Research design and methodology

This investigation was concerned generally to see how new technologies come into the everyday lives of different people, and how In turn these people engage with these offerings: the way they are appropriated, Including adoption, learning and struggling, but also other strategies for non-adoption, or arms length appropriation. Particular issues include the influence of knowledge, use and resource on CIT appropriation within and between domains of the life-space, addressing both opportunities for crossover and reinforcement of boundaries.

More broadly it asked how the appropriation of technologies, such as the PC, the mobile phone and the Internet Is proceeding now that certain technical elements and skills have left the domain of the early adopter. The study started from three motivations: 1 . To study everyday use and context of technology in its broad rather than narrow definition, covering the whole of the life space. This sought to overcome the limitations of previous research that focuses rather exclusively on the home, or work, or clubs only, and generally neglects crossovers, (except when work comes in to the home In the case of tell-work).

It is also sought to explore how the computer and some other technologies cross over between domains, and the supposed convergence of television, computer and telecommunications technologies. 2. A ' person centered' approach to living with technology, rather than an ; artifact centered' approach. With so many products being developed, rather than follow the uptake of a specific selected technology, which may fail, or succeed, this study looks at what is actually appropriated or engaged with by the

respondents in different circumstances during a period of intense technological change. 3.

A esoterically approach to appropriation, based on three levels. Rather than being artifact or system centered, the study recognizes the socio-cultural nature of innovation in the ' information society. It seeks to understand: a) The biographies and appropriation of things or artifacts themselves. B) The biography and appropriation and reinvention of proposed uses, programmer and visions that accompany artifacts. Often a particular technology may fail, but it is only a step on the way to adoption and development of a class of services such as home shopping, or the mobile office, computers in education.

In an age of multiple competing technologies and service providers, the class of service is another key level of analysis. Reinvention of services and changes in attitude often occurs ahead of c) A third level is that of issues on the macro scale, but affect individuals and communities – issues such as privacy, reliance on technology, the effect on the news media, on national identity, the idea of progress through technology etc. This includes " tales of technological utopianism" (Killing and S. , 1988) and dispensation, as well as more concrete issues such as copyright.

These may be harder to grasp, but hey are central to the idea of the information society, are the subject of extensive academic business and policy work, and are debates that are accessible to everyone. They are also represented by particular products – such as government legislation, which is in its turn ' consumed' in its own way. 3. 1. 1 Research Questions From these

general aims, a number of specific research questions and issues emerged and were further refined in the course of developing the research design.

The main questions are summarized below: 1 . What are the crossovers between work and home and other domains of life in the experience and appropriation of new Sits? How does technology help break down boundaries, or used to reinforce them? 2. What are the issues that make adoption and use of Sits difficult, such at they create ambivalence between benefits and problems, and need practical and social resources to cope with them 3. How important is the local social network as resource and factor in the diffusion of technologies, and the appropriation process? This question was particularly interesting since some of the technologies in question are ' network technologies, and their use depends on having other people to use them with). . Why do people not adopt new Sits that are becoming popular all around them, and what does it mean to be a non-adopter? Can we also ask how people resist technical change? These questions throw light on the greater issue of whether we can question an individualistic consumption and ownership model. Two secondary questions that motivated the research, but are not examined in this thesis in details are: 1 .

How are people experiencing the convergence of technologies, industries etc, and engaging with the industry driven development of new classes of services and uses. Are there types of classes of uses developed by users, or parts of everyday life that are not part of the industry and policy agenda. How are, and may people respond to the key services that are being developed for new technical platforms, and what applications and services appear to be proving most relevant and popular? 2.

How do the academic and policy issues around the innovation and appropriation of new Sits form part of the experience of people not necessarily engaged with them directly? How do these issues become apparent and how do people engage with them? In these questions issues of personal, social, functional and technical ' context' is be perspective on one hand – the way that technologies, uses, concepts and roles are constructed in context and in ' use', but on the other hand stresses the influence of the characteristics of the technology, and in this case information and communications, in shaping the meanings and context.

While the meanings of technologies may be shaped by the broader social and cultural context, and discourse, the technology itself has a powerful reverse effect. Most studies of technology and innovations have found the same broad trends in use ND adoption of Sits, with age, gender, money and occupation being important predictors of attitudes, use and rate of adoption. Assumptions are made about the difference between the way men and women, or the young and the old, approach technology, and are addressed by industry.

However as Sits become less technological', and digital computing technology becomes more and more ubiquitous, I wanted to take a critical stance, not looking for stereotypes but trying to see from ' bottom up' observation how and why there may be different approaches to new CIT between people, based not only on demographics, but also on a range of other influencing factors. Do changes in employment, education and expectations alongside changes in technology challenge our stereotypes of women and men, or the old and the young?

