What’s the Use?

Internet and Information Behavior in Everyday Life

Anders Hektor
In the Faculty of Arts and Sciences at Linköping University research is pursued and research training given within six broad problem areas known as themes, in Swedish tema. These are: Child Studies, Gender Studies, Health and Society, Communication Studies, Technology and Social Change and Water and Environmental Studies. Each tema publishes its own series of scientific reports, but they also publish jointly the series Linköping Studies in Arts and Science.

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For Ulrika
Doing research is very much about imposing order, and it will be noticed throughout this book that sorting facts and events into boxes and categories is very much to my liking. But how can I describe in an orderly way the many different ways that the many different people that I have come in contact with over these years have meant to me?

I would like to forward my gratitude to all the people at the Department Technology and Social Change (tema T), Linköping University, where I have been a PhD-student since 1995. The importance of that wonderful multidisciplinary environment cannot be emphasized enough. Anyone considering tema T as a place for studies or work should know that I highly recommend it. You’ll find sparks and fires of engagement, intelligent fellows and an intellectual environment that is larger than the sum of its contributors. All the people that I have met there over the years have part in this book, whether they know it or not (and whether they like it or not). Thanks to all of you.

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The responsibility for this final product is mine alone. Any errors, mistakes, lapses and inconsistencies are from my doing.

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Nacka, September 2001

Anders Hektor
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1 A Frame of Reference

1.1 Introduction

With the internet, a computer is a door rather than a box and the worlds it is a door into—Barney fan sites, auctions of excess steel, political dissidence, chemistry homework—have to do with the will and interests of the individuals using it, not with the material aspects of the object itself. (Shirky 2001)

Give me a lever long enough and a place to stand and I will move the earth. (Archimedes 287-212 BC)¹

Old habits die hard. Uses of traditional information systems can be expected to prevail, but the Internet adds to the many layers of information systems that are already present in everyday life. This new information system, and a shifting significance of ‘information’ add up to a radical change. But computers and access to the Internet spreads throughout society, permeates the workplaces and homes of many people, and eventually becomes domesticated and a part of everyday life. The computer recedes out of focus and the good use it can bring is what counts in day-to-day activities. Opening the door is more interesting than the box, as it were.

To switch analogy: Archimedes boasted to King Hiero about the feats he could perform with a lever and he made a spectacular demonstration by pulling a warship up ashore. Since then, the principle of the lever has participated in changing the earth, but it has not been moved despite Archimedes’ confident claim. With the Internet as a powerful lever; the computer as an instrumental fulcrum; and earth as all that is

¹ While this quote is very common, Archimedes is more likely to have said something like "Give me a place to stand and I will move the earth." Translated from "ΔΟΣ ΜΟΙ ΠΟΥ ΣΤΩ ΚΑΙ ΚΙΝΩ ΤΗΝ ΓΗΝ". Allegedly a remark of Archimedes and quoted by Pappus of Alexandria. The source for this information is found on the WWW at: <www.mcs.drexel.edu/~crorres/Archimedes/Lever/LeverIntro.html>
familiar to us in everyday life: what leverage does the Internet afford, what powers of the user will it multiply?

In order to make sense of what the significance of this is to everyday life, where some things can be expected to change and some to remain the same, new concepts and categories are called for. The knowledge interest behind the research reported in this book is to what extent the computer and the Internet will continue to be of interest when the novelty wears off. To be able to answer such a question it is necessary to know what the uses of the Internet are; how it is being used in relation to other information systems and what good it serves in people’s lives. For that reason I will study uses of all the layers of information systems and face-to-face interaction in everyday life and give special attention to the new additions in the need for intelligibility.

Don’t we already know this? There is a great deal of research on the diffusion of computers and Internet access, on uses and preferences of Internet applications such as web sites and email, and on social and domestic relations involving the computer. But there are no studies, to my knowledge, of uses of the Internet in everyday life in relation to other information systems that are available. I have searched the literature on ‘information’ looking for a useful way of describing information behavior and habits. I have also studied ten individual cases of different life situations and their uses of information systems in their everyday lives.

The results of this study are twofold: It offers a conceptual framework of information behavior in everyday life that suggests a new direction for socially motivated user research. As examples of applying this framework, it also offer findings of today’s information behavior that have not previously been considered.

1.2 Studying Information Technology and Users: Two Cultures of User Research

Anyone who takes a research interest in the use of information technology quickly discovers that there is a great deal of research going on in many disciplinary fields. Say, “I do user research,” and many researchers from many fields doing a lot of different things will respond “So do I!” and as you start talking, it may well turn out that you have absolutely nothing in common.
From the position of technological research, users have become more and more involved in the research and development (R&D) of information systems and services. Developmental stages of systems design have been described in different ways to denote the move from the engineering conditions of design to the human usage conditions of design (Dahlbom & Mathiassen 1993; Turkle 1995; Mårdsjö 1999). And although users are playing a more central role in the design of information technological devices and services, it is often the role of a guinea pig in an experimental setting. As design work in R&D emphasizes the human condition, it starts with the condition that is easiest to generalize, namely the human as a biological entity. As the understanding of such—broadly speaking—ergonomic issues is growing, it begins to be noticed that the human users are not only biological entities, but also complex social individuals endowed with intentions and preferences and situated in circumstances with an infinite variation of conditions.

From a social science perspective, information technology and its role in social change has been the subject of research that has taken off in several different directions that concern aspects of the computerization of society. Among the relations that this research is struggling to understand is the small-scale relation of man and machine, and the larger scale relation of technology and culture. The ‘user’, understood as man as the maker and user of any technology, has always been present in this research. What has moved parts of this field towards a common ground of user research is the growing concern for the impact of information technology on society.

As technologists and social scientists alike study the same, or similar, issues of use of information technology, these two research traditions meet in what appears to be a common field for user research. Two recent overviews have looked closer at this common ground of research on use of information technology in Sweden (Östlund 2000) and in the USA (Hektor 2000). They both show that to the extent that there is a common field for research it is a fragmented one, divided by the knowledge interests in the design of new technology and that of understanding social processes. While engineers do things, social scientist say things. The imperative for the engineer is design, while that of the social scientist is description and explanation. Occasionally, a divide in user research is revealed that is much like the ‘two cultures’ as explained by C.P. Snow (Snow 1959). A personal observation (that which is shared with other researchers who have attempted sharing
knowledge between engineers and social scientists) is that the one
group subtly or secretly scoffs at the other. The social scientist often
laments the design-oriented user researchers’ lack of contextual abili­
ties and appreciation of social complexity, as well as his or her ten­
dency not to make problematic any aspect of technology. On the other
side of the table, the engineers are taken aback by the kinds of ques­
tions that the social scientists ask, thus creating problems rather than
solving them. With little understanding of technology they are thought
to waste their time on research without relevance to design or any other
practical use. Hopefully, these are exceptions. As the two cultures get
to see that there are things to be learned from the other side of the table
there will be more examples of successful meetings between cultures,
when the problems considered are more important and given more
attention than disciplinary orientation.

There are serious attempts to gather researchers of different back­
grounds to share the interest and problems of user research, but aside
from many interdisciplinary research groups, I can point to only one
institutionalized attempt to gather the field. This attempt has been
labeled “social informatics” and is defined as “the interdisciplinary
study of design, uses and consequences of information technologies
that takes into account their interaction with institutional and cultural
contexts” (Kling 1999). It is an ambitious and admirable project since
there is no other common venue for user research (Hektor 2000).

In addition to the problem of finding a common ground for the two
cultures where both would benefit from the research of the other, there
are also problems that are specific to each of the two cultures. In de­
sign-oriented user research, the advent of the user is fairly new. It used
to be that engineers designed technology from the conditions of the
technology, whereas the human conditions are now being found to be a
better template for the technology since humans are the ones that are
going to use the devices and services that are designed. To that pur­
pose, usability engineers, for example, draw heavily on knowledge
produced by psychologists, neurologists, and cognitive scientists, for
example, knowledge that was not originally gained with the problems
of technical design in mind. It is very good to have an understanding of
technology as something that is going to be used by human beings with
certain ergonomic dispositions, but it is also necessary to understand
that the human being is going to use it in a time and a place in relation
to other activities and to social relations. From a design point of view,
including the user in research may have been motivated by ergonomic
problems and, for that purpose, applicable theory has been readily available. With a more profound understanding of the user, other user-circumstances may not be as clear to the developer of technology and not as readily available to draw upon. Neither is the complexity of real life user-situations easily modeled or possible to study in an experimental setting. For technically motivated user research to get over this hurdle, it will be necessary to work together with user researchers from the other side of the table, and to make use of works from the social sciences. For some time now, design-oriented user research has pursued a simplistic view of the user as a de-contextualized rational agent. When the devices and services hit the streets and are unsuccessfully handled by real life users, the response tends to be that the user is an exception and that his or her behavior will need to be changed. And they are partly right; every user is an exception to such reductionistic views.

1.2.1 Socially Motivated User Research

The problems posed by socially motivated user research are a little bit different. Research on social aspects of uses of information technology has been done both as disciplinary projects, and as multidisciplinary cooperative projects under different labels, e.g. science, technology and society (STS), the social shaping of technology (SST), and the social construction of technology (SCOT). Disregarding macro-oriented research (e.g. the politics and economics of computing or the diffusion of computers in society), which is not in focus of this study, and looking to micro-oriented studies, research has taken place on many different aspects (e.g. on particular technologies of the telephone, mobile telephony, minitel, personal computer, television, Video Cassette Recorder (VCR), and radio), with many different perspectives (e.g. gender issues, household and family issues, and consumer issues), and with several different specific labels (e.g. teleworking, telecommuting, the smart home/-house, tele-shopping or e-commerce, tele-medicine, and virtual communities).

Much of this research has been systems-oriented in the sense that the information technological artifact takes center stage and is viewed as a production technology rather than as a service technology (Dahlbom 2000). Often the computerization of society is described by the number of people that have a computer with Internet access; how many people that make use of certain programs and applications; the power
relations around the artifact within the household; the time spent on using the computer and so forth. When the computer has become part of the routines of everyday life (which, by the way, has also been studied as a domestication process (Silverstone & Hirsh 1992; Silverstone 1994)) the computer is found not to be very interesting to the user any longer. The interests of the users lie less in the manipulation of the computer and more in terms of what kinds of good use they can have of it. The computer and the Internet thus become an information system side by side with other information systems available in everyday life. At that point it becomes more relevant to study the purposes for which people engage in using the computer and the Internet, what problems this use solves, what utilities that are found in the use, what service-aspects that are found to make a difference in peoples lives. Detailed accounts of access and careful descriptions of uses and preferences of singular technologies are not enough to understand the user and their uses of information technology.

1.2.2 Previous Research

The research that is presented in this book can be said to have its point of departure in the socially motivated user research that is outlined above. More specifically, research on the use and users of information technology in a context of everyday life that is relevant for this research consists of two types. One is the process of getting the technology over the threshold to the household, the domestication of the technology that takes place, and the games that evolve around the artifact. For studies of technology in domestic settings a group of British researchers have been doing a lot of research in their national PICT-program (programme of information and communication technologies) that was concluded and reported in 1999 (Dutton 1999). Some program participants were also members of the European media, technology and everyday life network (EMTEL), which taken together represented much of the user research that took place in Europe during the 1990’s. There are no reviews published on this research but a few anthologies that collect central articles and offer some overviews have been produced by the British research (Silverstone & Hirsh 1992; Mansell &

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2 The EMTEL network continues in the guise of EMTEL II. Information is available on the WWW at: <http://WWW.lse.ac.uk/Depts/Media/EMTEL/main1.html>
Silverstone 1996; Dutton 1999), in Norway (Lie & Sørensen 1996), and Sweden (Karlsson & Östlund 1999). Other reports of such research are occasionally given in conference papers and articles (Venkatesh 1996; Davenport, Higgins, Sommerville 1997; Haddon 1999; Venkatesh & Mazumdar 1999; Lee 2000).

The other type of research deals with the uses that are made of the technology, especially the use of the Internet. Studies that are relevant to this research have been carried out from the perspective of the psychological factors of using the Internet (Kraut et al. 1997; 1998a; 1998b; Gackenbach 1998), with a perspective on the network of users (Rice et al. 1990; Wellman et al. 1996; Wellman & Gulia 1996; Garton et al. 1997; Komito 1998; Parks 1996; Wellman 1999; 2000), and with a focus to uses of the Internet as an information system on which searches are performed (Savolainen 1995; 1998; 1999a; Vakari, Savolainen, Dervin 1997; Wang, et al. 1998; Fidel et al. 1999; Wilson 1999).

With the objective that is set forth for this research, and that will be presented shortly, I have found that the theory within the first of these two orientations in research is lacking perspective on the serviceability aspects of information systems such as the computer and the Internet. The second orientation offers more of a service-aspect of the technology, especially those projects that study the search for information on the WWW. That is also the direction in which I have turned to locate supporting theory. In chapter 3 I will discuss extensively theories from the field of Information Studies that are used throughout this book. As the conceptual framework is explained in chapter 4, I also introduce some relevant research in time-geography. In the closing chapter, I am going to compare and contrast the approach and some of the findings of research in the tradition of media and mass communication.

1.2.3 A Personal Note

At the interdisciplinary environment of Tema technology and social change, the Ph.D.-students are encouraged to engage in problem oriented research rather than a disciplinary orientation. Taking this to heart, I set out to find the method in which to study uses of computers and the Internet in everyday life.

I must say that I have failed to maintain the focus I originally had as this project was outlined in 1995 and carried out in the latter part of the 1990s. Seeking the means to grapple with the problem and perform
research, I made two journeys down blind alleys. However, this was fortunate. The first was a technology-oriented cul-de-sac. At the time there was the very large and influential PICT-project going on in Britain and there were many studies being carried out on the use of information technology related to that project. Also the SCOT-school was peaking and studies of technology and social change became a matter of making sense of the technology per se. While these impressive projects surely contributed with much needed understanding of the computerization of society, there was a lot of focus on computers as "social and symbolic as well as material objects" (Silverstone & Hirsh 1992:2) and less on how they offered the means to interact with information. Backing out from this alley, I brought along the understanding of how important the acquisition and subsequent processes are for how people make sense of the artifact and how that influences their uses of it.

The second fortunate failure was a journey into a consumption-oriented cul-de-sac. Understanding acquisition of information as a matter of consumption I was led to search for patterns in the use of computers that would make sense in terms of consumption of information in comparison to the way one consumes other things as a matter of lifestyle (Nilsson 1996; 1997). With a background in sociology I set forth to analyze a nationwide sample of computer habits (SCB 1995) with the statistical tools of correspondence analysis, which is a French

3 In studying uses of technology in domestic settings, a ‘moral economy of the household’ (Silverstone & Hirsh 1992) has been argued to be important as an economy of meanings. As the concept of ‘moral economy’ is developed it is brief, even obscure. Its merits lie in insights to the significance of "...a willful coexistence of very new technology and very old social forms" (p. 1). The four central concepts, appropriation, objectification, incorporation, and conversion, developed by Silverstone and Hirsh, is intuitively attractive to use in making sense of use of information technology in domestic settings, but when looking closer at them they become problematic if utility of use is of principle interest. In their model the intention is to cover not only technology as artifacts but also as information services. What they point out can hardly be disputed: "Both the television and the television program are objects to consume..." (p. 21), but it is a problem that the attempt to cover this ‘double articulation’ here would obscure the understanding of either. The model that will be developed later in this book makes for an analytical discrimination between interactions with the technological artifacts and with information activities, while the ‘moral economy’ treats these in concert.
version of principal components analysis. As a Pierre Bourdieu of immaterial objects, I envisioned how individual 'taste' (Bourdieu 1984) in information would be revealed by individual habitus that positions the individual in a field of consumption of information. Man is, supposedly, a bundle of habits,\(^4\) and Bourdieu’s conception of habitus works to suggest to the individual the habits and patterns of actions that are common for a group with social, economic and cultural commonalties. As a consequence, habitus is also the basis of distinguishing and evaluating habits and patterns of actions, i.e. what one considers to be valuable and interesting, and what is considered despicable and trivial. This would contribute with an explanation of information habits as pertaining to lifestyle, and relating to other patterns of consumption that take place within different habitus. The main problem with such a project is that it becomes very extensive. Not only does it require a survey with a large sampling and many questions, but it also needs to be complemented by many interviews and opportunities for observation. Lacking the means, as well as an interest in the intricacies of correspondence analysis, I backed out of this alley. Among the treasures that I brought along are the importance of the social context on individual actions, and the distinction of taste for the assessment of relevance.

The third time was a charm. As I immersed myself in readings about information theory I became acquainted with the field of information studies. It appeared to offer the means to make sense of uses of information systems that suited my way of thinking. I pursued studies of information theory further as a guest at the Department of Information Studies; University of California at Los Angeles, and it made me realize the bearing it had on the problem at hand, which will become apparent as this book unfolds.

1.3 Purpose & Research Questions

The question in the title to this book, "What's the use?" should be understood in two ways. The first question concerns the use of information systems such as the Internet in everyday life in terms of how actual use may be described, and the second question concerns the instrumentality and usefulness of such information systems in everyday life.

\(^4\) Which is claimed by William Paley in a text from 1785 (Robbins 1991).
My understanding of an information system such as the Internet is that it consists of both technologies and of services. ‘Use of’ an information system should therefore be understood initially as interactions with technology and artifacts and secondly, as the utilization of services. ‘Use of’ is not a matter of ‘usability’ or of man-machine interaction, but of a correspondence between a want and a solution. ‘Use of’ information systems in everyday life rarely (if ever) has button pushing as the objective. Instead, the objectives are to satisfy the wants of everyday life, such as finding relaxation and entertainment, getting answers to questions, keeping informed on issues of choice, staying in touch with relatives, organizing mutual activities, pursuing hobbies, and in general, manage everyday life. Use of information systems for such mundane objectives is understood here as information behavior.

