatively standardisation of practices (tight control of budgets, efficiency targets, monitoring, e.g. of drug prescribing habits). Other issues derived from the information society debates and directly reflected in this thesis include the centrality of information and the digital divide, the blurring of the boundaries of professional (and patient) roles, the status of national services and institutions versus privatisation and consumerism.

It is beyond the scope of this thesis to dwell at length on possible implications of the case of telehealth for notions of information society. However, some implications of telehealth (or rather its different meanings) for healthcare can be suggested.

Overall, the policies, strategies and projects studied here suggest that telehealth is being employed to support the NHS in its aim of delivering equitable healthcare, to bridge geographical, organisational and social distances, and to facilitate the move towards a less paternalistic NHS (e.g. through more informed citizens and patients). These aspirations reflect benefits of telehealth envisaged in the relevant literature.

However, a number of authors note that information systems not only acquire meanings within a managerialist discourse, but may also in turn reinforce the trend towards managerialisation (Bloomfield, 1991; Doolin, 1999a; Doolin, 1999b; Ferns and Mowshowitz, 1995). Such literature depicts how ICTs are used (have been used) to introduce organisational change and enforce control and monitoring at the central (government) or organisational levels. In this vein, telehealth too is expected (as discussed in Chapter Five) to subtly alter medical practice, e.g. by facilitating the practice of evidence based medicine (through access to on-line information resources and introduction of protocols). Such changes are promoted by the government as positive, as setting standards, increasing (and equalising) levels of performance, identifying poor performance. Yet, as critical theory invites us to consider, technologies and technological systems may have less welcomed effects. Thus they may lead to increased rationalisation of healthcare, stifling innovation, artificially standardising treatments and assessments of performance (without taking into account local conditions and situated rationalities). To the degree that this is the case or becomes the case, telehealth would then serve a health service dominated by techno-economic rationality.

However, in addition to these emancipatory and managerialist discourses there are other potentially counter-active powers, e.g. of healthcare professionals. Thus, managerialist-driven applications of IS are resisted by the medical profession and often fail or are re-interpreted (Doolin, 1998; Doolin, 1999a). Also, the debates about evaluation of telehealth can be seen as an indication of the medical profession exercising its power against the commercial and governmental 'push' towards the introduction of telehealth.

Thus different discourses and interests (uncomfortably) co-exist, without achieving total dominance.

We have seen that some of the telehealth literature voices such a concern, that telehealth or rather telemedicine may increase the trend towards medicalisation of services and the focus on scientific medicine. This coupled with the drive to save costs may result in services that are depersonalised (e.g. caring aspects of healthcare being replaced by technical intervention, e.g. telecare systems) or are of lesser quality (e.g. provided by staff without adequate training in the use of a particular technology). These concerns were also expressed by some of our interviewees.

Even applications, which seem to have emancipatory aims can have ambiguous long-term effects. For example, the process of empowerment might be re-constructed as consumerism and individualism. Telehealth may be employed to deliver expert knowledge or services for those willing to pay, as is already done on international level, with Western centres of excellence trying to extend their catchment areas to other countries (Tachakra, et al., 1996). A vision of telehealth developed as an alternative to the NHS, or as a 'fast track' within the NHS, may undermine – not re-enforce – the egalitarian ethos, further polarising the provision of healthcare. And it is a task of a critical researcher to highlight such possibilities, as well as remaining faithful to the insights gained.

In this light we see that the projects researched here do not seem to follow exclusively or narrowly such techno-economic rationality. They do not focus on cost-efficiency, managerial control or even techno-medical solutions. Rather they seem to support models of care based on a holistic understanding of 'wellness', framed in social rather than purely medical terms, and are often aimed at serving socially excluded groups. However, despite their largely concordist aims, they do illustrate the existence of sometimes conflicting, situated rationalities, e.g. in the way professional roles are defined, or patient empowerment is understood and re-defined by different individuals and 'relevant social groups'.

Of course, the potential implications of telehealth, discussed here, are to a certain degree speculative. So far, the wider or cumulative consequences of telehealth initiatives that are

taking place are still very tentative. At the local level, lack of funds coupled with shortage of IT skills impair the organisations' ability to implement the (ambiguous) vision set out, for example, in *Information for Health*. In some organisations (e.g. Community Trust) this has meant that telehealth was never explored (and perhaps rightly so, taking into account other demands made on the Trust). Even in Trusts involved in telehealth projects only to a limited extent have telehealth technologies become an integral part of structure. We see the projects studied here as all suffering from the lack of long-term funding and of organisational and professional commitment. The benefits they offer are not always clearly identifiable, particularly in an urban area where geographical distances, which telehealth traditionally aims to bridge, are not great. More generally, there is a sense of not now, not yet.

Information for Health says we should consider telemedicine with every programme. There is very little evidence across the sector (LSL area) that telemedicine is considered. If I was to give a reason for that I think it is because we have been concentrating on bread and butter. I think there is still a view that telemedicine is complicated. We haven't sorted out the basics yet. (Head of IT, SLaM)

Overall, as our research and the literature indicates, in the UK, the majority of telehealth projects are still funded from R&D budgets, and usually they are in pilot stages, rather than taking form as established on-going services. Despite this, the government's interest in telehealth, the recent reforms of the NHS and the wider trends (e.g. emphasis on primary care, more informed citizens, etc) indicate to us that this type of service will have a place in the British healthcare system.

Taking a longer-term view, we might see such technologies as increasingly being used to deliver and co-ordinate services in more innovative ways. These ways however are still being discovered and re-discovered in a myriad of often disjoint projects and initiatives. Thus implications of telehealth technologies for the way health and healthcare is provided remains an open question.

8.5 Contributions of the research

This section discusses the contributions of this research and its implications for future work. The nature of contributions in qualitative research can seldom be precisely stated. One description of contribution would be to increase the knowledge of the field.

Knowledge itself of course is a highly complex and disputed term. The contribution could be in terms of reflecting or ‘matching’ the world as it ‘exists’, providing alternative, often novel interpretation and/or guiding action. Alvesson and Skoldberg (2000a) state that a practical or technological value, i.e. ability to guide action, could be seen as the main criterion of good theory and research. Thus the value of research would be foremost judged by practitioners. However, the authors point out that such approach is a little problematic. Although ‘practitioners’ may mean anyone, technological value could too easily be interpreted as serving the elites. Furthermore, such a perspective leans towards functionalist understanding of knowledge.

Here we adopt a more encompassing view of contributions, beyond technological value and seeing them in terms of three broad categories: practice, theory and methodology.

8.5.1 Practical contributions

Healthcare is one of the main issues on which the UK's last two elections (1997 and 2000) have been fought by the (winning) Labour government, and telehealth is gaining increasing visibility, particularly in the government's health policy and strategy, as well as bottom-up projects. Yet, the vast majority of the literature gives simplistic or partial accounts of telehealth.