In order to tackle this sort of issue I needed to study a number of different milieu, with a range of people of various ages, occupations, resources, attitudes to technology etc, in order to get a range of different examples to compare and contrast. However the number of people I could interview would be limited by my time and the type of research method I chose. 3. 2 Designing the Field Work This research design builds on research done into use of technology and media in the home in the various other spaces using a qualitative research methods .

This discussion of the methodology attempts to present some of the specific tools and experiences used to inform the design of the research and the development of an interpretation. 3. 2. 1 Studying the Process of Adoption and Domestication Some studies of technology are aimed at building up a picture of the use of technologies in a social system at a particular time in a generally stable situation. Others investigate the process of domestication from the moment a technology is adopted. The processes leading up to adoption are generally investigated in hindsight.

Diffusion studies tend to look in hindsight at the diffusion of an innovation though a community, following one particular technology. Adoption studies, even those concentrating on word-of-mouth, and personal influence, do not look closely at the actual process of interactions in details, and seldom use qualitative research methods. What natural encounters there were with technologies, why and how these occurred, and how people engaged not only with technologies, but with ideas about them too.

I anted to see how people linked innovations into their existing cultural and technical world, how different technologies were interpreted, and how they were appropriated. I wanted to uncover this process and seek to understand in the context of the everyday activities, relationships, background and events of the respondent. In particular, I wanted to see how processes within the social network played a role in the way people encountered and coped with innovations. I developed a method of research, many elements of which I were reinforced by observations from number of researchers from different disciplines.

Rogers (Rogers and Shoemaker, 1971) suggests that diffusion research needs to be much more procrastinated than is general. It should be qualitative, and follow sequences of events over time, to try and get closer to understanding the actually adoption process. He also suggests that instead of focusing on single innovations, we should see them as part of clusters, with adoption of one linked to others, especially when boundaries between technologies is not very clear. These clusters or complexes need to be investigated in an evolutionary sequence.

He suggests we have to look for how Hess links are made by potential adopters, and not rely on the classification of experts. In particular, he suggest not falling for the empty vessel fallacy, assuming that potential adopters do already have the knowledge and skills (" indigenous knowledge systems") to evaluate and use innovations relevant to their lives. In fact this is the approach of sociology of technology and of consumption – to understand how interpretations of an innovation are arrived at in the culture in which it emerges or is introduced.

Developing research out of the consumer research paradigm, Mice and Fourier Mice and Fourier, 1995) criticism the lack of research that focuses on the on the context of consumption, the pre- and post-adoption aspects of consumption and the role of symbolic. They developed a methodology using phenomenological interviews to give insight into emotional responses, as well as rational explanations given in retrospective interviewing. In particular, they recommend multi-method approaches used in longitudinal inquiries in natural settings (Mice and Fourier, 1998).

Mores, who did several details studies of the domestication of radio and satellite TV suggest hat future research should look to a range of Sits, not Just media technologies, and look outside the home as well as inside (Mores, 1996). Some have started to do this sort of research, such as Frisson and Punier (1998), who study the role of technologies in the lives of busy people. Haddam, who has conducted much research in this field, makes a number of people are appropriating the Internet (Haddam and Hartman, 1997).

These include what the phenomenon symbolizes to different people, including concerns that may make them wary; how they first encounter the Internet, what purport they have and any problems they face; how it is perceived and maybe used in relation to other technologies and media; and where it can possibly fit into the time structures of households and individuals. (Haddam and Hartman, 1997). Technologies must not only be put in the context of other technologies and the social context, but in terms of the activities that people do to make them relevant and meaningful.

It might be more interesting to go beyond what people actually say about the idea of electronic commerce to consider whether current purchasing practices might favor consumption via the Internet. For example, if a particular household only buys goods and services from offices and shops and pays in cash, not even using a credit card, then arguably they are far removed from electronic commerce over the Internet – such a development would be a major new innovation for them. Whereas for someone already tell-shopping by some means, doing so over the Internet is a variation or extension of what is familiar to them. Haddam and Hartman, 1997). In studying a long term process of adoption, obviously it is important to find out what people actually do in their everyday activities, to understand how particular products, such as home shopping services could be relevant, and how their adoption may correspond to existing practices, or represent radical changes in activities. In some ways we are trying to find out what people might ' need', not in terms of specific solutions, but as " an invisible phenomena that can be deduced from the structure of everyday life" (Des]ex., Tapeline et al. , 1997, p. 253). . 2. 2 Focusing on the Life-Space and Technology Venerates studied the appropriation of computers in the home and suggests that esoterically studies have to " attempt to capture the structure and dynamics of imputer adoption and use in the home, by looking at the interaction between the social space in which the family behavior occurs and the technological space in which technologies are embedded and used. " (Venerates, 1996) This is similar to much of the domestication research that tries to understand the structure of the moral economy in the home (Siltstone, Hirsch et al. 1992; Siltstone and Hartman, 1998). This involves looking at symbolic and practical structures of the home in terms of