When a computer and a connection to the Internet are introduced to the household and everyday life, there is access to an information system in a context where there are already several information systems present, such as the means to communicate by mail and by the telephone and possibly a cellular phone, and access to information in books on a bookshelf, at least one of which is often a dictionary, encyclopedia or an atlas. In using the Internet against a backdrop of other information systems present in everyday life, people are expected to differ in how they find the Internet and other information systems to be instrumental to their various purposes.

I regard this work as a—relatively modest—contribution to a large and demanding project: that of understanding information behavior in the presence of computers and the Internet. To make my own research manageable and meaningful, I have chosen several limitations, such as concentrating on life outside work (everyday life), and on relatively computer-literate persons (methods and limitations will be described in more detail later). The longer-term aims for my chosen line of research can be expressed in two objectives:

1) To find appropriate terms and methods to categorize information behavior in everyday life—how to describe use.

2) To discover purposes and aims for the individual’s information behavior in everyday life—how to describe usefulness.

For obvious reasons, objective 1 has to be fulfilled before a satisfactory treatment of objective 2 can be achieved. Hence, by necessity and choice, the purpose of the research in this book has its center of gravity in the first objective, but the reader should bear in mind that
this is regarded as a step towards more comprehensive research, where objective 2 is the conceived next station.

The purpose of the research presented in this book is, thus: To develop a theoretical and conceptual framework of information behavior in everyday life that offers description and categorization and relates it to information systems, with an outlook towards also describing the usefulness and objectives of information behavior.

1.4 Some Definitions and Initial Limitations

Throughout this book I try to maintain a distinct vocabulary for things where language is sometimes ambiguous in everyday use. Most of the time, the use of words can be defined as they are introduced, but a few are more central as they introduce limitations to the study (e.g. ‘everyday life’ and ‘information systems’), or have multiple uses that make them ambiguous (e.g. ‘information’ and ‘information behavior’). Such words are introduced here. There is also a glossary of terminology, which can be found at the end of this book.

1.4.1 Information Behavior

I start out with a definition of information behavior, although I will wait to define ‘information’. This concept is used as a label for human actions, activities, conducts and strategies, that are associated with ‘information’ (see below). It follows a practice that is common in Information Studies that is discussed more extensively in section 3.1.

1.4.2 Behavior

The most common and everyday definition of Behavior is used here. It is taken to include, but is not limited to, individual subjectivity, emotions and cognitions as relevant aspect of interactions between a person and is or her surrounding environment; guided by conscious planning and strategies, or by habit and practice situated in particular circumstances.

1.4.3 Everyday life

Everyday and everyday life refers to the distinct type of context (Pettigrew et al. forthcoming) of activities that are studied here. It should not
be taken to mean specifically every single day or workday, rather it is intended to mean every private aspect of an individual, whenever, and wherever the individual is; in the household or the backyard, in the car or on a bus, in public spaces or at work. Neither should everyday life be understood to cover only such activities that are habitual, routine, non-dramatic and mundane. Although that would describe a significant aspect of everyday life, it infringes on the opportunity to study any novelties and changes in the context of how the respondents’ lives proceed (Savolainen 1998). As ‘unusual’ events take place they will be included in the research but not given any special treatment. A very generous definition of everyday life can be given from the most general project that pervades it: living life. In this respect it covers all aspects of activities, for all of every day’s 24 hours, and work is but another project that takes place within it: “Man must be everyday, or he will not be at all.”

A more suitable but hopelessly awkward phrasing would be ‘non-work everyday life’ as ‘everyday’ is intended to be understood in its transferred form of ‘usual’ but excluding work-related activities. ‘Work-related activities’ are understood here as tasks that are motivated by an individual’s role as a professional, different from activities that are performed in a private capacity. Having said that, it can be argued that people bring their everyday life to work as well, as there are moments that are better described as private and relating to personal and private tasks rather than to work-related tasks, e.g. during lunch and other breaks and in conversations with colleagues and colleagues-turned-friends. This exclusion of work-related activities represents a bias in this research that is motivated by the fact that there already is a great deal of research concerning the uses of information systems in organizations and firms.

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5 The aphorism is from Henri Lefebvre (1991:xix) and I beg to pardon for his sexist use of ‘man.’
6 For research specifically on the process of everyday life (Ellegård 1993; Ellegård 2001); everyday life and new technology (Johansson 1988: 13; Silverstone & Hirsch 1992; Karlsson & Östlund 1999); Television in everyday life (Silverstone 1994); Mass media in everyday life (Moores 2000).
7 An overview of 50 research project applications, 100 research articles and 64 review articles, where users were present, showed that a majority took place in organizational settings (Hektor 2000).
1.4.4 Information Technologies + Information Services = Information Systems

Information technology (IT) and information and communication technology (ICT) refer to the same thing, namely the technological artifacts that are used to create, store, manipulate and transfer, sound, images and text (SCB 1996), which in practice means the computer and its modem, cables and peripheral equipment, the telephone, cell phone, pagers and other electronic machines and devices. But I also wish to ascribe it with a wider meaning that includes any artifacts, electronic or not, that are used for such purposes (Beckman 1995). With such an understanding of ICT, it also encompasses artifacts such as pen and paper, books, documents, pictures, and television sets. Sometimes the word channel is used synonymously with information technology.

Information services is understood to be the organized use of rules and procedures that become a function of utility when given specific form and applied to an information technology. Examples of such rules and procedures are the conventions of writing and speaking and the protocols of the Internet and the WWW. Examples of its specific forms, i.e. its design, are the contents of a newspaper or a web page, and a broadcast on radio or TV.

Information Systems are what you get when you combine ICTs and information services. When ‘information system’ is used, it encompasses artifacts and services, both form and function. It is synonymous with source, medium (singular), and medias (plural), as that presupposes both a technology and a mediating service. (The word media or the media, on the other hand, refers to the industry and products of mass-communication.)

A user, then, refers to a person who interacts with information systems for his or her purposes. Use and uses refer to interactions with information systems. Usefulness refers to the utility or leverage of a resource, e.g. an information system, in order to achieve a desired order or result.

1.4.5 Information

Information is seemingly a rather non-problematic concept, but an important distinction needs to be made in the use of the word for the purposes of this research. This distinction results in seemingly very
different images that nevertheless are equally ‘true’. One is a quite specific definition that positions ‘information’ in relation to other basic concepts, i.e. data and knowledge, and to concepts that relate to its properties, e.g. signs and symbols, channel and transfer, and objects and meaning.\(^8\)

A specific definition is, however, not convenient for everyday language where a more conventional terminology is called for. The first image of ‘information’ is from the most usual talk about it as something that can be accessed, approached, bought, browsed, changed, distributed, duplicated, encountered, exchanged, found, given, had, manipulated, monitored, noted, noticed, printed, published, made redundant, retrieved, searched for, sold, stolen, stored, taken, wanted, and so on. But strangely, ‘information’ is rarely thought of as beautiful, ugly, entertaining or boring. Also, information can commonly be understood to be little, but not small: much, but not large. Everybody knows this and uses such labels casually to talk about information. There is generally no need to be particular about the precise meaning but rather accept that the user defines the information from his or her appreciation of what he/she find to be informing (Dervin 1983b).

There are conventional words to talk about matters that are genuinely physical, e.g. soft, warm, heavy, strong, and so on. Even physicists use such words in everyday language, I’m sure, but they are not satisfactory in order to describe physics. Similarly, there is conventional language about information and related issues that is not satisfactory to describe it and explicate its workings, but is genuinely acceptable for everyday language in talking about it. Most often such everyday uses of ‘information’ can be understood in one of three ways: 1) information-as-process, which refers to acts of informing, 2) information-as-knowledge, referring to that which is perceived in the act of informing, and 3) information-as-thing, which is a common attribution of objects such as data and documents that are regarded as informative (Buckland 1991).

When it is not satisfactory to speak casually about ‘information’ but rather about what it is and what it does, the image becomes quite different (and it serves to be noted that it is not intended to offer an epistemological truth as to what information ‘is’, merely how it is understood in this research).

Gregory Bateson suggested as a definition of information “a difference which makes a difference” (Bateson 1995). With it he connects a technical conception of information as a perceivable difference, a ‘surprise’ (Wiener 1957) that is possible to measure, to human thought, cognition and meaning—as he states the difference needs to be ‘effective’ to the mind of a larger entity. If this understanding of information is accepted, it is possible to argue that information serves as an intermediary to data and knowledge. ‘Data’ or rather its Latin ‘datum’ means the given, or gift, (Salenius 1873) and it suggests that which is given when something is perceived. (It should be said, though, that the use of ‘data’ throughout the book is referring to the empirical material as such.) ‘A difference’ of a certain magnitude is required for the senses to perceive it and for the mind to register it, (Wiener 1957) and Bateson’s ‘difference’ can be understood to be of any magnitude or level of complexity. If any difference ‘makes a difference’ it is understood to be information. If it makes no difference, it is not information. This refers to the ‘effect’ of the difference, understood as a change of our “probability distribution” (Boisot 1995, drawing on Popper) (see also the discussion of ‘relevance’ in sub-section 4.4.2). If it does make a difference, it can be understood to modify or add to what we ‘know’, i.e. to the structure of beliefs we hold about the world. “A difference which makes a difference” is thus understandable as a prerequisite to knowledge, although not being knowledge in itself.

Much like ‘knowledge’ is commonly understood to be immaterial, I believe it is important to understand information as immaterial as well (Hektor 1999). Doing that, ‘information’ is taken to be something that is different from texts, images and spoken words that are all material in some sense. The distinction is important since a material view of information implies that information is objectively available for everybody in exactly the same way, while an immaterial view of it makes it reasonable that different individuals make different senses of the same event, text, picture and so forth. This view of information has some

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9 While this is an unsatisfactory definition of ‘data’ it is short and distinct enough to distinguish it from ‘information,’ which is the purpose.
important implications. First, information cannot be transferred: signals, signs and symbols are transferred as electric pulses, flashes of light or scribbles on paper. Second, information is not an object: the objects are ink on paper or electrical states of on and off. Third, information is not objective: it is construed by individuals, from their understanding of signs and symbols that are shared by social convention, to represent something that is absent.

A correct description of how exchanges of signs and symbols in strings of intelligible messages work to inform an individual is cumbersome in every instance. When communication is successful, i.e. when one forms an understanding of a message that is in accordance with the intention of the person formulating the message, information can mistakenly be seen to be transferred, be an object, and to be objective.

To arrive then at a definition of information when a more distinct vocabulary is called for, I suggest, “the immaterial reference to which a material symbol or sign is connected by social convention”, or “symbolic content”, for short. This definition draws on Bateson’s “a difference which makes a difference” but for the purposes of this research I prefer to narrow it to concern humans informing humans, mediated or not, by way of signs and symbolic display.

There are two implications with this definition that are not normally associated with an understanding of information. As I accept that a perceiver can construe information from any form of symbolic content (as long as the content is comprehended and thus ‘makes a difference’) it also includes music, pictures, movies, the ringing of a telephone, mimicry or any other symbolic display, and the more conventional text, talk and images, as forms of symbolic display from which information can be construed. The second implication is that the definition does not limit or suggest what effects there might be from the symbolic content (i.e. how it makes a difference). As information is construed it is understood that it can make a cognitive difference (e.g. being enlightening or confusing), or an emotional difference (e.g. being entertaining or disappointing). It is also understood that it, in a transferred sense, can make a behavioral difference (e.g. make us laugh from an emotional difference, or to take a left hand turn from a cognitive differe-
In section 4.5 I will pursue this as a matter of 'outcomes'. Also, I am going to specifically discuss the relation between 'information' and 'entertainment' as I contrast this work to research in media and mass communication in section 9.2.

To sum up this exposition: The specific definition of how 'information' is understood in this research is; "the immaterial reference to which a material symbol or sign is connected by social convention," or "symbolic content," for short.

Whenever I speak about information, not about what it is but about the roles it plays in everyday life, I have to accept the conventional uses of the word. When it is treated as an object I do, however, understand it as an-object-carrying-signs-with-symbolic-content. When it is treated as knowledge, I understand it as a-set-of-symbolic-content—that-leads-someone-to-a-set-of-beliefs. And when it is treated as a process, I understand it as exchanges-of-signs-with-symbolic-content.

Terms and concepts that are prefixed by 'information' (e.g. information technology and information activity) are yet more examples of conventional labels used in everyday talk about information. As they are used here, they are not intended to say something profound about what information is or can be understood to resemble, but are simply referring to an association between a common understanding of information and -technology, -service, -system, -activity, and so on.

1.5 Disposition and use of quotes

This chapter has introduced the frame of reference for the overall project, including a background of knowledge interest, objectives, previous research, and operational definitions. In chapter 2, the case study approach that has been used is described and an account is given of what limitations have been made and how the work has proceeded in the collection of data, coding, analysis and presentation of results. In chapter 3, a few central works of theory in Information Studies are introduced that will be further discussed in chapter 4, where they take part in forming a model of information behavior. In addition to prior research in Information Studies, the model also relies on empirical findings from ten cases. This material is presented in full in chapters 5,

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10 That information can make a behavioral difference should not be understood in a way that information is seen to be a reason for actions, merely that actions are understood to be based in part on information.
6, 7, and 8, making use of the model; for practical reasons presented by way of the four parts of that model: the respondents’ Environment, their ICT-Settings, their Information-Activities, and Outcomes & Changes. Each of those chapters is concluded with summary sections of empirical uniformities stated as theoretical propositions. A self­critical review of the methods that have been used is offered in chapter 9, where the findings from this research are also compared and contrasted to research in media and mass communication. In this final chapter I also return to discuss the research questions and bring together the overall model as well as suggest directions for further research. The book is concluded by interview appendices, a list of references, and a glossary of terminology.

Quotation marks (" and ") are reserved to mark exact quotes, that are also presented in italic, in order to distinguish them in the text. Quotes that are longer than a few lines are put in separate blocks and are not marked by quotation marks. Single quotation marks (‘ and ’) on the other hand serves a few different functions. First and foremost they are used to mark single words that have the function of being a concept that usually is discussed in great detail. Second, single quotation marks are used to mark quotes within a quote. Third, single quotation marks are used to mark several words that are not exact quotes but rephrasing from a particular source, which also are offered in conjunction. Italic words and phrases that are not framed by quotation marks are used to introduce terms and concepts that are further discussed immediately below.
2 Method and Empirical Material

2.1 Introducing the Method

In this chapter, I set out to account for how the work reported has evolved: How the empirical material was collected; how the analysis of that data with support from previous research aided the formulation of a model; and how the format of the model structured the presentation of the empirical material.

Capturing data about the world in order to do research is a matter of making choices in methods to use. These choices are not solely up to the preference of the researcher but are already limiting by the nature of the research questions, by the aim of the research and by the corpus of knowledge that is already available. For instance, to use a hypothetical-deductive method for this particular research and to perform a survey is not an option as it implies that there is a good set of questions ready to be formulated and put to a sampling of respondents that are representative to a universe of where the phenomenon of interest is present. The problem is that there is no systematic knowledge about everyday information behavior that makes it possible to frame the necessary questions. In order to do that, hypotheses are needed that can be tested by questions, but at this point the grounding of any hypothesis will be very narrow, almost like guesswork. Carrying out research from that would surely be a time-consuming, expensive and roundabout way to gather knowledge. What is needed at this point are conceptualizations and understanding about the phenomenon that makes for the necessary knowledge from which it is eventually possible to make good hypotheses and a frame for these survey questions.

This is not to say that the issue of information behavior in everyday life is a totally uncharted field, but the knowledge is dispersed to specifics such as uses of technology and interactions with information. Systematic knowledge about the phenomenon is, it appears, lacking. As I have stated in the previous chapter, the purpose of this research is to remedy that, and that suggests two quite specific undertakings. One is to take an explorative approach in gathering empirical data about the
phenomenon and make use of methods to gather relevant data that is rich in detail. The other is to capitalize on the strands of knowledge that have already been made in the respect that it relates to the phenomenon. This implies a double take where the first approach can be understood as inductive and the second as deductive, although I believe that such a distinction stretches the differences.  

This double take will be reflected by presentations of central theoretical work and new empirical material. I am going to draw from prior research in a deductive mode to seek what consistencies and properties to look for in the empirical material. I am also going to analyze the empirical material inductively and turn to prior research to look for relevant relations to the findings that are made.