This thesis offers a distinctive perspective, focusing on meanings of telehealth and embodying the analysis within a philosophical (critical) discourse. The main contribution of this thesis is in its effort to critically analyse telehealth on different levels: macro (in our case - policy), mezzo (local strategies) and micro (individual projects). It is in the interplay of these levels and within the wider context of information society that the picture of telehealth emerges. The overview of developments in telehealth within the context of societal trends, health policy and local developments, contributes to the discussion on trends shaping telehealth and in turn on implications of telehealth for the health delivery. Additionally, interesting insights into situated meanings of telehealth have been offered through the study of telehealth in one locality within the UK – the London Borough of Lewisham. This, together with our interpretations of policy and strategy documents should be of interest to academics and practitioners, including policy makers.

These contributions are not confined to narrowly understood telehealth, but can also be seen as contributions to the IS field in general. After all, IS crosses disciplinary boundaries and draws on different academic traditions. Furthermore information systems in health and community settings are no less important than more commercial developments (e.g. in banking). This section elaborates upon these contributions and commences by explaining the distinctive approach of this thesis to the field of telehealth.

Horkheimer, Adorno and Marcuse call for a revival of a philosophical discourse that contained the sciences within philosophy. They criticise narrowly defined notion of rationality, that betrays procedural nature emanating from specialised sciences (Misgeld, 1985). This is what this thesis tries to do. Thus the study embodies discussion of information systems and telehealth specifically within their social context and philosophical discourse. It focuses on perceptions of telehealth, as well as values, norms

and the underlying ethical assumptions influencing (or not) those developments. Weizenbaum (1993 [1976] p 250) observes that "... meaning has become entirely transformed into function". Hopefully this research has managed to go beyond such a viewpoint.

Thus, we see telehealth as needing to be understood not only as a medical technology/treatment, but also in terms of an information system supporting information needs within formal health institutions, as well as an information service in the context of information society. As telehealth draws on different disciplines and crosses institutional boundaries we argue that ethical resources from different fields need to be considered. These traditions each bring with them their own concerns, for example from the IS perspective; conflicting information needs of different participants, and from an information society perspective the place of ICTs in our daily lives. One of the contributions of this thesis is in bringing to the attention these multiplicity of issues and traditions and posing them as a problem that needs to be addressed in practice.

These tensions between different traditions and diverse disciplines highlight the complexity of meanings of telehealth that are reflected in practice, for example in disputes about the evaluation of telehealth. We suggest that evaluation should, and inevitably will, draw on a variety of traditions. Certainly, treating telehealth as a drug or medical procedure and concentrating solely on randomised controlled trials is very limited and, in many cases, of doubtful benefits. Nor does it reflect significant ethical concerns, for example long-term effects on the doctor-patient relationship or institutional structures of healthcare delivery.

These tensions between different traditions could also be taken as an illustration of the wider struggle to define the ethical underpinning of ICTs in the information society. As this field further develops and becomes more central to health care delivery, the treatment of ethical issues in telehealth needs to be seen as going beyond individual projects or clinical situations and to be considered in relation to society as a whole and varied interest groups within it. Thus, we suggest that telehealth could be increasingly evaluated in terms of empowering patients and communities, contributing to social cohesion, and democratising healthcare structures and service delivery versus intensifying social exclusion (information rich and poor), alienation and de-personalisation of health

services (providing treatment not care). Also the implications of standardisation and enhanced levels of control (surveillance) that telehealth may encourage need to be considered. The case for such an approach to evaluation is one of the practical contributions of this thesis.

Another contribution lies in the analysis of the implications of national health policy papers and local strategies for local initiatives in telehealth. Guided by critical theory, this thesis questions the reasons behind and the consequences of the national health policy and local initiatives, trying to expose signs of instrumental reason and technological rationality, heeding Weizenbaum's warning: "When instrumental reason is the sole guide to action, the acts it justifies are robed of their inherent meanings and thus exist in an ethical vacuum" (1993 [1976] p 276).

The case study of the London Borough of Lewisham then illustrates how different influences shape telehealth in one locality. The case study manages to capture national and local trends and show how they are translated into concrete projects. The list of project undertaken by different Trusts in the Borough provides an interesting snapshot of telehealth in one particular locality. The fuller description of the five projects shows problems with telehealth solutions, as well as difficulties faced with the organisation of such projects. They also demonstrate the ambiguous potential of telehealth – in terms of improving healthcare services, the co-operation between organisations, combating social exclusion and facilitating self-empowerment of healthcare workers, patients and citizens. At the same time, the projects illustrate that achieving such potential is not easy or foregone, and the goals and aims are usually overstated, particularly the expectations regarding the empowering capabilities of telehealth.

Origins and consequences of technological artefacts are often depicted in simple deterministic terms, and unfounded claims are made on behalf of technology, that do not take into account social (including political and economic) conditions of technology's creation and use. Bringing together the different strands of this research we have illustrated that telehealth is shaped (acquires meanings) on different levels, e.g. through policy and practices, and although 'effects' of telehealth technologies and services cannot be easily predicted, those meanings suggest certain consequences. Thus the analyses undertaken to highlight such meanings and their potential consequences can be seen as a

main contribution of this thesis. Going beyond health and healthcare, we suggest (as others have done before us) that society and technology are engaged in a reciprocal relationship. Based on this assumption we argue that neither a belief in a Utopian vision achieved through benevolent applications of technology (with predictable consequences), or despair and a belief that technologies are fully autonomous and beyond our control is a position to take. To paraphrase Feenberg's (1991) statement – we need to develop technology that charts a different road between resignation and utopia. This thesis offers a small step towards this goal, depicting how local efforts and national policy may influence the shaping of telehealth, and confirms that citizens do have an opportunity to participate in forging the meanings of telehealth.

8.5.2 Theoretical contributions

The theoretical contributions of this dissertation are several. The first one lies in bridging of ideas and previous work in two distinct academic fields: IS and social theory. The second contribution lies in presenting and critically discussing different strands of critical theory in the light of more recent developments (e.g. post-modernism). The third is concerned with applying critical concepts to empirical research and through this process validating such an approach. The remainder of this section will elaborate on each of these contributions. However, it must be noted that these contributions are interrelated and artificial boundaries between them will not be preserved.

IS is a multidisciplinary area that often 'borrows' from other disciplines, but a critical synthesis of different views is never easy, and if well done, contributes to the further development of IS as a discipline. In the course of this research, the author has investigated a number of theories. This thesis drew primarily on critical theory, but also on hermeneutics and several strands of social constructivism. Some may see this as a weakness, however we would argue that as long as theories are not obviously contradictory, they can offer different insights into the problem under study. Alvesson and Skoldberg (2000a) see critical theory as an 'almost metatheory', which may not replace the need for a specific theory associated with the area to be researched.

We see this incorporation of varied ideas, without being ad-hoc eclectic, as a contribution of this dissertation, not only in terms of content (i.e. the way those concepts were

synthesised) but also as an illustration of the research process as a continuous learning exercise. Of course, we are aware that this approach is not unique. Furthermore, in the course of this study we have come to realise that other researchers were also enriching critical studies with other theories. For example, Doolin (1998, p 1) argues:

By utilizing a perspective drawn from the discursive and disciplinary work of Foucault and recent work on the sociology of technology, we can complement the thick description of interpretive research with the broader sweep of critical social theory.