time, space, activities, roles, power relations, rules, and use of technologies. Studies of the workplace and interpretation take a similar view, looking to understand not only the formal organization of work, but also the many informal relationships and activities. The aim is to build a model from the ' bottom up' model of " how the user will derive value from in light of all their experiences across the life-spaces.

The intention of this study was to link the various domains of life, to study the ' moral economy of both home and the work place, but also through relationships and activities that cross boundaries. Into this study of the greater life-space I needed to study how technologies arrive in this space and how they are domesticated. To do this I had to look at all the domains of activity and types of activity that made up people's lives, and could be affected by new Sits. The following figure gives some of the possible areas of application of technology. 3. 2. Gaining Access One problem is to gain access to respondents, and the problems of being able to study them, and gain some familiarity with their world, or share their ' reality. Social science methodologies propose many different ways in which this can be achieved, and guidance on the extent to which involvement in a respondent's life world is necessary to for particular descriptive or analytic ends. Practical problems include getting people to speak to the researcher at all, then getting them to be open, co- operative, and sincere in discussing the aspects of their lives that interest the researcher.

More fundamental for research methodology is the reliance on the personal descriptions of the respondents, who may either intentionally conceal or mislead the researcher, or unintentionally mislead them. In studying

someone's life world, it is unlikely that the respondent will be able to comprehensively and thoroughly describe not only their opinions and thoughts, but the details of everyday activities and relationships, and the context in which they conduct them, especially in the space of a relatively short interview.

Participant observation is a method that tries to surmount these obstacles, but at the expense of huge effort by the researcher, and can only be carried out in a situation where the researcher can actually live or work within a small group over an extended period of time. Since I intended to look at a number of groups, and across the social network of one particular member, this type of methodology is impossible. What is more, gaining access to the work place or social clubs may be possible, but living in private homes is very difficult.

Only a few researchers have tried this (for example, James Lull in order to examine media use (Lull, 1990)). I wanted to study the way people encountered new technologies over a period of months or even years, when in fact key events may only occur very infrequently, so this did not make much sense. Other research methods used in media studies include asking the participants to keep diaries. This again is does not get any closer if especially if salient events occur very infrequently and outside the period of research interaction.

I wanted to interview not only users of new technology for whom the technology had a direct personal relevance, but also non-users for whom it did not. I expected that during the process of research many of the

respondents would be likely to encounter and form opinions on new Sits and have some engagement with the process of innovation and diffusion, however unwillingly. I had to find a method that would enable me to gain access to people who did not have any interest in the subject of research- new media technologies, and who would be difficult to contact or engage with though a research method based on current users.

Especially for these people I had to develop a number of tactics to bring out the discussion of new Sits, and to build an understanding of each person's life-world and the way that they encountered and engaged with CIT innovations. 3. 3 Initial Concept of Research Method Instead of selecting a range of established social groups, say a workplace, a club, a nuclear family, a group of friends, a shopping centre, I decided from the outset to use an Informer approach, taking as my point of entry an individual who would to some extent participate in the research as a co-researcher, and provide entry into their social World'.

Blamer suggest that the researcher " seek participants in the sphere of life who are who are acute observers and who are well informed"(Blamer, 1969, p. 41). The research design then involved mapping the various other people that these respondents engaged with (both in relation to specific uses of Sits and more generally) in different domains of their life sphere. I would then conduct interviews with those they work with, their family, their friends, and ask them to report on their experiences of traditional and new media and communication technologies. The

Informant, and the others they identified, would not be selected on the basis that they personally use or buy any particular technology – given the symmetry principle that non-use is Just as interesting as use. The crucial point is that it is the Informant's social network and individuals within it that are being studied, not only the key Informants themselves. Whilst the selection of the initial informants would obviously have an important influence over research outcomes, any such shaping by the researcher would then be diffused as the interviews moved out to the networks identified by the Informants.

Although such an approach does not eliminate the bias inherent in selection of respondents this kind of snowballing method does open up the range of people interviewed. The involvement of the Informant was conceived as being important for practical and theoretical reasons as well – an informant will have to be engaged as a co-researcher who will provide access for the researcher to their social groups.