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11 As a note on the difference: Qualitative methods are often referred to as hermeneutic as opposed to hypothesis-testing and as inductive as opposed to deductive. I often find the differences between the two approaches to be exaggerated. I base this observation on the problem of induction, which, as it was formulated originally by David Hume, states that inductive evidence is either logically erratic or is itself inductively proven and as such an invalid circular reference (Lübecke 1988:26; Föllesdal et al. 1993:84). Karl Popper has suggested a resolution to the problem and although it has not become generally accepted I find it a satisfactory model to think of the obvious similarities between the two dominant scientific methods. Popper claims that induction is not really induction but hypothetico-deductive, and that it should be understood as developing hypotheses that are never quite confirmed but either falsified or remain as lingering guesses (Lübecke 1988:262). This reasoning is furthered by a suggestion that the researcher’s preliminary understandings of the hermeneutic process equals to preliminary hypotheses, and that a satisfying hypothesis can be reached only when there is an understanding of the material (Föllesdal et al. 1993). From there it is possible to seek explanation with the hypothetico-deductive method. In qualitative research, this process is equaled to the hermeneutic circle, which is an iteration between different hypotheses and data. (There are different circular structures that are characteristic of the process of understanding: particular-total circle: Subject-object circle: question -answer circle. (Föllesdal et al. 1993:135, 145-146)). The contribution to qualitative work of this model is that it illustrates how the scientific process work and why the researcher must try and make accounts of how the theory develops.
2.1.1 Modes of capturing data

One of the more important aspects of qualitative research is that there is a relationship between the researcher and those who are researched, and that the different approaches to gathering data influence the depth, duration and nature of this relationship (Burgess 1984:2). In general, the means to capture data is by observations, interviews or by turning to documents, and all approaches have their strengths and weaknesses pertinent to the specific phenomenon of interest (Burgess 1984; Holme & Solvang 1986; Patton 1990; Föllesdal et al 1993; Silverman 1993).

Observations provide a very close relation between the researcher and the ‘field’ and can offer very rich material on the phenomenon. In this case, where the field is the everyday life of some individual or household, any prolonged observations are understood to be very intrusive.

Interviews also render rich material, although it is not first hand information on the phenomenon as much as it is about the phenomenon. This may or may not be a problem, and in this case it is understood to be a good thing. As the interviewee’s accounts relate their understandings, motivations, reasoning and rationalizations of what is going on, the data is more from their point of view than from the researchers.

There are not likely to be many documents available to which one can turn to collect data about the phenomenon, but such documents can be made in cooperation with the respondents. One way of doing this is to automatically log certain information systems, such as telephones, television and computers. While that offers very exact data about some aspects of uses it does not offer much about the content of use and it offers nothing about the quality, purposes or any other circumstances of the use (Hektor 1999). Neither is it possible to log all forms of information systems. Another option of producing documents is to have the researched subjects keep diaries. The richness of such documents is of course dependant on the diligence of the respondent’s reporting in it, and at its best it can offer a very good and context-bound material about what is going on.

In this research I have chosen to make use of diaries, for the breadth of data they may offer, and of interviews for the depth in detail that can be found in the interviewees’ accounts. I will relate later how this was carried out. Observations are not used here in any systematic way (except as personal observations to further assess the congruence in the interviewees’ accounts), mainly due to its intrusive nature in this parti-
cicular field, and the serious problems it would pose on the normalcy of what has been observed.

2.1.2 Case study research

Case study presents itself as the label on the format of the method used, and there are strengths in a case study approach that fit well with the purpose that is set forth for this research and the double take of turning to empirical evidences as well as to prior research. The more important strengths, and I shall deal with each of them, is 1) the openness to what a unit of analysis might be. 2) The approach to phenomena as processes that are frameable in a system of circumstances. 3) The means it offers to generate hypotheses and theory on phenomena. 4) The opportunity to synthesize empirical data with prior research.

1) Case study has been a preferred choice in educational research (Patton 1990:99) but it is also a common approach for psychologists, biographers and historians, and in studies of political science, law, social services, ethnography and critical theory (Stake 1993:238). It is performed for the intrinsic value of the particular and unique, or from an interest in a particular phenomenon where the case (or cases) plays a supportive role (Stake 1993:237). The unit case may be a person, a small group, a community, an event, an episode or an institution (Platt 1988:2; Stake 1993:236; Patton:384). In this research it is the phenomenon that will be in focus rather than the cases as such. For that reason the cases should not be of uses that are deviant, extreme or unique in some other sense. This speaks for an “instrumental” case study where:

A particular case is examined to provide insight into an issue or refinement of theory. The case is of secondary interest; it plays a supportive role, facilitating our understanding of something else. The case is often looked at in depth, its context scrutinized, its ordinary activities detailed, but because this helps us pursue the external interest. /.../ The choice of case is made because it is expected to advance our understanding of that other interest. (Stake 1993:237)

But the phenomenon is not represented by an approachable institution, episode, individual or group of individuals as much as it is something of a pervasive presence to the general public. This speaks for several instrumental cases studied in concert, known as a “collective” case study:
It is not the study of a collective but instrumental study extended to several cases. They may be similar or dissimilar, redundancy and variety each having voice. They are chosen because it is believed that understanding them will lead to better understanding, perhaps better theorizing, about a still larger collection of cases. (Stake 1993:237).

The “larger collection of cases” must here be understood as the universe of where the phenomenon is relevant. The number of cases to study thus becomes a matter of sampling and I will return to discuss the matter of sample-size further ahead. But sampling is not only about size. The view of what the unit case is also matters. In this project, logic speaks for at least three possible views of what the unit case is. It can be one, single acting individual, a unit framed by the members of the household, or a network of people limited in scope by some acceptable definition. This will also be discussed further ahead, as a matter for limitations.

2) Information behavior in everyday life is presupposed to take place more or less all the time; it is also understood to be a contemporary phenomenon; the circumstances of relevance to the phenomenon are unclear and; most people are familiar with it (although they do not think of it as ‘information behavior’). The role of the cases is to facilitate an understanding of phenomena with the kinds of properties such as those. It takes place as a holistic approach (Patton 1990:101) where the case is seen as a “bounded system”:

The case...is a ‘bounded system’. In the social sciences and human services, it has working parts, it probably is purposive, even having a self. It is an integrated system. The parts do not have to be working well, the purposes may be irrational, but it is a system. Its behavior is patterned. Consistency and sequentialness are prominent. It is common to recognize that certain features are within the system, within the boundaries of the case, and other features are outside. (Stake 1993:236-7)

The case study approach ”zeroes in on the process” (Patton 1990:101), and this is understood to be necessary in order to meet with the aims of this research.

3) Perhaps the most convincing argument to make use of a case study approach in this research is for the means it offers to build theory and generate working hypotheses about contemporary phenomena lacking definitive descriptions (Patton 1990:101-2).
It is universally recognized, even by those who scarcely allow it any other role, that a case study may suggest hypotheses, interpretations, empirical uniformities, for future (quantitative) investigations. It does so by showing that things are so, or that such an interpretation is plausible, in the particular case, so that they might also be so in other cases. (Platt 1988:8-9)

It is not unusual that case studies are emphasized as typifications of other cases (Stake 1993:238) such as in the quote above, but it should be noticed that "...the conclusions reached by using it are instrumental rather than terminal" (Platt 1988:9), and that its main service is as a small step toward 'grand generalizations' (Stake 1993:238). The merits from what findings of a case study should be judged are complex. The worth of such findings here, which will be both theoretical and empirical uniformities, as it were, will be discussed thoroughly as a matter of validity when I return in the final chapter to review the choice of method and the quality it offers.

4) In qualitative case study research it is understood that the researcher does not come unbiased to the field. I mean this not only in the sense of the researchers individual prejudice, but more interesting here is a bias from having insight from theoretical studies that reveal "foreshadowed problems" to the researcher:

Starting with a topical concern, researchers pose foreshadowed problems, concentrate on issue-related observations, interpret patterns of data that reform the issues as assertions. /.../ With broader purview than that of crafters of experiments and testers of hypotheses, qualitative case researchers orient to complexities connecting ordinary practice in natural habitats to the abstractions and concerns of diverse academic disciplines. (Stake 1993:239)

Theoretical insight relevant to the case is understood to be a good thing in order to understand it better. This learning can be sought before entering the field, as the quote above states, or by contributions to the understanding of it afterwards (Burawoy 1991). It can also be sought from other qualitative studies of the same subject or on quite different subjects (Patton 1990:425-6). The point always being to further facilitate understanding of the cases, and I will make systematic use of such complementary studies to develop a theoretical framework "by comparisons of the findings with such that existing theories excludes or does not explain" (Nissen 1993:27). Later in this chapter I will also return to discuss how these supporting theories were sought out, what
foreshadowed problems they elicited, and how they were included in the research.

2.2 Limitations

2.2.1 The Unit Case

The more people that are included in each unit case, the more extensive each case becomes to research, and it puts limits on how many other cases can be studied to offer cross-case analysis. While this reason of economy is one of the reasons why I have chosen to make the individuals the objects of study and the unit of each case, it is not the most important one. A stronger reason is the following: The explorative approach aims at conceptualizing information behavior systematically. This means that all forms of interactions with information systems and face-to-face encounters will be studied. Even if a group or an intra-household unit is the focus of research, it is necessary to search specifically for individual activities as much as for intra-group activities since much of information behavior can be expected to be a solitary activity, even if the solitary activity is not socially isolated. As I opt out of a study of the group and look primarily at individuals it will most certainly mean that important aspects of the social dynamics of individual information behavior will be missed. At this point, I think it more important to establish the individual behaviors before it is possible to make comprehensive studies of intra-group information behavior. Furthermore, while focusing on the individual I think it is still possible to get quite a good picture of the sociality of information behavior as long as the individual is not a socially isolated unit.

This limitation infringes on the meanings of the word ‘social’: On the one hand I am going to study individual behavior, and on the other, the influence of other people will still be important to consider. There is no contradiction here although there might seem to be. Therefore it needs to be somewhat clarified. The research tradition from which I find the foreshadowed problems to put in the empirical material is that of Information Studies. The models of human information behavior that have been developed in Information Studies tend to be largely individual by disregarding social influence. My intention is to offer a more open model of individual behavior where such influences become visible, making it a social model, even though it is micro-so-
cial. The forms of social interactions that are of main relevance are interpersonal relationships rather than relationships that are involving several people in indirect contacts.

In practice this means that while each unit case is an individual they are also social individuals that are frequently engaged in interactions with other people. Obviously they can be expected to interact more with some than with others, particularly when there are other individuals present in their household. Capturing all such data of day-to-day interactions is hardly possible without being there to observe it. For reasons already mentioned, I have chosen not to perform observations and thus most of that kind of social dynamics will be invisible in this research.

2.2.2 Which Information Systems?

Another limitation concerns what kinds of information systems that are of significance. While the phenomenon under scrutiny concerns information behavior in general, learning about uses of computers and of the Internet in everyday life is what motivates this concern and for that reason it is these technologies that take center stage. All kinds of Internet-use are of importance and it is a prerequisite in the initial screening of respondents that they have access to the Internet at home. But it is also central to relate the uses of the Internet, in the shapes of email, the WWW, chat-groups and so on, to other kinds of information systems that are found in people’s everyday lives, such as newspapers, television, telephone and so on. So, while the Internet is in focus, it is with a backdrop of other kinds of information systems and face-to-face communication. It is hardly possible to research the full use of all the different kinds of information systems that are present in a common home with the same depth, and the different respondents’ ways of relating the Internet to other information systems in interviews is bound to shape how they are included in each case.

From here on I will refer to each case not as a ‘case’ but as the ‘respondent’ or by their aliases.

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12 I wish to add that the perspective that is taken here is micro-social, and it does not reflect the kind of sociology that I take to be the most interesting, which would be the attempt to bridge the micro-macro divide. For this research, however, I think it necessary to postpone any more inclusive attempts and first establish the particularities of information behavior.
2.2.3 Sampling

In the introduction it has already been noted that this study is limited to concern non-work everyday life and that the users were to be fairly computer literate individuals. These are other limitations that influence the sampling of respondents. In case study research, the opportunity to learn is of primary importance when sampling of cases is considered (Stake 1993:244), "redundancy and variety each having voice" as it were (Stake 1993:237).

It was already decided at the outset that the sampling of respondents should not be a homogenous group but rather a variation of people within the confines of the limitations that are suggested. This is met by including respondents of different ages, men and women, parents of small children as well as of older ones, academics and non-academics, residents of a large and a small city, and people with long and short experience with Internet and computers. It is expected that such differences in make up of everyday life will suggest different forms of use, and the broad spectrum of uses is important to maximize the learning opportunities.

But only so broad a spectrum is sought: I am not looking for extremity or deviance but for cases that are informative on 'normal' cases. With 'normal' I do not mean 'representative', which is a matter discussed in section 9.1, and I hesitate to say that the sample is 'biased' as that implies a deviance from what would otherwise be a 'representative' sample. I prefer to say that while the sample is varied it has some traits in common, specifically that they all are using computers at work and that they could all be described as middle class. Considering that the computer is originally an office technology, and that my requisites for the respondents is that they have access to the Internet at home and are fairly computer literate, I am not surprised or in the least troubled by the sample as it eventually turned out. I think it is a very good mix of redundancy and variety.

So how large should the sample be? How many individual cases should there be? Let me quote what Michael Quinn Patton has to say on the matter:

There are no rules for sample size in qualitative inquiry. /.../ The validity, meaningfulness, and insights generated from qualitative inquiry have more to do with the information-richness of the cases selected and the observational/analytical capabilities of the researcher than with sample size. (Patton 1990:184,185)
It is a matter of what may be learned from some original and significant problem (Wolcott 1994), and of showing results that will convince the research community (Larsson 1993). It is recommendable to collect new data to the point where the research reaches saturation, which is at a point where further data will not lead to any additional findings. Considering this, I have settled for an initial sample size of ten cases. If it turns out that a case is not very informative, or if there is only a little redundancy between the cases and saturation is not approached, the sample could easily be completed with additional individuals. As it turned out, the ten cases gave diminishing returns and the richness in the material they rendered was quite satisfactory. Although I do not wish to claim that further research would not provide any more data of interest, it is likely that it would provide only a little additional data, and that it would not significantly impact the results.

The sampling strategy is a judgment sampling, which means that the informants are selected according to the set of criteria that the researcher has established (Burgess 1990:55). The process of finding the respondents is one of opportunity, which should not be confused with a snowballing strategy to locate respondents (Burgess 1990:55).

The process went forth in the following manner: I sent an email to friends, colleagues and acquaintances, asking them to help me find respondents that I do not know personally (Appendix 1). From this I got ten respondents. To find a few extra respondents in order to have some redundancy in case someone should decline further participation, I made special requests to some friends, who gave me a few more names. I also put up a request on the billboard of the Senior-Net home page, which gave two more. I also made contact with a person at LO (Lands Organisationen, a national association of labor unions), which had been delivering more than 100,000 leased-PC’s to their members. Through him I sent a request by email to 50 individual email addresses in two cities. This effort gave no response at all. By the time I had

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13 While ten respondents may appear to provide little data, it is not necessarily so. From these respondents there are 250 pages of transcribed interviews, nine diaries totaling 63 days worth of activities. Compilations and reports of some 80 analytical categories and 45 text searches.

14 There may be several reasons for this. One is the fact that LO does not know to which member of a household their registered email address goes to. Another reason can be that in several cases the leasing-PC is actually not used by the official leaser, but by their children or other kin. Yet another possible
almost finished the first round of interviews I had 5 additional respondents. As it is a time consuming process to reach the respondents, arrange the meetings, travel to them, perform the interview, and transcribe the recordings, I decided to put the additional 5 respondents on hold until the first round of the initial 10 was completed in order to better assess whether the further material was called for. And as already mentioned, ten very useful respondents had been found and I decided that they would be sufficient. The ten respondents are introduced in Table 2:1, below, and again in more detail in chapter 5. They have been given aliases, and the names of places have been changed. They were not offered compensation for their participation.

reason is that the receivers have been asked to partake in several studies by LO and that they may suffer from research-fatigue.
Table 2:1. Presentation of the ten respondents

<table>
<thead>
<tr>
<th>Respondent</th>
<th>Other household-members</th>
<th>Residency</th>
<th>Training</th>
<th>Job</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agneta, 42</td>
<td>son, age 13</td>
<td>Middletown</td>
<td>High school</td>
<td>administrative, engineering</td>
</tr>
<tr>
<td>Ester, 65</td>
<td>-</td>
<td>Bigtown, suburb</td>
<td>academic degree</td>
<td>systems operator, retired</td>
</tr>
<tr>
<td>Eva, 36</td>
<td>2 daughters, aged 7, 10</td>
<td>Middletown, suburb</td>
<td>tech. High school</td>
<td>systems administrator</td>
</tr>
<tr>
<td>Johan, 38</td>
<td>Wife, 2 children, aged 8, 10</td>
<td>Middletown, suburb</td>
<td>tech. High school</td>
<td>administrative, engineering</td>
</tr>
<tr>
<td>Karl, 52</td>
<td>wife</td>
<td>Bigtown, suburb</td>
<td>High school</td>
<td>consultant, self employed</td>
</tr>
<tr>
<td>Kent, 45</td>
<td>-</td>
<td>Rural</td>
<td>tech. High school</td>
<td>administrative, engineering</td>
</tr>
<tr>
<td>Leo, 31</td>
<td>wife, children, aged 1 and 6</td>
<td>Bigtown</td>
<td>academic degree</td>
<td>interface architect</td>
</tr>
<tr>
<td>Lotta, 35</td>
<td>cohabitant, 4 children</td>
<td>Bigtown, suburb</td>
<td>academic degree</td>
<td>financial management</td>
</tr>
<tr>
<td>Maria, 28</td>
<td>-</td>
<td>Bigtown</td>
<td>academic degree</td>
<td>Internet start-up</td>
</tr>
<tr>
<td>Sven, 33</td>
<td>-</td>
<td>Middletown</td>
<td>academic degree</td>
<td>assistant controller</td>
</tr>
</tbody>
</table>

2.3 Semi-Structured Interviews and Diaries

2.3.1 Screening Interview

When a candidate respondent was found she/he was interviewed over the telephone with a rough guide (Appendix 2) The purpose of the interview was to establish whether the candidate respondent was suitable to the study, given the required characteristics and possible overlap with already recruited respondents. It was also important to get the candidates' approval to participate only after making sure that they had a thorough description of the purpose of their participation, of how the work was to proceed and what was expected from them as respondents. The questions at this point were directed to get a preliminary view of the candidates' use of the Internet and other information systems. The candidates were also informed of their guaranteed anonymity and their
always-present option to decline continued participation. When the candidate respondent had expressed their willingness to participate in the study, a date was set for an extended interview. Eleven candidates eventually passed the screening interview.