We also recognise that critical theory itself is not unified, but rather constitutes diverse writings of many theorists. More recent developments, particularly post-modernism and different social theories, bring new perspectives on the relationship between society and technology. The contribution of this thesis then lies in bringing together those different views and suggesting that they are compatible. Thus, this thesis agrees with the Frankfurt School theorists that certain actions need to be political and that they should address the totality. However, it also acknowledges post-structuralist concepts of local sources of knowledge and power (Foucault, 1980). It also points out the limitations of Frankfurt School writings, particularly a somewhat totalitarian understanding of the concept of emancipation. It acknowledges post-modern critical theorists who point out the fragmentation of ethical perspectives but without subscribing to moral relativism (Bauman, 1993). Thus, in relation to telehealth we believe that local applications are important, i.e. no single ethical norm or practical solution is good for everyone. However, some general, overall norms may be of benefit as well. For example, we advocate the need to preserve the NHS as a universal service.

This thesis demonstrates that critical research combining fieldwork and theoretical analysis is a feasible and valid exercise, resulting in new insights about the subject domain (in this case telehealth). Critical theory, infused with post-structuralist, post-modern and information society ideas, offers solid theoretical foundations for many research efforts in information systems and other disciplines. The next section elaborates on the way this research applied critical theory.

8.5.3 *Methodological contributions*

Early on in this work, the researcher was faced with an important and difficult problem, i.e. how to conduct a research from a critical standpoint. Critical theorists may advocate

fieldwork but seldom engage in it. Addressing this question and producing work that critically explores developments in telehealth is a contribution of this research to the application of critical theory. The way this research links societal, organisational and individual perspectives can be also considered as contribution to IS research methodology. The design of the case study, particularly the choice of scope, as well as data collection methods may be of interests to other researchers. The rest of this section discusses these contributions.

Critical theory does not prescribe specific methods for empirical research or offer detailed guidelines to follow. Chapter Four argues that we should not seek to formalise the process of critical research, because capturing complexities and nuances in the world cannot be reduced to 'steps'. However, this posed a difficulty for this study in terms of deciding how to conduct the research and how to judge its quality.

Such problems have been addressed by a number of researchers (Alvesson and Deetz, 2000b; Alvesson and Skoldberg, 2000a; Morrow and Brown, 1994). A reader can find introduction to different types of critical research, as well as summary of different criteria for assessing its quality in Kincheloe (1994). A number of researchers have conducted critical studies in different disciplines. Forester (1993), for example, illustrated how critical interpretation of meetings can uncover forces of domination and hidden agendas. While Alvesson and Willmott (1996) and Alvesson and Deetz (2000b) applied critical theory concepts to the field of management. Similarly, there is an increasing interest in critically lead research in IS (Basden, 2001; Saravanamuthu and Wood-Harper, 2001).

The author of this thesis was faced with an important choice regarding the unit of analysis. Should a critical researcher focus on emancipation within organisational boundaries or alternatively consider how critically-informed research could influence wider society? The choice of either of these models has implications for the contributions expected, and the second type of research seems more difficult. Although it is customary to focus on one of the units of analysis, consideration of multiple units of analysis is important for capturing different perspectives. As Markus and Robey (1988 p 596) note: "By consciously mixing levels of analysis, researchers can explore the dynamic interplay among individuals, technology, and larger structures." From a critical theory perspective Horkheimer (1972c p 249) commenting on critical theory proclaims: "The

theory is concerned with society as a whole.” Morrow (1994) argues that a good critical research even if focusing on a particular level of enquiry should remain aware of other levels and their influence on the research area.

Thus, an important methodological contribution of this research is the way it links societal, organisational and individual perspectives. In this it aims show how different structures interrelate. From this aim of exploring the interplay between telehealth, social trends, national policies and local/organisational strategies and individual projects, comes the choice of and the design of the case study. The majority of case studies conducted in information systems discipline are on the organisational level. They either describe individual institutions/projects or compare a few chosen ones. An alternative approach involves statistical analysis of many cases. Our case study delivers an overview of different projects in one locality (Lewisham Borough), rather than providing in-depth study of one, because there is a need to look at telehealth at a community level, e.g. to see how different projects link or should link. As one of the people interviewed stated: “Telehealth will only work as a part of the infrastructure”. This is recognised at the macro level, and the UK government is interested not only in nation-wide proposals but also in their local implementations. Perhaps more importantly, the community view links well to concepts of social inclusion as well as empowerment (we consider empowerment not only on individual but also on community levels). The case study design used here allowed us to relate situated (localised) realities to wider societal trends, particularly policy and strategy, and to explore cumulative consequences of telehealth.

The case study analysis benefited from a wide range of data collection methods. These included interviews, observations (at the meetings and workshops), as well as secondary analysis of published and unpublished documents. Although interviews and observations provide the most interesting insights, official publications can deliver background information, as well as present an official view of the organisation/authority. Critically interpreted, they can indicate the organisation’s aspirations and plans, and contrasted with less censored documents and interviews they can illustrate disparities between different views. We would encourage other researchers to strive to collect information from different sources.

However, in a critically lead study the collection of empirical data is not the most important task, and reflexivity must play an important part in the research process. The research should be strongly infused with theory and interpretations/discussion should go beyond immediate findings. On the other hand, we strongly believe that one should not ignore empirical aspects all together. Similar view is taken, for example, by Alvesson and Skoldberg (2000a). Thus the contribution of this study is its attempt to balance theoretical and empirical aspects.

8.6 Limitations of the research

We consider as a real contribution this study's effort to conduct critically-informed research in IS and to give due weight to theoretical and empirical aspects, but the scope of this endeavour posed challenges for the researcher and as a result the outcome could (as always) be improved. The limitations can be put into two categories: methodological and theoretical.

First, the nature of telehealth, as a new and evolving technology poses difficulties in obtaining quality research material, limits any historical studies and raises methodological problems. The broad scope of this thesis means that some aspects may have been researched to a greater and some to a lesser depth. Thus we were unable to study to the same degree all likely macro-trends and structures that may influence the developments in telehealth. Also, although a number of telehealth projects were investigated, only some of those within the boundaries of Lewisham Borough and Lambeth, Southwark and Lewisham Health Authority (LSLHA) were studied at any depth. Thus claims of generality of findings can be only tentative⁵¹. Furthermore, although in the course of the research we tried to re-visit organisations and when possible interview some of the people more than once, the research may have benefited from a longitudinal study.

Second, this research could also be criticised on the theoretical level. The orthodox view is that true critical research should culminate in emancipatory actions. This is beyond the scope of this project. We can only hope that its findings may in some way influence such

⁵¹ There is an on-going debate about generality of qualitative work. One view is that even one case study could be considered 'generalisable' if it has delivered insights into the underlying process of the phenomena under study (Walsham, 1995).

developments (as we intend to share this work with people who participated in this research and we have already done so, to a limited extent, through the published papers). Perhaps more importantly, developing an ability to see the world in critical terms is an on-going process that the researcher has engaged in throughout the PhD, and thus this thesis – the final effort – is not a last word in critical research on telehealth or even a finished product, but a new point of departure. For example, it would be interesting to re-visit the policy and strategy documents and the projects through critical realism of Bhaskhar (1975; 1989).