I did not presume that the Informant's position would be UN-problematic, but anticipated that there would be many difficulties with their relationship to the research, and their role in arming the opinions of their groups. In fact the informant role as a point of passage points of passage in real life. By interviewing a number of people who shared similar experiences and knew each other, or knew a common contact this method would also enable me to compare the experience and interpretations the respondents had of particular events, shared spaces, relationships and each other.

This would make the study satisfy some of the basic demands of an ethnographic study. The aim was to conduct this study on a longitudinal basis – with the idea of repeating he fieldwork after maybe 1 year, by which time I expected that there would be appreciable changes in the discourses and use of technology in society in general and in the groups being studied. Interviews were conducted on a semi-structured basis with the help of a schedule of questions and issues (included in the Appendix).

I also explored the use of other devices to prompt responses in a less structured way. Having carried out a ' dummy run' with these research instruments on friends and fellow students, I then undertook an initial ' pilot study with the first group of interviewees. Since I was tempting an experimental and rather unstructured research design, which potentially threw up further problems, for example in data analysis, the pilot study provided an important opportunity for assessing and refining the research design. . 3. 1 Designing the interviews I was not trying to trace the network of influences, but rather study a group of people who interact at home, work and in other social situations, and compare their different approaches and study how they influence each others, and how the influence of third parties is passed on and ' negotiated' in the group. There is no need to do a complete outwork analysis for this, but in putting together the sample, an informants ego (personal) network is to be the basis for selection.

I had to design an interview guide that would investigate the individual's background, their everyday activities, major and minor events in their lives and their relationships with others. This would include information on activities that are currently the target of the development of Sits, such as

workplace activities, shopping, banking, media, entertainment, communications and information use. I mapped out the range of areas of life that I might have come up in the following Table. I would then focus on the knowledge and use of Sits and how they were engaging with them.

Since I was investigating the adoption process, I also tried to find out how they went about adopting new products, covering information seeking, advice taking, buying, learning etc, for what ever product. This included the importance of different personal relationships in making decisions, finding out information, and forming opinions, compared with reliance on ' public sources' such as shops and media. I also asked about broader issues to do with the development of technology and its impact on society, attitudes towards change, and if they had knowledge of in policy issues involved in the ' information society. P. The main topics covered are in the table. Background, life themes and history Education background Family background Life history Important relationships Resources Everyday activities and recent events Events Life changes Work activities Domestic life 3 Shopping practices Information, Media and Communication Information use and attitude Media use Work communication Friends and family communication CIT use and knowledge CIT use CIT adoption Social Networks use of Sits CIT attitudes

Engagement with Sits Knowledge about Sits Problems with technology Knowledge of implementation of Sits in government and industry Policy issues on Sits Table 1 Topics covered in interview schedule 3. 3. 2 Primary analysis of success of first pilot interviews, and comments for proceeding with concluding research on pilot. The initial respondents were found

through an acquaintance, a primary school teacher who agreed to help. She named a colleague and her family as her closest network, whom she shared most things.

The details are given in the next chapter. The first set of interviews was conducted in January 1997. All eight interviews were transcribed. The interviews explored the life of the participant – looking at domestic, social, employment, and economic situation, and some life history. It then looked at a number of everyday activities drawn from the original ' plan for looking' at new media particular activities, and attitudes towards those activities, the social relations involved, and included instances of specific technologies.

The questioning aimed to find out what the important activities, preoccupations and relationships are in the participants' lives, and their attitudes and practices around them. Then more particular questions were asked about technology in everyday life, based on the earlier remarks of the participant, and introducing new themes. There was not an attempt to get them to define technology, or use my vague definition, but technologies were seen in the context of particular practices, activities and expectations. I was happy with the results of the first interviews.

They laid considerable groundwork for asking about the changes in use and expectations about technologies in context over the last year. However I made changes to the question schedule, costly as a result of how I actually conducted the interviews, but also to reinforce some of the background material. For example, I needed to bring out more details of the relationships between the participants, and ask their opinions on the other's attitudes to

information, technologies and the other activities and interests identified in the research plan.

I also asked more about significant others that I was not interviewing, who lay outside the social circle of the principal informant. 3. 3. 3 Finding and engaging respondents I found the rest of the respondents by focusing on finding principal informants with pacific backgrounds that I thought would be interesting in the light of particular interpretations of the technology: these included computer entrepreneurs, artists, senior business managers, students and unemployed teenagers.

I also wanted informants who would be interested in the topic and agree to help me persuade their family, colleagues and friends to help me. Through word of mouth and email- lists and a local cybercafé I found three informants who put me in touch with their personal networks. Details of the respondents are given in the next chapter in mammary and in the Appendix in much fuller detail.