2.3.2 Interview No 1

Preferably, the interview took place in the home of the respondent. While this was not always practical, a secluded space at their place of work or at a café with a minimum of disturbance was sought. The interview was recorded on tape, which no respondents opposed but did make an occasional comment on.

The intention of the interview was to achieve a thorough description of the respondents’ access to and use of different kinds of information systems. From a list of themes and questions used as a guide (appendix 3), the conversation proceeded as a “conversation with a purpose” (Burgess 1990:102) about the respondents’ uses and experiences, not altogether informal nor in a standardized format (Patton 1990:277-290). It was ensured that all respondents were asked about all the topical questions, although not with the same phrasing or in the exact same order. Some aspects of use were penetrated more thoroughly as the respondent showed an interest in them or developed on anecdotal evidence. Probing, comparative questions, follow-ups and silence were used in the interview to get as rich an account as possible from the respondents. It is understood that the respondents do not think of their actions in the terms and concepts of a social researcher and that this must be given consideration when formulating the questions. These first interviews lasted between one and two hours.

Eleven interviews were held in March and April 1999. One of the interviews rendered very little information and it was mutually decided not to continue the individual’s participation.

2.3.3 The Diaries

After the first round of interviews the respondents were asked to write a diary chronicling their activities for seven days. One purpose of the diaries was to provide a first-hand account of a situation to which a researcher may not have direct access. Secondly, it provides an ‘insider’s’ account of a...
diary study was to qualify and validate the material from the preceding interview of how information systems were used by providing the context, the chronology and the time spent on events. Another purpose was to document events, from the respondents' everyday lives that related to uses of the Internet and other information systems, which was used as topics for the later interview. With such material, the respondents could be asked about strategies, alternatives, preferences and recurrent practices for dealing with events and projects. The diary was a simple black notebook with lined pages. It had no structure except that they were asked to make notes of the time, type of action or event, who was involved, where it took place and were given the option to make additional comments. The respondents were at full liberty to conceive from their own categories of what to add. They were asked to use this diary for one week, to note all activities for the full day and to immediately contact me if they met with any difficulty, which two of them did. As they were handed the diary, a note (Appendix 4) accompanied it. The quality of the material from the diaries varied. While some were careful in making notations, others were piecemeal and brief.

Nine diaries were collected between May and July, 1999. Eva’s diary was lost in the mail as it was to be returned, and she volunteered graciously to make a new one. Leo’s diary, the tenth and final, was lost in his desk before it was ever completed. A new diary was sent but never completed.

2.3.4 Interview No II

The purposes behind the second interview was to allow for the respondent to follow up and reason about events and projects from the diary and from the first interview, and to continue the interview with new topics and questions. The materials from the first interviews were transcribed, and in that process offered new questions as well as follow-up questions to individual responses. Also, the diaries were ana-

situation and, finally, complements the material that is gathered through observation and interview by the researcher. Nevertheless, diaries may vary in terms of depth and detail, which may result in the researcher requiring more detailed data. In order to obtain the telling detail that is associated with field studies, the diary can be used as a resource to raise questions and queries that may generate further data” (Burgess 1990:135).
analyzed for social contacts, events and projects. This material provided a unique guide to each respondent around which the second round of interviews partly revolved (appendices 5 and 6). As in previous interviews, this round was recorded on tape.

Nine interviews were held during June, July and August 1999. The Interview with Leo was postponed pending the return of his diary. In the process, he was transferred to another country and the interview never took place. Even though the only data from Leo consists of one interview, I decided to include it in the research as it offered such rich material.

In section 9.1 I will return to discuss the qualities of interviews and diaries.

2.4 Processing the Material

The use of interviews and diaries can be described as standard tools of a sociologist (Silverman 1993; Burgess 1990). Use of technologies and other activities that are embedded in everyday life are often made routine and taken for granted (Silverstone 1992; 1994). The means to acquire systematic knowledge from such day-to-day activities is to gather material from which it is possible to seek out the qualities of what is going on where 'qualities' are understood as characteristics and properties (Larsson 1993:195), or in a more profound sense "apparent traits of phenomena." (Repstad 1993:8).

The material has been coded as a device to distinguish essential features that can be labeled, organized, and presented in a systematic and comprehensive way (Larsson 1993; Wolcott 1994). As prior research on some of the aspects studied here is abundant, although not on all of the aspects that are studied, such previous research is made use of whenever possible. While new theory is built, it is with prior theoretical frameworks as construction elements and reinforcement.

Qualitative studies are a constant analyzing project where answers to a question prompt new questions to be answered. Complexity and the mass of data need to be reduced, coded and structured (Larsson 1993:20; Berner 1989:203). Nucleus of categories, typologies and concepts are to be sifted out (Berner 1989:204). The use of coding in grounded theory makes for a good example of the coding process:

Codes ranges from simple, concrete and topical categories to more general abstract conceptual categories for an emerging theory. /.../
the researcher defines them carefully, delineates their properties, explicates their causes, demonstrates the conditions under which they operate, and spells out their consequences. ... Codes serve to summarize, synthesize, and sort many observations made of the data. By providing the pivotal link between the data collection and its conceptual rendering, coding becomes the fundamental means of developing the analysis. (Charmaz 1983:110)

To safeguard the quality in the process of breaking down the data from the interviews and diaries and compile them in common categories, the ambition has been to separate phenomena by qualitative distinctions and not by gradual shifts. In doing this it is necessary not to allow the phenomena to vary and to be clear on what the essentials are.

This work is sometimes referred to as “analytical induction” (AI) (Silverman 1993:160-2), and sometimes as “inductive analysis” (IA) (Patton 1990:390-425). The analysis proceeds by conceiving hypotheses of the applicability of the categories, or codes, and then:

‘[O]ne case is... studied to see whether the hypothesis relates to it’. If not, the hypothesis is reformulated (or the phenomenon redefined to exclude the case). While a small number of cases support ‘practical certainty, negative cases disprove the explanation, which is then reformulated. Examination of cases, redefinition of the phenomenon and reformulation of hypotheses is repeated until a universal relationship is shown’. (Silverman 1993:161. Quoting Fielding 1988:7-8)

I relate below how this work proceeded in practice. The result of it is presented in chapter 4, and I return in section 9.1 to discuss its quality and implications.

2.4.1 Transcriptions and Management of Text

The taped interviews were transcribed on a computer (in Swedish). As it is not an intention to perform a conversation-, or text analysis, there are no notes of pauses, interruptions and grunts. I write down the interview word by word, sometimes changing the order of words to make a sentence intelligible and sometimes including laughter and the respondents’ direct reference to something.

The text files were saved in Word, and formatted to suit the program N*UDIST (Nudist). The use of Nudist implies nothing magical. What it does is to collect paragraphs that have been coded in new files. When a new category is made Nudist creates a new file for it. I labeled
the category and gave it a definition that suggests what should be counted as belonging to this particular category. When a section from an interview is coded by this category, that section is automatically copied to the file for that category. I went forth with this by first reading through each file of written interview and coding the appropriate paragraph to rough and preliminary categories. I made sure to code everything to some category in the text, not to lose anything as the coding proceeded. Rather than becoming less, the total material increased as paragraphs often were assigned to more than one category. After that there were new files of text containing everything that had been coded under a certain category. From there I conceived new categories, more fine-grained, progressively building a tree of categories and breaking down data in smaller elements. The files of coded text were then read through and coded to the finer categories. In order to check that I had not missed anything significant in the files that contained the finest categories, I made comparisons between a few of the files. It worked like this: The final file of texts containing data on an information-activity, for example, was compared with a search performed in Nudist for every paragraph in every original interview on words relevant to that category. In the very few cases that it rendered additions to a category, it was included in it.

2.4.2 The Inductive Work of Finding Essential Features and Categorizing the Data

Categories were built through iterations of going through the text files from Nudist. Moving up and down the hierarchy, and across different categories, checking the consistency and the fullness of the reports. All the categories in Nudist were large files of texts that were printed and read through over and over again, asking what is going on here, what is happening, what are the respondents doing? I made notes in the margins of the printouts of what I thought to be essential features of the texts. These features grew in number as more particularities were recognized, after which the particularities were ordered in cohesive categories.

The coding of the data was done twice. The first coding process related to activities and events that were broken down as 'technology,' relating to the artifacts, and to 'use,' relating to uses of the same. 'Use,' was then broken down to specific applications of the artifacts, e.g. 'the Internet,' which in turn was broken down in successively
smaller elements: ‘the WWW,’ ‘surfing,’ ‘being lost.’ Eventually it became clear that this systems-oriented tack did not work very well to find qualities of use. It became qualities of technical applications rather than of human behavior. A related problem was that the categories were not mutually exclusive in terms of behaviors. There were strands of similarities between otherwise distinctive categories, i.e. similar activities occurred in uses of different applications. From this observation it became necessary to look for phenomena of information behavior that was independent of what technical platform was used.

For the second coding process I took the problems of the first instance to heart and coded for what the respondents were doing, i.e. instead of the code ‘surfing,’ the code could be ‘moving around in an information environment.’ The ambition was to identify all instances of interactions with an information system, making categories that were mutually exclusive, or “paradigmatic oppositions” (Silverman 1993:72 drawing on Saussure), and not having activities fall in cracks between categories or not be represented (Silverman 1993:81). Eventually, eight distinctive sub-categories to ‘information-activities’ were sifted out.

2.4.3 The Deductive Work of Including supporting theories

The inductive analysis described above was then complemented by a deductive analysis of prior research. At this point I had made extensive explorations in information studies (see section 1.2, and chapter 3), which had elicited two very important (as it turned out) foreshadowed problems (see section 2.1). First, I had found that in information studies there were a group of categories that had been established from many years of research that related to activities of people as they were searching for information. This made me investigate whether those categories were applicable in the circumstances studied here as well. It turned out that when my respondents were engaged in activities directed at approaching information the categories from information studies were possible to translate to cover those activities. But Information Studies did not offer categories that translated equally well to activities where the respondents had already approached information and were engaged in taking part in it. Nor did it suggest categories for activities where information was being exchanged, produced or disseminated by the respondents. In chapter 4 these eight categories of
information-activities are developed further, their translations from Information Studies are explicataed and those that are suggested for the first time are defined.

As the category of ‘information-activities,’ and the eight sub-categories, were refined, defined and delineated, it was indicated that these activities stood in relation to features that preceded and followed the behavioral phenomenon. This related to the second foreshadowed problem: It had also been found in Information Studies that information behavior are processes and take place in a context of which certain circumstances can be chosen and made explicit for research. As I looked for such circumstances in my material, I found that the respondents related to what could be described as an ‘environment’ and to a setting of specific information systems, and that they both logically preceded the actual information-activities as the activities appeared to be dependent on those circumstances. I also found that subsequent to an activity, it was possible to explicate outcomes from it that also had implications as to what activities could take place later and that such outcomes that had been experienced earlier was significant to present activities. There is a model from Information Studies that resembled these four circumstances (see Figure 3:1) although it was not found to be translatable to this research in any other sense than contributing with a process-perspective involving a set of circumstances.

There are other features from Information Studies that have been found to be translatable to this research and those are described as information behavior and developed in chapter 4. But the most important are the ones mentioned here; aiding the categorization of information-activities and; placing activities in a process of Environment, ICT-Setting, Information-Activities, and Outcome & Change.

The final set of categories, presented as elements of the model, evolved from iterations of exploring the data inductively and by posing questions to it from the foreshadowed problems elicited by prior research. At the end of the day, the quality of the work depended in part on the stability of the categories that were worked out, and in part on the diligence in the coding process. Coding can be a tedious work at times, and it happens that sections are given one category rather than another. However, when the research is written down such errors are discovered as the definition of a category discloses an incorrect coding. In section 9.1 the quality of the work is discussed further.

16 ‘Circumstances’ are understood as more specific elements of ‘context’.
What comes out of this work, as already implied, is a conceptual framework of information behavior. Whether this should be described as a theory or a model may be a matter of debate, but I present it throughout as a model and develop it in chapter 4.

Prior research that is important to the development of the model is presented in chapter 3, and the empirical material on which the model is partly based is presented in chapters 5-8.

While the model is the main result of this research, the empirical material also suggests empirical uniformities that are not relevant as underpinnings to the model but as examples of findings that are made by implementing the model on the data. It appears to be circular: Data is gathered, a model is developed from it, and then there are findings from implementing the model on the very same data that it was developed from. Could those possibly be relevant findings? This will be discussed thoroughly in section 9.1, but my suggestion here is that these findings should be viewed as findings from the analysis as much as the model is a finding from the analysis. The model is based on assumptions about behavior that are supported by the data and prior research. As such, it is a structure of hypotheses about significant features and how they are related to each other. The empirical uniformities can also be considered as hypotheses, although they are not organized together in a comprehensive model as much as they in one way or another relate to the suggested model. These findings are presented in the summary sections of chapters 5-8, as brief statements marked by a ‘#’ and a number.

Any discussions about representativity is postponed to section 9.1, and whenever I in the text refer to generalizations such as "It is common that...," or "Typically..." it is meant to say that something is common or typical among the respondents in the cross-case analysis.

The interviews were conducted in Swedish and have been translated into English. I have tried to stay as close as possible to the spirit of the utterance, but have presented it in written language rather than spoken language to increase readability.

The quotes by the respondents are identified by their aliases and a number, which is a reference to a section in Nudist where the original statement can be found, such as (Kent, 286).
3 Theories of Information Behavior

3.1 Introduction

When we speak of 'the information society' we tend to get lost in the technological details and in the mechanisms to manage these technologies. This is not what the information society is all about. We forget, in our love affair with technology, that information itself is the basis of this emerging society. (It says so on the label.) The function of information is, among other things, to inform, to activate, to instruct, to provide precision, to generate ideas, to trigger the imagination, and to give pleasure. The diversity of function is immense. Technology and the paraphernalia surrounding that technology are but one factor in the process of providing useful information to widely varying classes of people. A means not an end. (McMullin & Taylor 1984:108)

This undertaking is an attempt to act upon insights exemplified in the quote above. To study the significance of information technologies in everyday life by looking to the particular technologies as "...but one factor in the process of providing useful information to widely varying classes of people." Other factors are the individuals, the social settings and behaviors, and the information.

This chapter is in effect paving the way for chapter 4, where a model of human information behavior is proposed. As the model is developed there, additional theories and prior research are introduced as they are utilized as supporting elements to the model that otherwise is built from the empirical material to be presented later. Here I introduce a few of the more important examples of the corpus of knowledge from which I will draw.

The intellectual field of Library and Information Studies is a partnership between Librarianship and Information Studies (or sometimes Information Science), which have distinctively different histories. Binding the research traditions together is a common concern for the "...universe of recorded information that is selected and retained for later access" (Bates 1999:1044). There are, however, differences between librarianship and information science in what kind of issues
their practitioners take an interest in. Here I deal with humans as subject of study rather than with documents or information systems carrying representations of information, making this research more akin to Information Studies than to Librarianship.

A definition of Information Studies, IS for short, that has proved stable for the last 30 years, is the "...study of the gathering, organizing, storing, retrieving, and dissemination of information", (Bates 1999:1044) and the sub-field of human information behavior has been studied since the 1960s (Katzer 1987; Lievrouw 1998). The field has been summarized and assessed in many articles\(^\text{17}\) and it has undergone comprehensive reviews in the Annual Review of Information Science and Technology (ARIST) approximately every third year since the 1960s. Research in the field is very active and in a 1986 article (Rhode 1986), it was said that studies of users, uses and use was the most extensive area (and the most amorphous) within the last four decades. It also stated that in 1978 an estimated 1,000 studies had been published, and that a search in only one database for the 1986 article turned up 2,000 published documents.

There has been no real consensus on how to refer to the research on human information behavior. In December 1999 there was a discussion on the electronic mailing list, jESSE,\(^\text{18}\) involving several of the experts in this field, on what the preferred designation ought to be. Some proposed 'Information Behavior', and others pointed to the poor English in referring to information as something that behaves. Others suggested 'Information Seeking Behavior,' a much used term but implying a limit to only seeking aspects of information behavior, even though those propagating it mean it to be understood to include information encountering as a passive form of seeking as well. 'Human Information Behavior' was suggested as appropriate English and a valid label but few seem to be using it in practice. While 'Information behavior' may be poor English, it is argued that it is becoming a standard term, and as it is intuitively clear in what it refers to, it may be the designation of choice. In the discussion in jESSE, less was said about other semantic turns in the field as the debate was over the ambitions of the

\(^{17}\) For an overview see Katzer (1987); Wilson (2000); and Pettigrew et al. (forthcoming). The latest article is a review article to appear in volume 34 of Annual Review of Information Science and Technology.

\(^{18}\) Information and archives for the jESSE is available at [web.utk.edu/~gwhitney/jesse.html].
field to provide theories and models of generalized behavior. More special cases of discussing this research, in reviews and overviews, often refer to it as 'Information seeking and use,' or 'Information needs and seeking,' or any other possible combination of the concepts Information, Needs, Seeking, Use, and Behavior. The reason for this being that those are exactly the issues of concern: The Information as the object of concern, the user as subject, the Behavior as the actions and processes taking place, and the Needs as the covert explanation to the overt behavior. Seeking is the special case of behavior with which research in the IS-field is primarily concerned, as seeking is what patrons of the library do, and the imperative of the IS-field is to serve the libraries' clients.