8.7 Suggestions for further research

Our suggestions for further research include the ways of overcoming the limitations of this thesis, as well as the discussion of related areas that merit further exploration.

In the first category, we would consider conducting a longitudinal study or at least re-visiting the projects discussed in this thesis to take forward the discussion of their potential ‘impacts’ (or rather influences). This discussion may be undertaken from different angles; one of those would be to explore further issues of telehealth and patient empowerment, the other might consider effects of telehealth on the health delivery, healthcare structures and practices. For example, studying the intersection of telehealth and evidence-based medicine would incorporate notions of apportioning of responsibilities, decisions and risks, not only between different healthcare providers but also between doctors and patients.

A more user centred approach would be particularly beneficial, involving interviews, questionnaires and observations, e.g. to see how, for what purpose patients/citizens use the service, and to explore how it effects them (e.g. in terms of perceived health status or social integration). Such research could concentrate on a single project or investigate a number of projects and their cumulative influences (e.g. as we have done it – in one locality).

Alternatively, telehealth’s other meanings could be further explored, particularly the conceptualisation of telehealth as a business, and its implication for the healthcare

provision in the UK and beyond. This would include investigating projects that, for instance, aim at 'selling' expertise, an example being a second opinion service provided from St Thomas' Hospital to Dubai.

Our remaining suggestions consider areas that would complement our research. For example, the processes of setting and implementing *Local Implementation Strategy* (LIS) offer countless opportunities for IS-related research. LIS are complex documents that balance (or rather attempt to balance) interests of different local stakeholders, as well as satisfying guidelines from the national strategy. From the policy perspective a comparison of a number of LIS may open a more in-depth discussion of different meanings of telehealth, situated organisational and inter-organisational rationalities, and - on a practical level – lead to a set of policy suggestions. From a strategic perspective, LIS brings together notions of a Strategy (with a capital 'S') and local implementations. This effort to combine the ideas of planned strategies with situated bricolage of implementations is worth following to see if and how these two approaches interrelate ('sit together').

Another promising area related to this research is the development of a theoretical, critical theory inspired framework for the study of telehealth and more generally information systems at the national and international levels. The majority of critical works in information systems are concerned with the critique, design or implementation of particular projects. This work consciously adopted a higher level of analysis. It placed the empirical findings in the context of societal trends, drawing mainly on critical theory, and insights offered by information society and post-modern theories. Nevertheless, a more theoretical approach than developed here would be of a particular benefit for the critical stream in information systems, expanding research boundaries and providing a starting point for new works. Such a framework may contrast 'grand refusal' approaches with more local, fragmented emancipatory movements.

These suggestions for future research indicate that our study could be taken further in many directions and conducted on many levels of analysis. This research, covering a comparatively new and under-researched area, set out and hopefully achieved its aim of opening discussion on different meanings of telehealth forged at national and local levels.

9 List of Abbreviations

CORU - Clinical Operational Research Unit

DOH - Department of Health

EPR - Electronic Patient Record

GP - General Practitioner

HAZ - Health Action Zone

HA - Health Authority

HER - Electronic Health Record

IHSM - Institute of Health Services Management

ICTs - Information and Communication Technologies

IS - Information Systems

IT - Information Technology

LA - Local Authority

LIS - Local Implementation Strategy

LSLHA - Lambeth, Southwark and Lewisham Health Authority

NICE - National Institute for Clinical Excellence

NGO - Non-Governmental Organisation

NHS - National Health Service

PCG - Primary Care Group

RCT - Random Controlled Trial

SLaM - South London and Maudsley Mental Health Trust

TPP - Total Purchasing Pilot

10 APPENDICES

10.1 Appendix A - Technological focus - social dimensions of technology

Telehealth may be understood as a technology, or rather a collection of heterogeneous technologies. Thus, early on in our research we investigated theories that attempt to explain how artefacts come to be. We turned to diverse theories and studies that can be united under the term of social dimensions of technology. These vary from social shaping of technology, social constructivism, cultural construction ('culturalists'), systems theory, to Actor-Network Theory (ANT). These theories share an assumption that technology can be understood as a social product, or at least as possessing a social dimension.

Social Shaping of Technology

Social Shaping of Technology movement was forged amidst many discussions in the 1970s to mid 1980s. Work in this tradition has been concerned with the way organisational, political, economic and cultural factors influence the process of technological change. It provides an alternative to technological determinism by proposing that technological change is shaped by the conditions of its creation and use. On the other hand it also denies simple social determinism by maintaining that technology does not emerge from a single social determinant. Instead technological change evolves through choices (not necessarily conscious) between different technological options. Those choices in turn are shaped by social factors. Thus there is always a number of possible outcomes (MacKenzie and Wajcman, 1985; Williams and Edge, 1996).

Systems Theory

A version of systems theory was developed in the history of technology by, amongst others, Thomas P. Hughes. The premise of this theory is that technological, economic and social factors are all part of a seamless web irrespective of knowledge categories or professional boundaries. Similarly the boundaries between technology and science, pure and applied are seen as artificial. Technological systems include physical artefacts,

organisations, as well as other components like books, articles, university or research programs, legislative/regulatory laws or even natural resources. A system artefact interacts with other system components, all of which work (directly or indirectly) towards a common system goal⁵² (Hughes, 1987). Hughes (1986) illustrates the theory with studies of large systems, for example of electrical power networks. He gives an example of Thomas Edison, as a systems builder who did not distinguish between economic, technical and scientific matters.

ANT

Actor Network Theory (ANT) takes the concept of 'seamless web' even further, because it not only extends analyses of social networks of actors to include non-human actors, including technological artefacts, but it rejects the distinction between technology and society and perceives them as a seamless web (Williams and Edge, 1996); (McMaster, et al., 1997). 'Transformation' is one of the main concepts of ANT. Callon (1986) argues that in order to play their parts in the system, actors must be transformed, i.e. their attributes must be changed to fit other components of the network. For the system to succeed such a transformation must become stable. However this is difficult as actors have a tendency to revert to the old status, or to form new networks. As actors undergo transformations, so does the system (project) itself.

The social constructivist approach attempts to apply recent work in the sociology of scientific knowledge (SSK) to the case of technology. Theorists of SSK argue that knowledge is socially constructed, rather than based upon unchangeable natural laws. Despite their differences, social construction theorists share a number of assumptions (Bijker and Law, 1992). Firstly, that technological change is contingent. This means that it cannot be explained in reductionist terms, because innovations are not driven by internal logic and do not follow predefined paths. Secondly, technological change is born out of conflict, difference and resistance. This is because of conflicting interests of different groups or individuals who are either involved in development and introduction of an innovation or who may be affected by it and therefore seek to change it. Thirdly, people are both shaped (or their lives are) by technology and help to shape it.

⁵² This premise has been disputed, because some system components may work towards their own, rather than the system's goals.