There is no single general model of human information behavior that subsumes the diversity of behavior displayed by ordinary people in their everyday lives as they interact with information systems. Information behavior theories are sometimes purported as general theories but their bias toward either the active and committed seeker of information or toward the expert user can make a case to disqualify them as universal tools to analyze every aspect of information behavior in everyday life. If it is this one wants to do; to study the phenomenon of how information in the everyday lives of people is approached, interacted with, disseminated and so forth, there are very few places to turn for theoretical and methodological handles. The field of Information Studies is one of those few places.

As mentioned above, there have been many research projects documented that are relevant for this study. Before the mid-1970s, research was much concerned with use of information systems and was conducted from the perspective of the system, rather than the perspective of user behavior (Katzer 1987; Taylor 1991; Wilson 2000). It was not until a seminal review made in 1986 (Dervin & Nilan 1986), where a call was made for a shift in focus by formalizing research of user behavior instead of systems, that a shift in paradigm took place (Hewins 1990; Savolainen 1999b). At that point, social variables were

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19 "Information as the object of concern" should not be understood that information literally is an object. See also chapter 1 on definitions.

20 Even before this time there had been user research conducted with the users in center, but not to the same extent. Marcia Bates, personal communication. See also Lievrouw (1988:11).
called for to better explain information seeking and use (Katzer 1987:25), but even a decade later, the problem remained:

If research and education in the medical disciplines would not focus on the patients and their illnesses, but only look upon them as users of a health care system, then both the health care sector and the patients would be in trouble today. The reality as far as most user studies are concerned is that they do not focus on the user's real information problems. (Hjørland 1997:116)

On the following pages I shall review a few readings of theory and in chapter 4, I discuss how they may contribute to model the information behavior of the ordinary person in everyday contexts. These theories have been chosen for their recognized quality and the influence they have had on the thinking of information behavior in the IS-field.

### 3.2 Information Use Environments

Within the field of Information science there are, according to Robert S Taylor, three main approaches of studying information transfer (Taylor 1991:218). First is a technological approach concerned mainly with the technical possibilities of an information system such as a book or a computer. Second is a content-driven approach concerned with subject classification and the organization of knowledge and information. Third is a user-driven approach where the concern is on "the user and the uses of information, and the contexts within which those users make choices about what information is useful to them at particular times" (Taylor 1991:218). With the purpose to "chart all the personal and contextual factors likely to influence information needs, seeking and use behaviors" Taylor developed the Information Use Environment (IUE) survey (Taylor 1968; 1991; Dervin and Nilan 1986; Agada 1999).

The intention of IUEs, and much of the use they have been put to, is to structure what is known about information behavior of defined groups of people, e.g. engineers, legislators and, practicing physicians (Taylor 1991), managers (Rosenbaum 1996), and African-American inner-city gatekeepers (Agada 1999). Other studies of information use have focused on work-related information needs, seeking and use, but

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21 Based on Taylor (1991: 217-255)
have recently given more attention to non-work settings (Vakkari, Savolainen, Dervin 1997:9; Agada 1999).

Taylor developed his model to describe information behavior by breaking down data about IUE’s in four categories: 1) sets of people, 2) typical settings, 3) typical structures of problems, and 4) resolutions of problems.

### 3.2.1 The People

The sets of people refer to the groups and their demographic and non-demographic characteristics. Taylor mainly takes interest in professions and entrepreneurs but recognizes that interest groups and socio-economic groups constitute a set of people as well. When looking for significant variables to characterize information behavior he found the more important ones to be *education* among the demographic variables. Among the non-demographic variables he found the more important ones to be *media use* by the preferred information channels, *social networks*, from the preferred network to filter information, and *attitudes toward education, new technology, risk taking and innovation*. He later adds that an additional aspect of importance is how people perceive information, as different groups of people have different ways of structuring their universe.

### 3.2.2 The Settings

A second category refers to the variety and attributes of the setting in which the user is found, and the types and structures of information that generally move in a particular setting. Data in this category is used to answer which elements of a setting influence information behavior. Taylor found four general influences: A) *Importance of organization*, regarding how managers establish an attitude towards information affecting the information behavior of employees. In organizations where individuals have more autonomy this aspect will have less significance. B) *Domain of interest* refers to the objectives of the organization. There are certain attributes peculiar to the domain of what the organization actually does, such as educate adolescents, heal the sick or sell and service cars. C) *Access to information*, not only in a physical sense but also in a psychological sense. D) The *history and experience* of how the organization acquires information may be made routine and bureaucratic or specialized and compartmentalized.
3.2.3 The Problems

A third category concerns "the kinds and structures of the problems deemed important and typical by its set of people" (Taylor 1991:221). Taylor uses the term "problem" as related to "questions which specify, problems which connect, and sense making which orients" (Taylor 1991:225, original emphasis)—although the user may not separate them as categories—to examine the kinds of information that is sought and uses made of that information. He finds three general concerns of problems. A) Problems are not necessarily static or well defined. They may be vague dissatisfactions and the responses may be highly informal and serendipitous. B) It is recognized that a definable IUE has a discrete class of problems, particular to "the setting and by the exigencies of its profession, occupation, or life style," (Taylor 1991:225) problems which can be divided into categories and which provide contexts. Responses may be instrumental due to the nature of the problems. C) Problems have dimensions through more formal characteristics that have implications of judging the relevance of response. Taylor mentions four such dimensions: structure, complexity, agreement on assumptions, and familiar/new patterns.

3.2.4 The Resolutions

Problems are not usually resolved by single questions and answers but are in a process of resolution. Informants filter work information and cost-benefit analyses are made to satisfy the amount and quality of information to accept, and unwanted information is deflected. Taylor suggests eight different classes of information use from the needs of the users: Enlightenment, Problem Understanding, Instrumental, Factual, Confirmational, Projective, Motivational, and Personal or Political. The other side of this information-use coin Taylor finds to be the information traits found on eight continuums: Quantitative-, Data-, Temporal-, Solution-, Focus-, Specificity-, Aggregation-, and a Causal/Diagnostic Continuum.
3.3 Information Seeking Patterns

David Ellis studied the information seeking patterns of academic social scientists by interviewing 45 of his colleagues at the University of Sheffield for the purpose of reaching recommendations for improvement in design of information retrieval systems. He used grounded theory to break down 250 transcribed pages of material into their "basic behavioral characteristics" (Ellis 1989:172). Six categories were found to subsume the important characteristics: Starting, chaining, browsing, differentiating, monitoring, and extracting. While these six features, according to Ellis, may describe any information-seeking pattern, their interrelationship will differ between individuals and unique situations (Ellis 1989:178). Ellis regards this model to be applicable to other studies of the academic communication's process (Ellis 1989:202). And although he does not suggest it should be used outside of that field, I have included it here because of its clarity and the merit it may have in helping to understand and model other environments of information behavior.

3.3.1 Starting

Starting is the commencing of work (of a researcher) on a new topic or area in which the user may have little or no prior experience and familiarity (Ellis 1989:179). A strategy used in starting is often the use of informal contacts with colleagues and seeking out individuals that are knowledgeable in the area of asking for references to key works and authors. Other strategies are consulting bibliographies, abstracts and indexes from libraries and computerized information systems. Using references previously collected or newly recommended serves as starting points that lead to other strategies of finding information.

3.3.2 Chaining

Chaining may be the step following starting, but not necessarily so, as a normal procedure may be to follow up on referential connections between material (Ellis 1989:179). Following up on references from a

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22 Based on Ellis (1989: 171-212)
23 Informal contacts are often referred to as important means to find information. Especially in the many conducted studies of information use by scholars.
source (backward chaining) and identifying citations of a work in other sources (forward chaining) such as citation indexes, are normal procedures in research and is well documented in bibliographic research. As the same references start to reappear, and when new references show signs of diminishing returns, or when new citations lead to areas that are not of immediate interest, the chaining may be drawing towards closure, accompanied by a feeling of confidence.

3.3.3 Browsing

With browsing, Ellis refers to a number of forms of semi-directed searching in areas of potential interest, for which several typologies has been suggested, starting with purely random browsing.\(^24\) Ellis found browsing to be used in semi-directed and semi-structured searching of areas that are of potential interest. He also found it to be used as a means of maintaining awareness by scanning a choice of sources. Typically, browsing includes looking through content pages and browsing among shelves of books, periodicals and journals at a library, or following connections between items in a computerized database. The form of material was considered to be of little importance, but the presence of groupings of related material was important for browsing to be effective. Two aspects of browsing were found by Ellis to stand out. Familiarization, referring to the awareness of availability and of material in an area, and differentiation, as a result of the browser developing knowledge of how sources differ among each other.

3.3.4 Differentiating

Discriminating between sources and filtering on the grounds of the nature and quality of the material is a differentiating category of use. For the studied researchers, the ability meant clear perception of relative status, orientation and quality of journals. Being able to discriminate between sources in ways that may seem arcane to non-specialists was considered a reward of research specialization and a tacit knowledge of the field. "Differentiating is effected by the researcher identifying different sets of sources in terms of the differing probability of

\(^{24}\) (Ellis 1989:187) For a comprehensive overview of browsing, see Chang and Rice (1993).
their containing useful material” (Ellis 1989:190). What Ellis means exactly by “useful material” is unclear, but a clue may be his maintaining, "...a relatively sophisticated knowledge of the differences between these sources is required” (Ellis 1989:191). The usefulness may then be generalized as material that is judged by the expert user as valuable or needed. Criteria he recognizes as significant for differentiating are: 1) The substantive topic of a source, which is met by strategies to restrict a search to relevant sources. 2) The approach, or ‘school’ adopted in a source, which is accommodated by excluding certain sources based on their approach, and 3), the quality, level or type of treatment, which are met by the ranking of material based on its relative prestige.

3.3.5 Monitoring

By regularly returning to journals, newspapers, publisher’s catalogues and research directories, the researchers are found to maintain awareness of developments in a field. With the intent to keep up-to-date they also relied on colleagues and associates to bring other material to their attention. Some central sources are monitored more often, based on the probability that they will often contain relevant information. Other sources are considered more peripheral and are returned to only sporadically. As interest changed, the sources monitored change. The well-developed research field of informal communication uses concepts such as the ‘invisible college’ and ‘gatekeepers’ to research the significance of this information behavior.25 The strategies to keep abreast of developments differ among researchers and some rely more than others on informal networks. Typically, the more involved a researcher is in a field, the more important the informal communications for information gathering become (Ellis 1989:195).

3.3.6 Extracting

The final basic behavioral characteristic, as it were, is working systematically through a source to locate material of interest, referred to as extracting by Ellis. A close relationship was found between extracting and monitoring, where extracting is a more concentrated and directed

25 For an overview of gatekeepers see Metoyer-Duran (1993). For an introduction to invisible college see Price (1986).
activity. An important prerequisite to extracting is identification of useful sources (through chaining, informal recommendations or browsing). Some researchers had a few identified sources for which they had time set aside for regular extractions. In other instances a source that was monitored was seen to lead to extractions on a particular topic.

3.4 The Information Search Process

Carol Kuhlthau approaches the information seeking process from the perspectives of the users. She interviewed students and library patrons in five studies of affective and cognitive aspects of the information search process (ISP). She found that over the course of completing assignments, where students were to prepare research papers, there were six discernible stages involving common feelings, thoughts and actions (see Table 3:2). Kuhlthau describes the ISP as an initial state of information need and movement towards a goal state of resolution; not as a single incident but in a series of encounters with information within a space of time, by a series of choices made through a complex interplay between the three realms of activity, affection and cognition (Kuhlthau 1991:361, 362). The ISP is, according to her, the active process of forming meaning from information in a sense-making process (Kuhlthau 1991:362).

The six stages she found also correspond to other work on the information seeking process, from which she draws her theoretical stance.

3.4.1 Constructivist views on learning

An original inspiration for Kuhlthau’s work comes from George Kelly, a clinical psychologist that developed a Personal Construct Theory and

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26 The review of Kuhlthau’s work builds primarily on Kuhlthau (1991:361-371), and secondarily on Kuhlthau (1993:339-355)

27 In her research, students were to complete term papers, and library patrons had their own information seeking agendas. The fact that Kuhlthau’s model seems to work for assignments given and initiated on the users own accord, speaks for a more general interpretation of the model to everyday life situations. Also, the fact that her model is not limited to one isolated instance of information seeking activity, speaks for an understanding of it as a model to make sense of everyday life information behavior.
verified and refined John Dewey's view on learning as a constructivist process. The Personal Construct Theory describes affective experiences in personal processes of constructing meaning from encountered information. As new information is found it may contain inconsistencies and incompatibilities with the construct presently held by the individual. As a result, confusion will initially increase as the new information is encountered. In a second level, doubt of the new information may arise as confusion further increases. In a third level the new information may be perceived as threatening to the degree that it is discarded. But this is a turning point and the alternative is for the individual to form a hypothesis that incorporates the new information into existing systems of personally held construct (Kuhlthau 1991:362). Levels where the hypothesis is tested and assessed would eventually lead to a final level of reconstruction.

Psychologist Jerome Bruner, another of Kuhlthau's inspirations, further emphasizes the active part of the individual in the constructive process.

The interpretive task begins with perception when a person first encounters new information. The second phase involves selecting a process of recognizing patterns and the third phase involves making inferences by joining clusters and connecting categories. From the selection and inference, predictions are made in the fourth phase, what Bruner refer to as 'going beyond the information given'. The interpretive task is completed by action in the final phase that results in the creation of products of the mind. (Kuhlthau 1993:342)

Partly corresponding to these levels from a cognitive point of view, Taylor describes four levels of information needs. The first is a visceral need, which is an actual but unexpressed need for information (Kuhlthau 1991:363) in a vague sort of dissatisfaction that grows in importance with further investigation (Taylor 1968:182). Second is a conscious need, which is a mental description of an ill-defined area of indecision where explanations are ambiguous and rambling (Taylor 1968:182). Third is a formalized, stated need, where the area of doubt may be described (Taylor 1968:182), and fourth is the question as presented in a compromised need (Kuhlthau 1991:363).

### 3.4.2 The Information Search Process

Kuhlthau's studies proceeded from the hypothesis that information seeking is a process of construction, from the tradition of constructivist
views on learning. It proceeds in phases outlined by Kelly, Bruner, and others, in which users progress from uncertainty towards understanding (Kuhlthau 1993:342). Building on those and on her own extensive empirical work, Kuhlthau modeled the process in six stages of associated feelings, thoughts and actions (see Table 3:1, below).

1) Initiation. At initiation there is a lack of knowledge. Feelings are uncertain and there are vague thoughts about comprehending the task at hand. Trying ideas in the discussion of possible topics and approaches is usual.

2) Selection. At the following level, brief feelings of optimism are common as possible topics are identified. Conferring with other people takes place and browsing become more directed. Unless a choice is made here, anxiety may intensify.

Generally, the feelings of confidence and anxiety in the early stages of the process may result from the balance between unique information, which extends what we know, and redundant information, which confirms what we know. Kuhlthau notes that early search stages will contain less redundancy and that an accompanying uncertainty may lead to feelings of anxiety: "Too much redundancy results in boredom; too much uniqueness causes anxiety". (Kuhlthau 1993:350)

3) Exploration. In the exploration phase a lot of information is taken in to extend the personal understanding of the general topic, but it becomes difficult to express precisely what information is needed. As the state of confusion may be difficult to handle, some seek premature closure or abandon the project altogether (Kuhlthau 1993:349). A tolerance for uniqueness is needed, and strategies that leave the user open to new ideas, receptive and willing to take risk and accept the fact that information may seem inconsistent and incompatible with their understanding, are successful (Kuhlthau 1993:350).

4) Formulation. The turning point comes when it is possible to formulate a focus. Uncertainty diminishes, confidence increases and clearer thoughts on a narrowed topic are experienced. This level may emerge gradually or in a sudden moment of insight.

As a personal construct takes shape, motivation, intellectual engagement and interest increases (Kuhlthau 1993:352). Generally, Kuhlthau found interest to be an important factor through the search process and that interest increased as the user formed a personal understanding of the topic, and when a construction was well underway (Kuhlthau 1993:352).
5) Collection. The rest is work. The focuses need to be defined, extended and supported. Relevant information needs to be collected, and in this work interest further increases and there is a sense of direction.

6) Presentation. In the final level the task is to complete the search and prepare to make use of the findings. The search shows increasing redundancy in information encountered and that strategies to use the information are applied. If the work has gone well the user will feel relief and satisfaction. If it has not gone so well they will be disappointed (Kuhlthau 1991:368).