The development of telehealth technologies can be placed within the three stages of technological development proposed by Pinch and Bijker (1987). These are:

1. Interpretive flexibility - demonstrating that the technological artefacts are culturally constructed and interpreted, i.e. the flexibility is manifested not only in how people think of or interpret artefacts but also design them;
2. Closure or stabilisation of an artefact. This concept describes a process by which an artefact is stabilised and the problems relating to its introduction are resolved or *appear*, to the relevant groups, to be solved;
3. Relating the content of technological artefact to wide socio-political context. Technology is given meaning by different social groups during an 'appropriation' process, and norms and values of those groups are in turn shaped by broad socio-political factors. Pinch and Bijker claim that in this way a wider context is incorporated in SCOT approach.

There appears to be a fundamental problem with the concept of stages of technological development. It may be argued that closure or stabilisation of an artefact never actually happens, that technologies are malleable and they change continuously. This seems to be particularly true of ICTs as opposed to for example a bicycle (although a bicycle design is modified continuously, the changes are not fundamental).

Technography

Technography is another approach that we can turn to gain a better understanding of the processes of technologies' development and use. Technography is the social-scientific study of technical settings. It claims to centre on social dimensions of technology even to a higher degree than social constructivism 'Technography sees technology as representing a kind of 'social order' represented by the linking together of sets of social relations' (Woolgar, 1996, p 90). Its main focus is to determine how distinctions between 'producer', 'consumer' and 'user' are sustained and what effect they have on the design and development.

Technology can then be seen as embodying the various social factors involved in its design and development e.g. practices, assumptions, beliefs, language, etc. Furthermore, these embodied factors (social relations) have consequences for subsequent usage of the technology as users confront and respond to them. Thus this particular perspective is

concerned with both the production and consumption of technology. It offers a way of understanding the 'impact' of technology by emphasising the social relations between producers and consumers.

Technology as text metaphor

Woolgar (1996) proposed a different version of the 'social dimensions of technology' perspective - i.e. technology-as-text approach. He suggested that technology can be regarded as a 'text' that is constructed by an 'author' within a particular social and organisational context and often with a particular type of a reader or reader groups in mind. The reader (user) will perform reading in the context that is usually separate from the context of the production of the text. Yet this 'reading' (or 'appropriation') process is often conditioned by the embodied relations within technologies. Thus some technologies may fail because social relations (values, attitudes, beliefs) embedded in them do not correspond to the values of potential users. To avoid this, designers try to incorporate user values and needs in the technology and/or allow certain flexibility within their design.

Discussion of the relationship between texts and their readers is reflected in the diversity of views regarding the relationship between technology and its users. Thus at one extreme the position is that text possesses intrinsic characteristics and at the other - that it has none, the attributes are given by the reader. The middle position supported by Woolgar and shared by the author is that the reader might choose to read/interpret text in different ways although there usually is a 'preferred reading(s)'.

Summary of social dimensions of technology approaches

Social dimensions of technology approaches share many common concepts, for example the 'reading' process referred to by Woolgar can be also described as an 'appropriation' process (a term used by some SST theorists). SCOT, ANT and systems theory all offer views on how innovations come about, how they mature and become success or failures (noting that sometimes a failure can with time be transformed into success).

They do however, differ in the degree to which they centre on social dimensions of technology, as well as in the approach taken to studying this phenomena. For example the argument that technology is socially constructed more strongly emphasises the social

dimension than the statement that technology is socially shaped. While Woolgar (1996) claims that technography is concerned with social dimensions to a greater extent than social constructivists are.

There are number of significant differences between SCOT, ANT or systems approach. For example SCOT applies the ideas of SSK and introduces the notion of stages of technology development. ANT and systems theory have more similarities – they both refer to a ‘seamless web’ of artefacts in a technological system (these can include organisations, people or technological components). However ANT rejects outright the distinction between technology and society and proposes that both should be studied in the same way. Also, systems approach distinguishes between the system itself and its environment, i.e. factors outside the control of the system, while ANT encompasses all. Despite their differences, both approaches are based on similar theoretical foundations. Likewise technography shares many concepts with ANT. In fact Bruno Latour (exponent of ANT) and Steve Woolgar (Technography) collaborated on some projects and produced a book together (1986).

Criticism of social dimension of technology movement

Such theories are not without their critics. For example, the claim made by Pinch and Bijker that a wider context is incorporated in this theory is questioned by Russell (1986) in his article ‘The Social Construction of Artefacts: A response to Pinch and Bijker’. The author believes that the interest of different groups, interrelations and power struggle between them, and their influence on technology development are not stressed enough. He states that groups must not only be identified and described but also located in a structured and historical context. ‘Interpretive flexibility’ must take into account groups’ resources of knowledge and power and their access to information about technologies. The process of stabilisation involves power struggle between different groups. Controversies are not easily resolved, or even made to *appear* to be resolved. Therefore, interests of less influential groups are often suppressed. Furthermore Russell questions the whole parallel with science and sees a relativist approach as inadequate analytically and unacceptable politically. He advocates incorporating the study of technological change, as a distinctive dimension, into an established, broadly Marxist school of social

analysis rather than “simply attaching some dubious sociology on to internalist histories of technology” (Russell 1986).

Russell's viewpoint adds another dimension to the studies of technological change. In a paragraph titled 'Labour Process theory and Beyond' he stressed the role of technology in individual and collective consumption. He advocates the necessity of bringing Marxists notions of 'choice', 'market' and 'need' into the study of technology. Consumer groups (groups understood as small social entities or even individuals, rather than politically organised bodies) exert influence over forms, range and nature of goods and services offered. In turn goods and services providers manipulate consumers to desire particular goods or lifestyles. Russell believes that we should go beyond such analysis and "... explain, for example, why a workforce is excluded from the design of equipment it must use, or why a population suffering harm from a toxic effluent cannot bring about the adoption of a different chemical process. Not to do so is again to legitimate existing patterns of control and deny the possibility of change."

A more general criticism of social construction of technology or social constructivism (including SCOT, ANT, social shaping of technology) is voiced by Winner (1993). In similar vain to Russell he undermines the concept of *relevant social groups* by questioning the process by which they are defined, i.e. he asks who they are, who decides their relevance. He suggests that those affected by new technologies but lacking a political (or any other) voice may be not regarded as *relevant social groups* and their interests not represented. Furthermore the focus on immediate needs, interests, problems and solutions of particular social groups and actors disregards the possibility that technological change maybe also dependent on larger patterns and interests, e.g. macro-economics and macro-politics. These points suggest that following the path of social constructivism may lead to partial explanations and a presentation of a skewed view of developments.

Perhaps a more fundamental argument against social construction of technology is Winners's charge that their writing almost totally disregards the social consequences of technical choice and concentrates almost exclusively on the origins of innovations, i.e. its construction. This leads to a lack of an evaluative stance or any moral or political principles that might guide people in their judgement regarding the possibilities of new

technologies. “The empirical program of relativism in the sociology of science becomes the methodology of interpretive flexibility in the new sociology of technology. Rather than attribute any particular meaning to a technical device or its uses, social research tries to understand how it is that some people see a developing artefact in one way while others see it quite differently.” (p 371) This is seen by Winner as an important and dangerous flaw. He believes that concerns about the place of technology in human affairs and the quality of life in modern technological societies must be addressed. The decisions made during design and implementation of new technologies incorporate – directly and indirectly - moral choices. Essentially, Winner’s position is somewhat similar to critical theory tenets.