As the user moves through levels of information needs and related emotions, their judgment of relevance of the information encountered is likely to change. From the changing level of personal knowledge and problem understanding, what is encountered early on or later in the process is likely to be judged differently.
Table 3:1. Information Search Process (ISP). (Kuhlthau 1991:367)

<table>
<thead>
<tr>
<th>Stages in ISP</th>
<th>Feelings (affection)</th>
<th>Thoughts (cognition)</th>
<th>Actions (behavior)</th>
<th>Appropriate Task</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Initiation</td>
<td>Uncertainty</td>
<td>General Vague</td>
<td>Seeking background information</td>
<td>Recognize</td>
</tr>
<tr>
<td>2) Selection</td>
<td>Optimism</td>
<td></td>
<td></td>
<td>Identify</td>
</tr>
<tr>
<td>3) Exploration</td>
<td>Confusion Frustration Doubt</td>
<td>Seeking relevant information</td>
<td>Investigate</td>
<td></td>
</tr>
<tr>
<td>4) Formulation</td>
<td>Clarity Narrowed Clearer</td>
<td></td>
<td></td>
<td>Formulate</td>
</tr>
<tr>
<td>5) Collection</td>
<td>Sense of direction Increased interest</td>
<td>Seeking relevant or focused information</td>
<td>Gather</td>
<td></td>
</tr>
<tr>
<td>6) Presentation</td>
<td>Relief Satisfaction or Disappointment</td>
<td>Clearer or focused</td>
<td>Complete</td>
<td></td>
</tr>
</tbody>
</table>

3.5 Information Behavior

Tom Wilson suggests that experiencing a ‘problem’ will result in a level of stress, which will motivate the seeking of information and thus, in stages, reduce uncertainty and resolve the problem. In order to make sense of this process, Wilson has attempted to build a general model of information behavior. In a 1981 article (Wilson 1981), Tom Wilson suggested and popularized the term ‘Information seeking behavior’ as an exchange for the long used ‘Information needs’ on the grounds that a behavior is observable whereas a need is not, since it is a mental state. The 1981 model was later revised to the model below (Figure 3:1), and it depicts a context, intervening variables, action and a feedback-loop back to context. The context is where a need arises relating to the person in different social roles and in different environments. Barriers relating to the person, to the social roles and to the environments may restrain the individual from engaging in information behavior. These four main elements—context, intervening variables, activity, and feedback—remain core elements of Wilson’s
model, although it has been extensively revised. In this section, Wilson’s revised model in Figure 3:1 is introduced.

Figure 3:1. Wilson’s general model of information behavior. (Wilson & Walsh 1995) Reprinted by permission of the author.

3.5.1 Context and Information Need

(N)eed is a subjective experience that occurs only in the mind of the person in need and, consequently, is not directly accessible to an observer. The experience of need can only be discovered by deduction from behavior or through the reports of the person in need. (Wilson & Walsh 1996: chapter 2.2)

Wilson makes note of the good deal of attention that has been given the concept of ‘information need’ and argues that it is a secondary need that arises out of primary needs such as the need for shelter or sustenance, and that a primary need of hunger may drive us to a restaurant guide (Wilson 2000:51; Wilson 1997:39). Although the relations are ambiguous, Wilson draws on results from findings relating to needs, motives and gratification theory. There is no system of need suggested,

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28 In a 1996 review of research on information seeking behavior performed in fields other than the Information Sciences, Wilson suggested the revised model, which has since been referred to as "a general model of information behavior." (Wilson & Walsh 1996; Wilson 2000) and as a model "only to deal with active searches" (Wilson & Walsh 1996).
merely the observation that needs may be physiological, cognitive and affective; that motives relate to needs through beliefs of expected returns from behavior and gratification.

In the search for a comprehensive understanding of need as a preset to engage in information seeking behavior, Wilson has abandoned the concept of need in later works. In the "uncertainty project" (Wilson 1999) needs are not treated explicitly, but as 'problems,' described in the following quote:

"stress/coping" theory has much to offer as a theoretical basis for the origins of information seeking. In this theory, stress (which may be of varying strength) provides the motivation for information-seeking, and we suggest that stress is the result of experiencing a problem of some kind. (Wilson 1999. Original emphasis)

Instead of searching for the evidence of needs, Wilson thus suggests that situations offer indices of stress that need to be coped with (Wilson & Walsh 1996: chapter 2.5). And furthermore, that people react differently to stress, either by attending to the situation and searching for information to cope with it, or by avoiding the situation altogether and not engaging in any information seeking behavior.

3.5.2 Constraints and Enablers

Individuals that have a tendency to avoid further information when facing a situation that is perceived as threatening will leave the model at this point, and those that react by wishing for more information will continue as part of their coping strategy.

Other constraints (and enablers) relate to the three domains where stress is experienced and need is perceived, i.e. the personal, social and environmental domains. On top of these there are also constraints and enablers that relate to the nature of information source channels.

The personal domain. Among the more significant psychological barriers to engage in information seeking behavior is cognitive dissonance, which is the tendency to avoid conflicting cognition. Another is selective exposure, which is the idea that individuals tend to expose themselves to ideas that are in accordance with their interests, needs and attitudes. Still others are variations of psychological, cognitive and emotional characteristics, educational level and knowledge base, age, sex, and economic factors in respect to time and money.
The social domain. The attitude of other people and their very absence or presence is significant to the success of some information behavior. The established behavior of others may act as a barrier, such as in the propensity of sharing information in a group or organization.

The environmental domain. Wilson notes three main environmental barriers to engaging in information seeking behavior. Time is a barrier mainly by being scarce and due to the fact that others compete for the same time-slots which leads to interruptions. Geography is an obvious barrier in its coercive nature and distance from resources may be a major obstacle. National cultures differ in how information behavior is perceived. Such differences as power, distance, uncertainty avoidance, individualism versus collectivism, masculinity versus femininity, long- or short-term orientation to life, may all pose problems.

Information source characteristics. Wilson’s final domain of intervening variables concerns the information channels utilized in many information behavior, not only seeking. The most obvious obstacle is access to the source, another being the perception of credibility of the source, i.e. the user’s judgment of how well a source may be trusted, depending, for instance, on perceptions of quality and accuracy. Credibility also extends to the very channel of communication, such as where face-to-face communication is considered trustworthier than newsprint (Wilson & Walsh 1996: chapter 5.5).

3.5.3 Behavior and Activity

Before the modules of overt behavior, Wilson models yet another intermediary stage of decision making. He models a deliberation on what the user might risk or gain by engaging in information seeking behavior. Wilson found that several modes of risk can be perceived in setting out to search for information. Among the ones he mentions in an example of consumers’ behavior are performance risk (will the product perform to expectation?), financial risk (can it be found at a better price?), physical risk (will I or my property be put in danger?), social risk (will it impress?), ego risk (will it make me feel good?), and additional risks concerning safety, time and convenience. The risk/reward theory leads to the statement that consumers who perceive higher risk will seek more information.

However, the ability to tolerate uncertainty varies between individuals and it is possible that people do not always measure risk and reward. It also varies among individuals as to what degree of certainty
they expect to be able to perform the desired outcome of a behavior. This ‘sense of personal mastery’ is a central construct to social learning theory. It may be assumed, according to Wilson, that “an individual may be aware that use of an information source may produce useful information, but doubt his or her capacity properly to access the source, or properly to carry out the search” (Wilson & Walsh 1996: chapter 5.2). This is taken to mean that the individual construct of self-efficacy would have a notable effect on the propensity to engage in information seeking behavior.

When it comes to the actions and the behavior of the individual, four modes of ‘searching’ are suggested, of which the first two “may be better termed acquisition”: (Wilson & Walsh 1996: chapter 5.2)

passive attention: Such as listening to the radio or watching television programs where there may be no information seeking intended, but where information acquisition may take place nevertheless;

passive search: which seems like a contradiction in terms, but signifies those occasions when one type of search (or other behavior) results in the acquisition of information that happens to be relevant to the individual;

active search: which is the type of search most commonly thought of in the information science literature, where an individual actively seeks out information; and

ongoing search: where active searching has already established the framework of ideas, beliefs, values or whatever, but where occasional continuing search is carried out to update or expand one’s framework. In consumer research, Bloch, et al, (1986) define ongoing search as that which is independent of specific purchase needs or decisions and that the motives are to build knowledge for future purchase decisions and simply to engage in pleasurable activity. (Wilson & Walsh 1996: chapter 5.1)

Unfortunately, the four modes are not expanded upon further. Additional written information about behavior regards a brief note on the process of interaction between people and texts versus the interaction between people and computer systems.

Finally, Wilson proposes in his model a box titled “Information processing and use,” which may be said to contain everything except need, barriers and behavior. The function it has in the model is to provide a feedback loop from behavior to need. Wilson disclaims that
behavior necessarily leads to processing or use and reminds us that processing is as inaccessible to study as need is. The close association between processing and learning is noted, though, and discussed briefly, with the conclusion that it needs further extension.

A general comment, in conclusion, is that Wilson argues for, and reasons about, a model of behavior that is general and concerns information behavior. But in describing and expanding upon the model he refers to it as ‘information seeking behavior’ and says that his "formulation of the information seeking process implicitly takes active searching as the principle mode" (Wilson & Walsh 1996: chapter 5.1). And he concludes by noting that his model needs to be expanded further "to include other modes of information seeking which may have different characteristics" (Wilson & Walsh 1996: chapter 7.1).

3.6 Concluding Remarks

Now it is time to introduce my own analytical model. As I do that I will refer back to contributions of research introduced here, where there are aspects of it that translate to the phenomenon of study in this project:

Taylor’s Information Use Environment is understood to be translatable to contexts of everyday life, and I discuss it in section 4.2.

Ellis’ examples of information behavior in an academic setting are possible to translate, in part, to non-expert users in everyday life. In section 4.4 I make use of his behavioral characteristics that appear to be translatable, if not always by name, then at least partially by significant content.

Among the findings that Kuhlthau has made is that the process aspect of information behavior is adopted throughout the model. More specific contributions are the significance incumbent on information behavior to all three realms of affection, cognition, and behavior, which are translated to my research primarily in section 4.5.

The affinity of my approach to Wilson’s is the ambition to offer a holistic model of information behavior. In section 4.1 I introduce how I borrow from him the method of making it a system consisting of four parts. I draw also on his use of intervening variables, although I focus mainly on what he calls ‘information source characteristics’, and offer my translations in section 4.3.
4 Proposing a Model of Human Information Behavior

4.1 Introduction

One of the dominating human activities besides sleeping and eating is to send and receive messages. (Hägerstrand 1985:214)

The use of information systems in everyday life is framed by circumstances that make up the context of use. It is probably not possible to study comprehensively every circumstance of importance to the overall context, but it is possible to select a few circumstances that are central to the make up of the complex whole, that makes for the warp that binds the weave. In chapter 3 several circumstances have been introduced as significant to make sense of uses of information systems. Tom Wilson’s model (Figure 3:1) is in my opinion the best summary of significant circumstances, with its focus in four parts: 1) To the person in the context and their particular needs. 2) To intervening variables such as the particular characteristics of the individual and of the information sources. 3) To the actual behavior of the individual. 4) To the use that is made of information and how it is significant to the person in the context for another iteration through the model. I will make use of Wilson’s choice of significant circumstances for uses of information systems, but I will not make use of his actual model. The prime reason for not doing that is that Wilson’s work is directed to understand the use made by the isolated individual, while this study is including (micro)social significance. Wilson’s study is also limited to searching for information, whereas this study includes other kinds of activities related to information as well.

On the following pages I am going to develop an analytical model of information behavior. It is a new model and it reflects my view of

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29 For the readers that have skipped previous chapters, I can inform them that any critical concepts that are not offered a definition in this chapter will most likely be found in the glossary.

30 For an overview of the use of 'context' in user studies, see Dervin (1997).
how it is possible to study, in concert, issues that previously have been studied separately. As far as I can tell there is no suggested alternative available to do this. This undertaking is an exploration of a new path in user research and it differs from other models in four ways: 1) It includes uses of any kind of information system, 2) it concerns the circumstances of everyday life, 3) it includes the presence of other people, 4) it concerns all forms of information activities, not only seeking and gathering information.

In order to build the model I draw upon theories and concepts that are discussed in chapter 3 and from data that have been collected from ten respondents. Arguments for the emerging model is supported further by a body of other research compiled by numerous researchers over many years. As several strands of prior research are brought together there will be some overlaps and some gaps as the pieces do not fit tightly together. In several such cases I introduce new terms and concepts. These will be verbs that are intended to be suggestive and somewhat open, and they are used analytically rather than as in everyday talk. The ways that the respondents are speaking about what they are doing is translated into such categories, and although no one would admit to having an ‘information behavior’ in the first place, I argue that it is in fact a good way to describe interactions with information systems. Perhaps more important than the labels that are chosen for these neologisms is the substance of what they are intended to represent, and how well this is stated in the text.

Starting with Wilson’s model (again, Figure 3:1) and stripping it from the particular categories of intervening variables and forms of information seeking, there is a bare-bones illustration of the process of information behavior in four parts (Figure 4:1, below) that roughly corresponds with Wilson’s four parts. This simple circular model serves to structure empirical findings from my own research as well as drawing together other relevant research to one of the categories of ‘Environment’, ‘ICT-Setting, ‘Information-Activities’ and, ‘Outcome & Change’. All four elements of the process are understood as rather stable circumstances of the general context of using information systems, and the intention is to highlight certain aspects of the context-bound process. Although these categories in their schematic isolation are idealized, they are to some extent overlapping and dependent. The process of information behavior is understood to be rather like a constant flow, where “reality is in a continuous and always incomplete process of becoming” (Dervin 1997:18)
The individual relates (a) to an Environment, which serves to encompass the properties of the setting in which activities take place and to the people populating that setting. The environment is an idealized starting point for action, and as such it is a reservoir of knowledge and previous experience. It consists of prerequisites for the particular information-activities that are undertaken by the individuals, through their social networks and the problems and projects that make up the environment. The environment was introduced first in sub-section 3.2.2 and is discussed further in section 4.2.

The individual also relates (b) to an ICT-Setting in this model, which represents the significance of ICTs as intervening variables for action by providing the physical means to access information. It is the idealized part of the process where the people in the environment meet with the technologies that mediate information (A). As the environment refers to a predominantly social space, the ICT-Setting refers to a predominantly technical space (Venkatesh 1996). The ICT-Setting is the part of the information use environment that is significant for physical access to information. This is taken to include the computer, the telephone and the television, but also other information and communication technologies and artifacts that mediate information, e.g. books and papers. These are all understood as resources that are drawn upon in engaging in information-activities (B). What is available here as resources are critical enablers for the subsequent activities, but they
also pose obstacles to be overcome that constrain the extent to which they can be used. The ICT-Setting is introduced in terms of the significance of information systems throughout chapter 3, and is elaborated on in section 4.3.

The behavior of the individual is here modeled as Information-Activities, which stands for the actual uses that are made of the resources and social interactions with other people. Here the focus is less on the technological aspect of the ICTs and the practical actions of handling them, and more to their service-aspect in providing the meeting with the information. Information-Activities are the sets of behavior that people display (c) in their interaction with information. Basically it is a matter of seeking, gathering, communicating and giving information. Information activities are introduced in the different parts of chapter 3 as forms of behavior, and are discussed extensively in section 4.4.

Outcome & Change serves to describe outcomes of the information-activities (C), and the leverage that may be exerted on the environment (D) by bringing about change to its reservoir of knowledge and experience. Outcomes of information-activities can be seen as they are feelings, thoughts and actions of the individual (d). Some outcomes are temporary and others more lasting. The more durable outcomes may induce changes that appear as modifications of behavior or of available resources, thus the broken arrow leading back to the Environment in Figure 4:1. Outcome & Change is introduced as a matter of process in section 3.4, and discussed further in section 4.5.

People, ICTs, behavior and the involved processes are what this model is intended to describe in terms of their significance for the overall context of using information systems in everyday life. Of course, there are also other circumstances that could have been chosen, e.g. language, culture, history, or economy, but that would make it another project. In this chapter, the model is expanded upon by relating it to previous research and suggesting relevant elements. In chapters 5 through 8 the empirical material (from which the model also is partly developed) is introduced, and analyzed, using the structure of the model.

**4.2 Environment**

What in Wilson’s model is referred to as ‘Context of information need’ and ‘Person in context’, (section 3.5) is here understood as the ‘Environment’ to which an individual relates. Environment is taken to en-
Venkatesh and his colleagues find it useful to conceptualize the domestic sphere as social space, physical space, and technological space, in order to understand the nature of impact of new information technology on the home and its social life (Venkatesh 1996, Venkatesh & Mazumdar 1999). These spheres are, they say: "closely linked by the very nature of household dynamics and activities" (Venkatesh & Mazumdar 1999:3). As will become clear in this section, Venkatesh’s conceptions of social space and physical space correspond very well to what I here refer to as environment. The understanding of Venkatesh et al. of technological space is discussed further in section 4.3 as ICT-Setting, specifically referring to information and communication technologies and more generally to other forms of information systems. More specifically, the environment is in practice often equal to ‘household’ and the members of the household. But the environment is also understood to reach further afield than the actual household and cover other spaces where the individual is active.

4.2.1 Everyday life as Information Use Environment

The environment domain of everyday life may be seen as an Information Use Environment (IUE), as it was described in section 3.2, and it consists of four building blocks: Sets of people, typical settings, typical structures of problems, and resolutions of problems.

People

Taylor does not specifically mention the role of people in the setting other than as objects of study. It is central though, that virtually any setting is populated by other people, whether it is an organization, a community or a household. It is clear that information deserves to be studied as a fundamental social attribute, and failing to base his model in a theory of social action has led to criticism (Pettigrew et al. forthcoming: Rosenbaum 1993). I add, therefore, that people of the environment, other than the individual being studied, are significant for the activities that take place, no matter which social theory one chooses to
label the interaction with. But more important is that the model that I develop is open to social interaction and the influence on the individual by the presence of a social context. The people of importance are the ones other than the respondent that relate to the environment, either as members of the household or the extended personal network of the respondent that matters in terms of their connection to an information-activity performed by the respondent.