A relativist stance is also seen by Button (1992) as a weakness of SCOT. In addition, Button criticises the approach for not adequately discussing the nature of technology, even if proclaiming to do so. He proposes that “technology is a *social production*” (author’s emphasis). Thus, practices and processes through which technological work is organised and the technology itself is produced need to be studied. This, according to Button, is missing from relativist-constructivists accounts. Such criticism equally or even more so applies to technography and Woolgar’s writings.

Comment:

While such criticisms are worth taking into consideration, they do not, perhaps, undermine the validity of the social constructivist approach. There are valuable lessons to be learned from theoretical discussions as well as from analysis of past technological developments. However limiting, the aim to study the development but not consequences of technologies maybe considered legitimate. As Winner (1993) does point out, social constructivists demonstrate that choices are available, that we can influence the technological developments. This in itself may be taken as basis for accepting responsibility for actions and their consequences, for not using technologically deterministic excuses. This is where critical theory finds its role.

The Applicability of the approaches discussed to this research

To some extent Social Shaping of Technology (including constructivists) is, or (on many accounts seems to be) incompatible with our research. It differs in focus (micro rather than macro) and research methodologies used. Firstly, case studies used by these

theorists usually refer to past developments (e.g. explanatory studies). Secondly, the majority of cases studied refer to a well-defined, individual technology, e.g. a bicycle or a light bulb. The idea-generation and design processes of such artefacts are studied to a great detail using rigorous methods, including text analysis.

Yet, these methodological differences are not over-reaching. The focus on past development is a choice of the researchers, rather than fundamental requirement. It does not mean that their ideas should not be applied to technologies being currently created. Indeed such a course of action is postulated by Callon (1981). Also, some theorists have investigated more general technologies, rather than single artefacts, for example Hughes (1987) analysed an electricity supply system. Furthermore, although the majority of SST and SCOT theorists use case studies on a micro level (e.g. seeking to determinate how technologies are created in laboratories, etc.), their claims are made at a macro level (e.g. that technologies are socially shaped by group and individual interests, political and economic factors, etc.). Nevertheless, SST, SCOT and ANT are more concerned with the early stages of designing and developing a technology, rather than with its effects, while this project aims to encompass both aspects.

10.2 Appendix B - Healthcare in the UK

In the UK the vast majority of healthcare is delivered by the National Health Service (NHS). The private sector, funded by private insurance schemas, delivers only approximately 7% of care. Nevertheless, this does not mean that healthcare in the UK is delivered largely by one organisation. The NHS is not a homogeneous organisation or even a multi-divisional organisation. Instead, it can be perceived as a collection of interdependent sectors (Atkinson, et al., 2001). The care delivery sectors are primary care, community services, acute district and teaching hospitals (forming secondary care and tertiary care). The overwhelming majority of the population is registered with a general practitioner (GP) who deals with most (90% according to Atkinson (2001)) health problems and many social problems, and acts as a gatekeeper to secondary services. Thus the access to specialist care is only through a referral from a GP or accident and emergency services (A&E). Although healthcare is available to everyone and is (with some limitations) free at the point of service, some GP practices are seldom open in the evenings making it difficult for the working population to seek advice outside office hours. In some cases appointments have to be made in advance of a week or two. Waiting times for hospital admissions, particularly for routine, non-urgent operations are much longer, making it a single most contentious issue engrossing the NHS.

The NHS is funded through National Insurance, a form of income tax that is set aside for health and social services. Nevertheless, de facto monies come from the Treasury and the actual figures are annually negotiated with the Department of Health. The issue of funds for the NHS is highly politicised. Despite the popularity of the NHS with the general public, the health service seems to be chronically under funded. Recently the Labour government promised large increases in monies available (DOH, 2000). Nevertheless, money alone will not solve the problem. This is one of the reasons why over the past twenty years, successive governments have repeatedly restructured the NHS, and recently taken an active interest in the application of new technologies, like telehealth.

The healthcare domain is not easy to restructure and reform. This is partly due to a great number of organisations and groups that have a stake in it. Atkinson, et al. (2001) list different Trusts, e.g. secondary care Trusts or Primary Care Groups and Trusts, District and Regional Health authorities, the NHS Executive, the Department of Health (DOH), the Treasury and the Government, local government, social services as well as the communities that use the services, and the UK population as a whole. The different sectors of the NHS enjoy a variety of legal, formal and informal powers and capacities to direct or influence each other. In addition, within the NHS there are different professional groups that often have their own distinct identities and agendas. These include doctors (within different specialities), nurses, professions allied to medicine, managers and support services. Their interests are represented by Royal Colleges and the British Medical Association. Casting the net wider, we could include in the stakeholder list sections of the media, the multinational pharmaceutical, the medical equipment and ICT supplier industries and medical laboratories, not forgetting private health providers, like BUPA. Ultimately it is impossible to draw a complete list. And such a list would always be changing, as according to Pouloudi and Whitley's (1997) principle 1 stakeholders depend on the specific context and time frame. Furthermore, such a list should be seen as a network, with all stakeholders interconnected, rather than a collection of one-to-one relationships. This is in agreement with principle 2 stating that stakeholders cannot be viewed in isolation. The third principle – the position of each stakeholder may change over time – is manifested in the healthcare sector in the UK. It could be argued that the Conservative government initiated reforms, which aimed at changing the balance of power.

The introduction of the internal market, i.e. the split between purchasers and providers of care (DOH, 1989) was perhaps the most significant reform, that altered the established power basis. Primary care practitioners were given the power to become fundholding practices, with allocated budgets to purchase a limited list of services from provider Trusts. The internal market reforms also brought about shifts in power within the secondary and tertiary care. Since the 1980s managers were given power to control budgets, e.g. of a hospital. Although not as influential as clinicians they have accrued more power as the NHS in general has adopted a managerialist ethos (Atkinson, et al., 2001; Farbey, et al., 1999). Nevertheless, the clinicians, the Royal Colleges and British

Medical Association can use direct appeals to (usually supporting) public as a leverage in their struggles with the government and healthcare institutions.

The government's role is changing as well. The government continues to influence the running of health services through legislation, directives issued by the NHS Executive and the allocation of funds. Yet, its role changes rather more ambiguously and subtly. Thus on one hand the government is promising more decentralisation and diffusion of power to regions, on the other hand it hopes to enforce national standards and frameworks, e.g. through National Institute for Clinical Excellence (NICE) (Klein and Dixon, 2000)

The whole population are stakeholders as well, having dual role of paymasters (financing the NHS through the National Insurance) and receivers either of care (as patients) or health information (as citizens). In the last decade, patients were given a limited set of rights, e.g. through the Data Protection Act (1984 and 1998) and the Access to Health Records Act and the Patient's Charter. Thus patients now have an access to complaint procedures, and are promised certain level of access and information about quality of services. Nevertheless, patients do not have a powerful voice and medical organisations are claiming to speak for them (e.g. when opposing government's initiatives).

10.3 Appendix C - ICTs in the UK's healthcare sector

Currently general practices have a very high level of computerisation relative to other parts of the health service. Around 80% or 90% of general practitioners are computerised, a rise from 10 per cent in 1987 (Mackintosh and Shakespeare 1995). Initially computers were mainly used for office support, but with time computerised medical records were introduced. Yet these systems were largely stand-alone and initially there were no common standards regarding hardware or software. A similar situation seems to prevail in secondary care. A survey published by the Information Management Group in 1993 covering 95% of acute hospitals showed that most hospitals had yet to implement integrated information systems, although substantial investments in stand-alone systems have been made in the majority of hospitals (almost 100% of hospitals use patient administration system).

However the process of integration is progressing, not only within particular surgeries or hospitals but also between different organisations. A national network (Healthlink) for exchanging administrative information between GPs and Family Health Service Authorities has been operating since 1991. In 1993 the NHS-wide Networking programme - NHSnet - was set up to provide a national NHS network capable of supporting all clinical needs (including telehealth applications). Telehealth was specifically included within the original request for proposals to deliver this network (Darkins and Cary, 2000). Now, that NHSnet is in place any NHS organisation, site or GP practice, as well as some third parties (under special arrangement) can connect to it (subject to meeting requirements of the NHSnet Code of Connection). The latest figures show that 93% of NHS Trusts, 97% of NHS Health Authorities and 30% of computerised general practices are connected to NHSnet (Grindrod, 2000). Connection methods range from ISDN dial-up for most general practices, to 2MB fixed links for larger Trusts. Over 100 third party (mainly commercial) suppliers provide services, applications and support to NHS users via NHSnet. These figures show that large organisations have access to NHSnet. However the pace of adoption and the range of applications used have been more limited than the government predicted. The network has largely failed to deliver clinical rather than managerial benefits. The practices, if at all connected to it, use it mainly for administrative and purchasing purposes, not for exchanging patient

information (Pouloudi, 1999). Furthermore, many organisations have found it extremely difficult to comply with stringent security requirements. These were necessary because of the concerns regarding the confidentiality of medical records, particularly strongly expressed by the influential British Medical Association (BMA) (Darkins and Cary, 2000; Introna and Pouloudi, 1999). Nevertheless, as our research in a primary care setting suggests, the ideas behind NHSnet have been well received although particular implementation strategies have been hotly disputed (Dabrowska, 1999).

NHSnet is not the only example of how problematic the implementation of ICTs in healthcare can be. Past strategic initiatives, such as the National Resource Management Programme, the London Ambulance Service and the Winchester DHA system, have all encountered many problems, that in some cases led to abandonment of the projects (e.g. this happened with the London Ambulance project, although recently a new system has been implemented) (Fitzgerald, et al., 2000) These 'failures' may have re-enforced mistrust or indifference of medical professionals towards information technologies and systems. Also, they have pushed the government to adopt a more cautious attitude towards new information technology initiatives that advocates rigorous, perhaps even too bureaucratic, procurement process.

10.4 Appendix D - Interview list and sample questions

List of people interviewed (people's names have been removed to preserve their anonymity)

Organisation	Name	Job Title	Date
Lambeth Southwark and Lewisham Health Authority , Information Department		Associate Director, Information Systems	11/11/98 and 26/04/99
Tavistock Institute (Seahorse project)		Researcher	02/09/98
London Lighthouse (Seahorse project)		Manager	30/03/99 telephone conversation
BT Laboratories		Telematics Group Leader	02/10/98
CHIME at UCL		Lecturer in Clinical Decision Support and Telemedicine	19/03/99
Royal Free Hospital and University College Medical School Department of Primary Care and Population Sciences		Senior Research Fellow (Telemedicine)	21/04/99
Institute Health Management Services (IHMS) (Telemedicine and Telecare Programme)		Consultant	07/04/99 follow up talk (phone) 06/06/00
IHMS (Telemedicine and Telecare Programme)		Consultant	07/04/99
NHS Executive, Telemedicine Policy Team			04/05/99
UMDS (now part of SLaM)		Psychiatrist	18/01/99
Lewisham and Guy's Mental Health Trust (now SLaM)		Corporate Development Manager	17/05/99
SLaM		Consultant & Senior Lecturer in Old Age Psychiatry	06/06/00
SLaM		Borough Director for Lewisham	12/06/00
SLaM		Service Development Manager	12/06/00
SLaM		Head of IT	10/08/00
St Thomas' hospital		Clinical Development Manager	06/05/99
St Thomas' hospital		IT Strategy Manager	06/05/99
St Thomas' hospital		IT Consultant and Telemedicine Manager	30/7/99
St Thomas' hospital			25/08/99 Telephone conversation
St Thomas' hospital		Corporate Department -	14/12/99

		Telemedicine Manager	
Deptford Market Women & Children's Centre		Senior nurse (gynaecology)	16/08/99
Grove Medical Centre (Telepsychiatry project)		GP	02/05/99
Lewisham Local Authority, Lewisham Town Hall, Catford SE6 4RU		Head of IS & Strategy, Strategic Management Unit	08/04/99
Lewisham Local Authority		Social Services	06/05/99
Lewisham Local Authority		Group Manager Commissioning and Care Management	17/03/00
Lewisham Local Authority		Group Manager, Information Services	03/08/00
Lewisham Local Authority		HIV Training Officer	15/11/00
Community Health – South London NHS Trust		Borough Director for Lewisham	14/06/00
University Hospital Lewisham		IT Manager	23/06/00
INTRANET PROJECT:			
LSLHA		Associate Director, Information Systems	26/04/99
Primary Care Skills Centre, United Medical and Dental Schools of Guy's and St Thomas's			29/04/99 Telephone conversation
Practices in North Lambeth Primary Care Group (London):			
Practice A		Practice Manager	27/04/99
Practice B		Practice Manager	27/04/99 Interview over the telephone
Practice C		GP	28/04/99
Practice D		Data Inputter	28/04/99
Practice E		Practice Manager	05/05/99
Practice F		Assistant Practice Manger	05/05/99
Practice G		Primary Care Manager	05/05/99
Practice H		Assistant Practice Manger	07/05/99
Practice I		Administrative Assistant	07/05/99
Practice J		Practice Manager	09/05/99 Interview over the telephone
Clinic K		GP	09/05/99 Interview over the telephone
Practice L		GP	Completed a questionnaire

Meetings attended

SEAHORSE 11 - Partner's meeting 28-29 January 1999, The Tavistock Institute, London

'The Connected Community' Forum 27/02/99, Lewisham Council (Town Hall)

'Exploring the potential for telemedicine and telecare to improve the healthcare provided to patients for the Grove Medical Centre in Deptford' – 16/04/99, The Grove Medical Centre

'Making Lewisham a Healthier Place to Live, Work or Learn' Forum 13/11/99, Lewisham College

Notes on the interviews

The interview agenda varied according to the person interviewed. Usually, the participants were asked questions about the project (its aims, duration, sources of funding, stakeholders, evaluation practices, problems encountered and results). They were also invited to discuss the concepts of empowerment and social exclusion and to relate them to the project's aims, as well as to comment on the role of ICTs in healthcare. The majority of the interviews were semi-structured but many participants, after answering the initial questions, gave long accounts of their experiences. The participants requested to be referred to in the thesis by their job titles, except for Chris Long who wanted to be named, to emphasise the fact that the views he voiced were his own not the organisation he represents.