Setting

The attributes of the setting to which the user relates, whether it is an organization or non-work context, may on reasonable grounds be assumed to have significance for much the same reasons. The IUE-model (see section 3.2) focuses on the importance of the nature of the organization, the domain of interests in it, the access to information within it, and its history and accumulation of experience as elements of the setting, which influences information behavior. These are aspects as equally real to households as they are to organizations (although not to the same formalized and institutionalized extent). In this study, the setting is the everyday life, non-work situations of the respondents. It is a setting that contains everyday life-activities, such as preparing food, keeping the house clean, raising children and generally living large parts of their lives. It is also in this setting that the particular information systems are found. Taylor points out the importance of access to information, especially in a psychological sense, to understand the information use environment. Also, others have further developed theories on the significance of psychological and social influence on information behavior (Pettigrew et al., forthcoming). A good example is the work of Alfreda Chatman.

Chatman's theory of 'life in the round' (Chatman 1999, 2001) can further illustrate aspects of environment that influence information behavior. She develops three concepts to base the conception of life in

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31 Exchanges of information, and other resources, within an environment are the object of specific study in network sociology. For a review of network analysis in sociology, see Turner (1997). For general social network analysis, see Wellman (1982) and Wellman et al. (1996). Social network analysis with a personal network approach is described in Garton, Haythornwait and Wellman (1997). Use of network analysis in recent studies of information behavior is reviewed in Pettigrew et al. (forthcoming).
Proposing a Model of Human Information Behavior

the round: social norms, self-protective behavior, and worldview. Her theory reveals how small-world social settings involve high social costs to acquire information, which leads to an information-impoverished world:

In essence, life in the round adversely affects information seeking for day-to-day situations because people do not search for information if there is no need to do so. Small world inhabitants will choose to ignore information if they perceive that their world is working without it, i.e., they have enough certainty, comfort and predictability that the need for information is negated. (Pettigrew, et al. forthcoming)

Understanding Environment as the social world of the respondents, they have standards of this world to comply with—its social norms. And it prescribes their self-protective behavior and worldview. Even if none of the respondents is socially marginalized or lives in a small world, Chatman's theory of how social world carries norms which prompts behavior should sensitize the researcher to such processes. 32

At issue are the values and attitudes that permeate the environment and how they relate to the activities that take place in the environment as a matter of lifestyle or, speaking sociologically, its ‘habitus’ (Bourdieu 1984; Savolainen 1995) or ‘structure’ (Giddens 1984; Rosenbaum 1993). This matters as some lifestyles support active information searching while others deny its value (Chatman 1987; 1991; 1996). The values and attitudes of the setting convey a foundation for assessing what is important and valuable to pursue and what is not. It is sedi-

32 The social world carries structures that are independent of the free will and consciousness of the individual. Bourdieu (1984) refers to these mental or cognitive structures as ‘habitus,’ and it is a product of the making of collective and individual history, and a function of the historical context in which it is produced. (Ritzer 1992) As such, habitus does not condition thinking and action as much as it suggests thoughts and decisions, since it carries the principles from which decisions are made. (Nilsson 1997) If Environment should be understood not as a transitory physical and social space but is extended to embrace the full history and experience of an individual life, it would be similar to habitus. Potentially, Environment would suggest which information is found to be valuable, educating, interesting, and entertaining, and which is found to be worthless, useless, incomprehensible, and boring. Applied to a study of information seeking habits in everyday life, Reijo Savolainen (1995) used the habitus theory to develop how social, cultural, economic and psychological factors can be understood as ‘way of life’ and ‘mastery of life.’
mented by history and experience and exhibited in interests and actions of the individual.

**Problems**

‘Problems’ are a part of what makes people engage in information-activities but does not have to be what we normally consider a problem to be solved. Rather, ‘problem’ is a keyword for needs, wants, desires, requirements and demands for information:

A ‘problematic situation’ ... is the situation of an individual whose internal models of environment, knowledge, actions, etc. are insufficient for that individual to attain the appropriate goals; that is, whose models of the situation is such that it may require input from external sources in order to attain the action. (Belkin & Vickery 1985:14)

Problems are not necessarily well defined or static in organizational domains, as Taylor argues, neither should they be expected to be so in everyday life. He also argues that a defined IUE has discrete classes of problems which are particular to “the setting and by the exigencies of its profession, occupation, or lifestyle” (Taylor 1991:225). As an Information Use Environment, the everyday life is, in this case, the particular setting to which a distinct class of problems belongs. Problems as ‘problematic situations’ appear as a course of everyday life. And information-activities may be understandable, and ideally predictable, in light of what life-activities are going on in the environment by the exigencies of lifestyle.

**Resolutions**

In Taylor’s IUE-model the characteristics of the problems have implications to the relevance of response to it in order for a resolution to occur. In everyday life there is no obvious reason that the process to resolution should be that much different. Resolutions are discussed further in chapter 4.5 as the outcomes of information-activities.

In conclusion, Taylor’s information use environment model can usefully describe an environment of everyday life as well as organizations to which it has been applied (see section 4.2). Translating it to

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33 Compare also ’problematic situation’ with ‘gap’ as used by Brenda Dervin (1980).
everyday life requires a stronger social footing to be fully applicable, and the problems that are particular to an environment of everyday life need to be further elaborated upon.

**4.2.2 Structure of problems typical for the context of everyday life**

If it is important to understand ‘problematic situations’ in order to make sense of information behavior in an environment, what problems can be expected in the everyday life environment?

One approach to study everyday life is time-geography. Applied to organizations and to domestic settings, the time-geographic approach is used to capture the activities and movements of people through time and physical space. Tasks that the individuals are performing, environments they are located in and move through, and social meetings along the way, are captured, categorized, and charted. Members of organizations and large samples of the general public have, in various time-geographic undertakings, shared the minutiae of one full day, and more, through diaries with precision down to the minute. For the context of everyday life an extensive matrix of activities has been compiled for the purpose of categorizing such material. In Table 4:1, the first two levels of categories are introduced. On these levels the categories are mutually exclusive while there are redundancies on finer levels of detail, and an activity such as ‘waiting’ is pervasive among any of the top categories.

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34 Time-geography is a branch of Geography, and it is sometimes referred to as time-space geography.
Table 4:1: Top two categories of time-geographic matrix of activities in everyday life. These categories are developed within the framework of time-geography. They are credited to Kajsa Ellegård, personal communication, April, 2000

<table>
<thead>
<tr>
<th>Level 1-categories</th>
<th>Level 2-categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caring for oneself</td>
<td>Eating / Sleeping / Personal hygiene / Going out-coming home</td>
</tr>
<tr>
<td>Caring for others</td>
<td>Feeding / Clothing / Hygienic care / Playing / Bring together with others / Put to bed / Aiding &amp; Rising</td>
</tr>
<tr>
<td>Household care</td>
<td>Cleaning / Mending clothes / Mending things / Household administration / Purchases / Gardening / Construction work</td>
</tr>
<tr>
<td>Reflection and recreation</td>
<td>Social relaxation (e.g. entertaining guests, speaking on the phone) / Personal relaxation (e.g. reading, watching TV, listening to music, pursuing hobby)</td>
</tr>
<tr>
<td>Transportation</td>
<td>Transportation of oneself</td>
</tr>
<tr>
<td>Procure and prepare food</td>
<td>Acquiring / Preparing / After-work</td>
</tr>
<tr>
<td>Gainful employment</td>
<td>Working</td>
</tr>
</tbody>
</table>

In order to distinguish information behavior I separate everyday life activities into those activities that are corporeal movements in space and time that imply the manipulation of physical reality and call them ‘life-activities’, and those that involve manipulation of information and call them ‘information-activities’. Whether information-activities

35 More specifically, ‘activity’ refers to an action taken by an agent (in this case the agents are people) meaning "the performance of some physical or mental process" (McLeod 1987:10). To distinguish activities as relating to either “physical” or “mental” processes, labeling the forms or dimensions of action becomes important. Action may, for instance, relate to one of the three different worlds suggested by Popper (Popper & Eccles 1977): To World 1 as the realm of physical objects and states, to World 2 as the realm of subjective mental states, and to World 3 as the realm of cultural products. Activities may differ in how they relate to each of the three Worlds, and three labels of action that would correspond to the three Worlds could be respectively practical action, reflexive action and communicative action (drawing on Rasmussen 1996). All three forms of action may reasonably be thought of as part of everyday life activities. All three forms of action are part of what is studied in time-geography as they study different physical manifestations of everyday life, i.e. the World 1 representations of World 2 processes and World 3
really should be regarded as special cases of life-activities, or if a
distinction between them reveals more fundamental differences may be
an important issue, but is not of immediate concern here. For the
meantime these dimensions of activity may be regarded as two sides of
a coin where both deserve careful study. A close look at the literature
reveals arguments for doing this in "calls for [Information Studies] to
deal more centrally with... the general effects of the user's culture, and
the specific effects of the user's unique spatio-temporal setting (e.g.
Dervin 1983; Paisley 1968; Wilson 1981a)."

Life-activities are quite well known and the categories above,
which have been formed around those activities, have proven stable for
people in different life-situations and in different cultures. Every
single physical activity that we do in going about our everyday lives
falls under one of these categories. This approach does not, however,
take into account information-activities in the sense that they are pur­sued here. Information-Activities are any activities that involve medi­ated or unmediated communication of information. They differ from
life-activities by having an emphasis and direction towards information
rather than physical activity. While life-activities do indeed involve
elements of information processing, the activity is colored by physical
manipulation. Information-Activities, as they appear in time-geo­
graphy, are pervasive among all different categories.

Distinguishing information-activities from life-activities as two
groupings of activities which make up everyday life may benefit any

'objects' (Ellegård 2001). The intention of the label 'information-activity' is
to speak of everyday life activities where the individual interacts with World 3
objects (abstracts, e.g. ideas, theories and messages), by the means of World 1
objects (concretes, e.g. books, ICTs and telephones), and World 2 processes
(e.g. self consciousness, assessment and perceptions). 'Life-activities' must
also involve all three Worlds, but a significant difference is that the agents'
use of World 3 objects are of such known objects, i.e. the agent does not go
outside of themselves, so to speak, to reach them. 'Information-Activities'
concerns the reaching of World 3, of drawing from it and contributing to it.

Belkin & Vickery (1985:10). The authors point more specifically to general
cultural aspects such as political systems, membership groups, reference
groups, invisible colleges and legal and economic systems.


Except for the category, gainful employment, which consists only of one
level of detail as it is used to denote the time of day when one is working,
without further precision regarding the work.
research of the domain of everyday life where one is interested in both the material and the immaterial aspects of action. The more immediate purpose here is to have life-activities be the match to information-activities. Recognizing a bond between life-activities and information-activities, where the problematic situations are the same for both groups of activities, can make this match. The structure of problems typical to the context of everyday life is thus suggested to be found in the categories of life-activities in the table above.

While it is possible to find relations between information-activities and life-activities through the problem domains, this will only tell us so much. 'Problems' connotes isolated events that are possible to define, assess, act upon, resolve and forget. In everyday life things are not often so linear and isolated.

4.2.3 The Environment as Problem Domain

Everyday life, as it is conceived in Time-Geography, may be described as an unbroken sequence of activities where each activity relates to the circumstances of some 'project' (Ellegård 1993:32-34). 'Living life' is the most superior project and 'child-rearing' and 'gardening' are projects of a lower order. Such projects appear in activities that are related to each other but scattered in the chain of events that make up everyday life. The seven categories of life-activities that are discussed as problem domains above are thus also understandable as seven projects. I argue that there is something special about them as they are generic; common for all. Projects can also be more specific:

A project can be on any scale, from writing a letter to organizing a general election. The smaller projects, or acts, if you like reside in the larger ones much in the same way as words reside in sentences and sentences in stories" (Hägerstrand 1985:201)

(I shall return to discuss generic and specific projects shortly.) Everyday life consists of many different projects. When the attainment of some goal within a project requires input of action or information, there is a problematic situation, which is resolved by such input. Or the

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39 It is recognized that any activity involves both material and immaterial elements as a situated activity always involves changes in knowledge and action (Chaiklin & Lave 1996:5).
other way around: each singular action is in response to a problematic situation that pertains to some project.

Information behavior has been said to be expressions of a 'need' for information, and it has been argued that an information need is not a basic need but a secondary need (Wilson & Walsh 1996). An example that is suggested is the need for information on where to eat (Wilson 1997), which is really only a secondary need for information on how to fulfill the basic need for food. By the same reasoning, many life-activities are also expressions of secondary needs. To elaborate on the example, shopping groceries, preparing a meal and setting the table, are all secondary to the primary physiological need for food. Both life-activities and information-activities may thus be similar in being expressions of secondary needs. Moreover, they complement each other by being necessary activities in the pursuit to fulfill our diverse basic needs. One may well expect an intimate relation between these two forms of activities and their mutual relation to basic needs by way of their relation to a project, much like that suggested in Figure 4:2 below:  

Figure 4:2. Relation between need, project and activities

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40 Basic needs have been described as deficiency needs and growth needs. A hierarchy of needs begin with three levels of deficiency needs: 1) Physiological needs such as for food and water; 2) Security needs such as for shelter, stability and continuity; 3) need for Acceptance and Love. Thereafter follow two forms of growth needs: 4) need for Esteem such as one gets from a stable self-image and 5) need for Self Actualization through finding and fulfilling one's potential. (Maslow 1971)
In life-activities, there is a connection to information needs as expressed in studies of the general public. These often mention the need for information in relation to food and consumer issues, medical and health issues, public issues such as child care, taxes and available services, issues regarding career, employment and education, and housing issues (Rieger & Anderson 1968; Turic 1973; Mier 1972; Dervin 1973; Dervin et al. 1976). This establishes a relation from life-activities to information-activities (a), but the relation also operates in reverse: In order to engage in information-activities one needs to approach and handle information systems (which very well can involve life-activities e.g. transportation). This establishes a relation from information-activities to life-activities (b). Furthermore, the example of cooking food as a life-activity that relates to a basic need has already established the relation between basic need and life activity (c). It is also reasonable to assume a relation between basic needs and information-activities, not by way of life-activities but directly, as an information-activity can be engaged in for the reaffirmation of the self-image (see also the most recent footnote) or for reduction of uncertainty (d). But since these relations (c and d) are not possible to show, a pragmatic approach is to conceive of the relations from basic needs to activities by way of how they relate to a project (e). Both life- and information-activities relate to a project, as it is the domain where a problematic situation appears that requires the input of such activities (f) (Belkin & Vickery 1985; Hägerstrand 1985). There seems to be ground for speaking of a system of connections between basic needs, life-activity, information-activity, and project, as interrelated and dependent on each other.

It has been pointed out that the needs or problematic situations that elicit information behavior belong to the realm of the setting, to the people and the involved realities thereof (Wilson 1981; Taylor 1968; 1991). It has also been pointed out that information needs are not readily available for empirical research as they are processes that are not available for observation. For the individuals, needs are also ambiguous to the degree that they are hardly available by introspection (Faibisoff & Ely 1976; Krikelas 1983; Wilson 1981; Harmon & Ballesteros 1997). Still, in order to understand everyday life information

41 As a related concept, 'ontological security' refers to the continuity of an individual’s self-identity, from the consistency of the surrounding social and material environment. (Silverstone 1994; Giddens 1984)
behavior it is important to have some idea of which needs are involved, and what the problems are that elicit the information-activities. Considering this, I suggest a connection (Figure 4:2) between the overtly available information-activity and the overtly available life-activity, by understanding the concept of project as the domain of problems to which they both relate and are a response to. By doing so, the information activity may become understandable in respect to a life-activity, of which we know more than what we may see of the basic needs that are at play. As an Information Use Environment, the ‘discrete class of problems’ in the setting of everyday life, is presented by the projects that life-activities are already known to relate to, and bonds between life-activities and information-activities exist by their interdependence.

With the seven categories of life-activities as problem domain for the information-activities established as part of the model, it is possible in the analysis to ask the material for relations between information-activities and environment. This provides a grounding of the information-activities to an underlying project and it illustrates how the environment provides problematic situations that call for information-activities. The connection between realms of activities may be regarded as a version of an argument made that information behavior is a general aspect of human behavior, a ‘hard wired’ function where:

... information relates to human behavior explicitly within the realm of problem management, where problem is taken in a very wide sense. /.../ In this sense, much of human behavior is concerned with problem management, and the role of information is to be supportive in the appropriate management of such problems. (Belkin & Vickery 1985:17-18)

Furthermore, the information needs that form the basis for a problem may be immediate needs that may be shaped by a life-activity, or deferred needs, which are latent needs for information that may be utilized at a later time (Faibisoff & Ely 1976; Krikelas 1983). A hunter/gatherer analogy may be drawn, where the immediate need is a call for information to be hunted down, and the deferred need is a call for information to be opportunistically gathered. Need may also be unconscious to the individual, being a visceral need that is actual but
unexpressed (Taylor 1968:182). When the need is conscious the individual has a description of it within the brain.  

### 4.2.4 A Problem Domain is a Project

As all activities relate to projects and even the isolated act itself is understandable as a small project (Hägerstrand 1985), labeling of the projects is paramount for it to be a useful concept. Applying the principle of Ockham’s razor, which states that an explanation of anything should be as simple as possible, but no simpler, a project ought to be labeled in such a way that it covers the purpose of the project, but not more. The project of 'gardening' should therefore, not be labeled as 'leisure' or 'digging' as the first is too general and the other too specific. Moreover the naming should be done with the words of the respondents, or such words that are acceptable to them, to form empirically based categories.