The following section includes sample questions presented to one of the interviewees. This is followed by a questionnaire developed for the evaluation of the Intranet project (TPP). This questionnaire was sent to one GP, but it also formed the basis for the interviews with other stakeholders in the North Lambeth Primary Care Group. These stakeholders, whenever possible, were also asked to comment on telehealth, and more generally, on the application of ICTs in healthcare.

Questions for Chris Long from Social Services, Laurence House, Lewisham Local Authority

- What are the project's aims?
- How and when did you (the LA) get involved in the project? Who else in Lewisham was involved?

- What was your and the council's role in the project?
- Was it fully sponsored by EC?
- Has the project finished now?
- Would you say it is a 'successful' project? In what way? Why? What did it achieve?
- Was the project evaluated? How? Who evaluated it?
- Is the web site popular? Who and in what way uses it? Do you collect/receive any feedback?
- How was the work on the project organised?
- To what extent did different sites of the project communicate and co-operate with each other?
- Do you feel that you (or the LA) were sufficiently involved in decision making?
- Who prepared the deliverables? Can I have them?
- Were the 'users' involved at any point? In what way?

(How exactly were the users involved in the system development? The report from Seahorse I states that users involvement should not be limited to needs specification but they should become 'co-architects in a process of building systems that will be shaped by and contain their expertise and skills'. Does this include representatives of all user groups?)

- What problems were encountered during the project?
- What would you have done differently?
- What is so significant about the project? Why?
- Was this project ever discussed in terms of empowering users and/or combating social exclusion?
- How would you define user empowerment? To what extent, if at all, users might be empowered by the system (or rather in what way the system might facilitate their empowerment)? Do you think that, within the UK context, they might be able to negotiate different types of treatment and influence the way healthcare is delivered?
- What role do you envisage for ICTs in healthcare? Do you consider ICTs as having a potential to change the way different services are delivered (including health and social care)? What advantages and problems such change may bring, particularly in the area of health and social care?

Questionnaire - Evaluating the use of the Intranet within General Practices

{In the original questionnaire there were spaces left for the respondents to make comments – these have been omitted in this version}

Please answer all the questions that you feel are relevant to you. You are encouraged to comment and include additional information. The questionnaire is divided into 3 sections. If you have never used any of the applications offered on the Intranet please answer questions from sections 1 and 2. If you have used the Intranet (Internet and e-mail) before please ignore section 2 and complete sections 1 and 3.

Section 1

Q1: About the practice:

1a How many people are employed by the practice?
1b How many computers have you got in the practice?
1c Do you use any computerised information systems in your practice, e.g. to keep record of patients?

Q2: About the respondent:

Q2.1 *What are the responsibilities?*

2a What is your job description? (GP, practice manager, etc).
2b How long for have you worked in the practice?
2c Have you received training on how to use the Intranet (including e-mail)?
2d Have you got any previous experience with computers?
2e How would you rate your understanding of the capabilities of the system? [Please tick]

Insufficient	Good
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Insufficient Good
Poor Very good
Sufficient

Q 3: Have you used e-mail before?

Have you used the Internet (LSLHA Intranet) before?

If you have answered Yes to both questions go to section 3, if you have answered NO to both questions go to section 2 (ignore section 3). Otherwise please complete sections 2 and 3.

Section 2

Please specify why you have not used the Intranet (Internet or e-mail). If you have more than one reason please list them all. If you have used the Intranet once and then decided not to use again please specify why. If necessary, please continue on a blank piece of paper.

Section 3

Q4: What applications do you use?

Q5: For what purpose do you use them?

Q6: How often do you use

e-mail	LSLHA web-site
--------	----------------

At least once a day	At least once a day
At least once a week but not every day	At least once a week but not every day
Less than once a week but more than once a month	Less than once a week but more than once a month
Once a month or less	Once a month or less
Never	Never

Q7: Do you find the Intranet (Internet and e-mail) easy to use? Which part or the feature do you find particularly easy/difficult to use and why?

Q8: Information provided over the Intranet (LSLHA web site)

Is the information provided accurate and up-to-date?.

Is it well presented? Is the format clear?

Does the content meet your needs?

Q9: Reliability

Would you rate Intranet technology as:

Very reliable	Average	Very unreliable
Reliable	Not reliable	

Q10: Have you experienced any problems with the technology?

Q11: How would you rate your overall satisfaction with:

E-mail	LSLHA Web site
Very satisfied	Very satisfied
Satisfied	Satisfied
Neither satisfied or unsatisfied	Neither satisfied or unsatisfied
Not very satisfied	Not very satisfied
Definitely not satisfied	Definitely not satisfied

Q12 Benefits of the system:

12a Do you consider the Intranet and the applications it provides beneficial to you and the practice?

12b In what way does it benefits you and the practice?

12c What application/facility do you consider particularly useful? (Not necessarily the one which is used most.)

Q13: Changes to work practices

13a Do the applications provided via the Intranet fit in with your working practices?

13b Did you change your working practices since you had started using the Intranet?

13c Does having e-mail have any impact on your communication patterns? Do you communicate more or less often with other organisations and practices?

Q14: Have you got any concerns regarding the Intranet?

Q 15: Future use of the Intranet

15a Would you be happy to continue using the Intranet in the future?

If not, please specify why

15b If it was possible would you use the Intranet for other tasks, e.g. electronic referrals?

15c What improvements and new facilities would you suggest (e.g. a referral system, better-structured information, better search facilities, etc..)?

Q16: Would you prefer to receive more information via email rather than in printed format?

Specifically, would you prefer to receive the Health Authority's newsletters in printed format or electronically?

10.5 Appendix E – List of publications produced in the course of the PhD

Journal Articles:

Cornford, T. & Klecun-Dabrowska, E. (2001) Ethical Perspectives in Evaluation of Telehealth *Cambridge Quarterly of Healthcare Ethics, special issue on new information technologies in healthcare*, 10(2), 161-169.

Klecun-Dabrowska, E. & Cornford, T. (2000) Telehealth acquires meanings: information and communication technologies within health policy. *Information Systems Journal*, 10, 41-63.

Klecun-Dabrowska, E. & Cornford, T. An Interpretative evaluation of a health care intranet. *International Journal of Healthcare Technology and Management (IJHTM)* (under revision).

Conferences:

Refereed:

Klecun-Dabrowska, E. & Cornford, T. (1998) Policy and telehealth: social implications of telehealth and telecare technologies. *Proceedings of the Fourth Americas Conference on Information Systems, Baltimore, Maryland 14-16 August 1998*.

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Non-refereed:

Klecun-Dabrowska, E. (1999) The evaluation of the deployment of Intranet facilities within primary care. *Proceedings of the Second Oxford Clinical Intranet and Internet Conference, Oxford, 26 May 1999*.

Cornford, T. & Klecun-Dabrowska, E. (1999) Evaluating telehealth: the search for an ethical perspective. *Proceedings of the Fourth Conference in the ETICOMP series, Rome, Italy 6-8 August 1999*.

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