It should be recognized that the concept of project implies something like a plan, "...a blueprint for a specific future" (Hägerstrand 1985:201) but that activities in everyday life are better understood as situated "in the context of particular, concrete circumstances" (Suchman 1987: viii. See also Chaiklin & Lave 1996; Wenger 1998; Brown & Duguid 2000). The respondents are not likely to conceive of the activities that make up their everyday life as parts of projects in all instances, although they may have an idea as to what they pertain to. Neither are they likely to have a plan for carrying out their objective except as ad hoc rationalizations for actions already taken.  

I have already suggested that projects of any environment can usefully be conceived of as either generic or specific. The generic projects are understood to be common for all members of an environment while the specific projects are common only to one individual or a sub-community of the environment. The seven top categories of life-activities (Table 4:1, above), are in this sense seven generic projects. These projects have been identified in time-geographic studies of everyday

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42 Belkin & Vickery (1985). As the need is stated it is *formal*, and finally as a question is presented to an information system, the need is *compromised*. These last two forms of need are parts of the information behavior and will be discussed further when dealing with information-activities.

43 (Ellegård 2001) refers to the framing in projects of activities that have already been taken as 'project circumstances.'
life while Information-Activities have not been studied per se, but appear under the heading of Reflection & Recreation. I have interchangeably referred to these categories as ‘life-activities,’ ‘problem domains’ and ‘projects’. The intention is to make clear that these seven life-activities are the domains in which situations occur that call for action. Time-geography is a school of thought where categories that describe everyday life activities are offered, and for that I ascribe to the categorization made by Ellegård (Ellegård 2001). These categories are the result of studying corporeal movements in space-time and I assume that they are satisfactory for that purpose, but they are not necessarily descriptive of everyday life activities where information-activities are specifically taken into account. In the presentation of empirical data I make use of these seven categories, referring to them as life-activities and understanding them as both the generic projects and actions that relate to corporeal movements in space-time. If I did not make this limitation, this would become another time-geographic study, which is not the intention. As the empirical relations between environment, ICT-settings, information-activities and outcomes are presented and studied, other generic projects may emerge that are not already covered by the life-activities. This is discussed again in sub-section 9.4.2.

While generic projects describe pursuits that are common to all members of an environment, specific projects concern only those that are found in a particular life-situation or that carry some special interest. As projects emerge in the empirical material, they are not distinguished as generic or specific. Whether they are generic or specific is in itself an empirical question, and as such, discussed in a concluding analysis. Making an addition to the house is a project and it can be a short-term or a long-term one. Child rearing is another project, less well defined and more open in its interpretation, but over the course of a life it still possesses the properties of a project. Other projects may be finding a mate, getting a bachelors degree or taking an evening course in pottery. For some people reading a book is a project in itself. A specific project can be more or less distinct by having a more or less clear purpose and goal.

An additional difference between generic and specific projects is that specific projects may be understood to have different forms. I suggest Change-projects as a form of project of managing transitions in life, for instance going from one job to another, preparing to have a child or repainting the house. It is a form of project that is limited in time and is directed to establish a new order. Once the transition is
made and a new order is settled, the project is concluded. Change-projects are likely to present immediate needs for information as the necessity of the activity calls for action. Another form of project that I suggest is Pursuit-project. A change-project may become a pursuit-project and is likely to do so, for instance when one has a child. Pursuit-projects are not limited in time but are part of the order of everyday life, but not to all members of the environment. They are continuously present projects of furthering a general interest. The form of need for information is more likely to be a deferred need as the project is continuously present and opportunities are acted upon where valued information is encountered. Relating this to the discussion of plans and situated action above, change-projects require a certain level of attention to the activities and are probably often related to conscious strategies, while pursuit-projects more often are related to minimally conscious practices in the goings on of everyday life. What’s important is that the approach to the activity is likely to differ between these forms of projects. While a change involves at least some rudimentary plan and the activity is a more or less conscious action, the pursuit of an everyday life activity may not involve a plan but a situated action that is guided by habit and practice.

To offer a definition: The concept of ‘project’ is understood as an objective of a respondent that is possible to label and that constitutes a domain where the carrying out of a (vague) plan imparts ‘problematic situations’. These problems appear as several activities that are related to each other but scattered in the chain of events that make up everyday life.

Both problems and projects may be owned by the respondent or someone else in the household, or by a member of the respondents’ personal network. They relate to the respondent as far as the respondent is committed to the problem or project by being committed socially to the one owning the problem or project and to engage in information-activities for their benefit.

Locating and labeling the projects that form the basis for information-activities is an empirical undertaking. This will be studied through the empirical chapters from the assumption that the generic projects of life-activities can be used but may prove not to be satisfactory. In section 9.3 the role of projects in the model will be restated as the findings can be included to it.
4.3 ICT-Setting

4.3.1 A Plethora of Constraining and Enabling Factors

Constraining and enabling factors affect a choice of either to engage in some information-activity or to avoid one. It has been suggested that the stress a person perceives to be involved in a problem is important, where the level of emergency or necessity for information is understood to motivate a person to engage in information seeking (Wilson 1981). While this cognitive stress is not of central interest to this study, it is relevant in respect to how social concerns influence such stress. Another deliberation the user is understood to make is of the expected investments of resources required for an information-activity to occur, as well as of the expected returns from the activity. A cost-benefit theory suggests a relation where there would need to be a positive relation between the expected benefits and costs for an activity to occur. The different forms of costs to be considered are, however, difficult to overview. Several have already been mentioned with intervening variables found to be cognitive, psychological, socio-economic, social, and relating to aspects of the environment, the technology and the information (Wilson 1981; Hardy 1982; Taylor 1991). In this respect the cost-benefit idea is so general that it is very difficult to implement in practice.

It may be that information-activities are better understood as activities situated in the particular time and place with the particular skill-set and experience of the individual and that the universe of constraints and enablers is not meaningful to model as it is nothing other than "...a cumbersome laundry list of unordered dimensions of experience" (Dervin & Nilan 1986:14). This does not mean to close the lid on constraints and enablers and black-box them. An alternative approach to understanding constraining and enabling factors for engaging in information-activities in the context of everyday life are the individuals' own accounts of what they perceive as constraining and enabling in terms of the artifacts they use to access information.

4.3.2 Intervening Technologies

The choice circumstances of the complex whole are not the intervening variables found in the individuals cognitions, but in the access they have to information through a set of information systems. It is central
to note that an information system consists of both information technologies and of information services (see sub-section 1.4.4). Making use of an information system is a seamless interaction with technologies and services, but in order to succeed, one needs some knowledge and understanding of the physical manipulations of the particular technology that makes the technology an intervening variable for use. In practice this means the technical dimension of their information uses environments, separating the technological space from the households' social space:

Technological space refers to the configuration of technologies in the home, starting from kitchen appliances to the TV and the telephone, the computer, and a variety of other domestic technologies. Technological space also includes the specific uses of these technologies for performing household activities. (Venkatesh & Mazumdar 1999:3)

From the point of view of the information-activities, different information systems, such as the TV, telephone, computer, and reference books, are required resources. Not only are such resources unevenly spread throughout society and among the particular ten respondents of this study, but in the hands of the individuals they take on different functions and values.

It may be argued that the value of a resource is decided by what it may be converted for (Mosco & Wasko 1988; Silverstone & Hirsch 1992). With such an understanding, a dictionary is a valued resource to one individual who finds it to be a thing of beauty, or if they like to look something up in it, or if they like for their guests to see that they have this dictionary on their shelf. As a resource this dictionary is to the holder an emotional resource, an instrumental resource and a symbolic resource respectively. To another member of the household who does not care for the dictionary and does not care to look things up, it is arguably no resource at all, or perhaps only a potential resource should they change their mind. The point to be made is that access to a pool of resources is not the only thing that constrains and enables the possibility to engage in information-activities. Individuals impose other constraining and enabling factors for use of the physical resources that are actually available, by their biographies and experience of the artifacts, the forms of interests in them, their social considerations, and their strategies for acquiring them (Silverstone & Hirsch 1992).
More specifically, the use that is made of the resources requires hands-on manipulation of the technology in order to achieve a desired outcome. This is often a source of problems and frustration with consequences that bear on the individual and his or her relation to the artifact. The orders inferred by information systems on the household, and disclosed by their use, is an indication that the technologies structure the household and the household structures the technology. The significance of this is the forms the use of the technology takes on in relation to a problem or project of everyday life. To study this relation it becomes necessary to look at how an individual makes sense of the artifact and what activities they engage in by using it.

In this study I take on the widest possible understanding of information and communication technologies and look at all information systems that are available in the everyday lives of the respondents, although with an especially keen eye to the biography and use of the computer and the Internet. This is understood to be a viable means to produce sensible explanations for how and why information systems are instrumental for information-activities.

There is really no question that some information artifacts are heavily laden with symbolic meaning, sometimes to the point where their utility is not as resources for information-activities at all, but for display and distinction of taste (Bourdieu 1984). Acquisition of information systems, such as a computer and an Internet connection, are sometimes taken for granted and considered part of a basic kit of domestic appliances, and in other cases acquisition is opportunistic.\(^{44}\)

Summaries of features of the ICT-Setting, which are significant for subsequent information-activities, concern three main issues. First is the physical access to information systems, which is the particular pool of resources the individuals have access to. This pool consists not only of computers and related artifacts we refer to as information technology, but also TV, VCR, DVD-player, audio equipment, reference books, regular literature, magazines and periodicals, newspapers, and personal notes (Nilsson 1997). In this research, the computer and the Internet take center stage and other information systems have a more modest role of providing the backdrop to which the computer is used. It also concerns the forms of interests that are taken in the technological artifact; whether it is a ritual, symbolic, strategic or instrumental

\(^{44}\) Opportunism as a strategy in acquiring resources is also noted by Davenport et al. (1997)
interest that makes it of value to the individual. Furthermore, the social considerations on behalf of the one acquiring the technology is important: is it for themselves or do they legitimize their acquisition as a need for someone else, i.e. their children or a spouse? The strategies for acquiring the technology also matter since a computer ‘for free’ has less alternative cost than a computer purchased over the counter.

Second is the individual biography and experience of a particular information system, e.g. a computer and the Internet. The width and depth of knowledge and understanding of the artifact plays a part in what forms their use of it take. A more experienced user operates a computer differently from one who is still learning to master it.

Finally there is the matter of practices and consequences of interacting with the technology. As a computer, for instance, enters the household, it has influences over the order of the household, and is interpreted by the orders of the household. Examples of issues relating to the entrance of a computer are exclusion, ergonomics and social constraints of who can do what with it and when. As it is used, contingencies arise that need to be dealt with, such as when installing new equipment, downloading a program or operating an application.

### 4.4 Information-Activity

Information-Activities are the set of behaviors that people display in their interaction with information. Information-Activities have a social connotation as they are mainly concerned with information that is external to the individual.\(^{45}\) Thinking, as an internal manipulation of information could probably also be considered an information activity but is not of primary interest to this study. Information-Activities are different from life-activities by having an emphasis and direction towards information rather than physical activity. While life-activities do indeed involve elements of information processing I understand the activity to be colored by the objective of physical manipulation. Similarly, information-activities involve elements of physical manipulation but are taken to concern the manipulation of signs and symbols (see also section 1.4 and sub-section 4.2.2, and note 35).

\(^{45}\) Which is understandable as the ‘stuff’ of Poppers World 3.
4.4.1 Activities

There is much to be found in the Information Studies literature on people’s interactions with information. From the point of view of the individual one may think of one’s relation to the world of recorded information as one of input/output. The individual takes part of information from the surrounding world of recorded information, and it is given by the individual to the surrounding world by being recorded and made public (see also note 35). Most of the work in the Information Studies-field has concerned neither input nor output but how people approach information, especially as searching activities.

In this section, an attempt is made to describe information behavior as a matter of seeking, gathering, communicating, and giving information. The forms of behaviors are understood to relate to eight conceptually different information-activities. In Figure 4:3, below, the relations between each information-activity and information behavior is illustrated and further explicated in the text. The specific forms of information-activities are introduced further below, and the role and process of information-activities is discussed further in section 9.3.

![Figure 4:3. Relation of Behavior and Activity](image)
Search & Retrieve

Search & Retrieve are both established terms that are used to describe activities strictly relating to an information-seeking behavior. It is very much an active and directed behavior, and the peculiarities of searching for information is well understood. The information search is a process in itself, involving several steps and strategies depending on the purpose and environment of the search. This model takes the behavioral aspects of these steps into account by interaction with a source, the form of encounter with information, the assessment and choice, and new behavior in an iterative search process. Thoughts and feelings are taken into account to some extent by the deliberations made by the agent. The understanding of searching is that it is normally not confined to one instance of concerted efforts, but as several successive searches at different points in time and on different systems (Spink et al. 1998).

Browsing

Browsing is understood as a subset activity both to information seeking and information gathering as it can be quite specifically directed to a defined source, akin to searching, or a loose discovering undertaking of a particular information system that is more akin to a general gathering behavior. Related needs to a seeking activity have been suggested to be an immediate need, whereas it is thought in Information Studies that gathering behaviors are responses to deferred needs (Krikelas 1983). The definition of browsing that I suggest is the act of moving in a limited environment, with some level of perceived probability, to encounter a resource of some value. It is an act of moving in, or the moving of, an environment, in order to shift focus of attention between distinguishable objects that belong to the environment, and assessing

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46 For overviews, see Taylor (1968); Bates (1981); Krikelas (1983); Dervin (1983a; 1983b); Belkin & Vickery (1985); Ellis (1989).
48 Cognitive and emotive aspects are covered in greater detail by Ingwersen (1982); Saracevic (1986); Kuhlthau (1991; 1993).
49 A recent review of browsing is found in Chang & Rice (1993). 'Berry-picking' and other search techniques and strategies are found in Bates (1979a); (1979b); (1989).
the distinguished objects according to the utility that may be drawn from them. Emergent results are extended knowledge of the environment, and identification of objects that may be appropriated. Expecting these results, browsing is undertaken as a strategy to maybe find something of high value, and surely getting familiar with the environment, which is perceived to be a value in itself. Browsing has been studied as consumer behavior, as the zapping by television audiences, in way-finding and environmental design, and as information seeking behavior (Bates 1989; Chang & Rice 1993). Browsing activities are, by some information seekers, used as a deliberate strategy to encounter information and to increase serendipitous chances (Erdelez 1997; 1999; Sandström 1999; Choo 1999).

**Monitoring**

Much of everyday life information-activities, are recurrent meetings with familiar sources and services. Starting the day by flipping through the morning paper, perhaps with a radio or TV going in the background, a habitual listening to the 12 o’clock news on the radio and watching the 10 o’clock news on TV, are all instances of what can be called a *monitor* activity. The monitoring activity describes an information-gathering behavior that is both intentional and incidental: The information systems turned to are intentional, and the information gathered is incidental (Wilson 1977:37). Monitoring is distinguished from browsing by being directed to a familiar source that is regularly updated, where the monitoring, in part, reaffirms the agent by providing a stable and predictable form and, in part, supplies valued information. It is thus a fairly regular activity and, as such, is likely to be structured by the context and bring structure to the context, this being activities performed at special times and in special places. Wilson’s understanding of monitoring is something that takes place by personal observations and in communication with other people (Wilson 1977:37). To monitor an information system is not to read or listen thoroughly, which is called ‘unfolding’ (see below), as much as it is a

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50 Ellis uses the term ‘monitoring’ to describe the behavior of regularly returning to information sources with which the individual is familiar. Ellis (1989). Patric Wilson speaks of a ‘monitoring system,’ which people make use of in information-gathering activities, as part of a ‘personal information system.’ Wilson (1977:36, 37).
checking up of it that may lead to an unfold-activity. Activities that otherwise may appear different from each other, such as checking the email inbox and looking at the morning paper, could both be described as monitoring.

**Unfolding**

*Unfolding* is a term that is suggested here for the first time to denote activities of continually directed attention towards an information system and the symbolic display it offers, for instance by looking and listening, and thereby taking part of a content. Unfolding may be reading a book, a letter, or an article that caught the attention, listening to a newscast, or experiencing a movie or something on the television. How the content is made sense of and what happens to the individual during the act of unfolding is not considered here. To systematically work through a source to locate material of interest has been referred to as ‘Extracting’ (sub-section 4.3.6). Unfolding is taken to include Ellis’ extracting, but it is also a wider concept than that. I find extracting to imply an instrumental and rationalistic view of taking part of texts, images and other forms of information. The act of unfolding is also something of an adventure. Reading a book, page by page, line by line, and word by word, something that has already been judged to be worthy of the time and effort it takes, is discovered and experienced. As an information-gathering behavior unfolding does not have to be extremely rich in information but can mainly be a pleasurable activity. Sometimes one may even prefer to engage in the unfolding of a source that is only expected to provide escape and fantasy. At other times, the

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51 The dictionary description of "unfolding" says: "1. To open or spread out or be opened and spread out from a folded state. 2. To reveal or be revealed: the truth unfolds. 3. To develop or expand or be developed and expanded" (McLeod 1987:1094). The use of 'unfold' here is in a figurative sense of the first meaning of the word, and a literal understanding of its second and third meaning. 'Unfolding' can also be understood to be both active, in that the individual is performing the unfolding, or passive, in that someone else or something else is an agent in developing something that unfolds before the individual. The choice of word to label this kind of activity is arguably problematic, but I have not found a better alternative. Among the reasons to stick with ‘unfolding’ is that it is rather suggestive. It also implies that the established uses of the word, e.g. ‘the truth unfolds’, require the participation of an agent.
unfolding is of real nuggets of understanding and learning. As a communicating activity, unfolding is to let someone else tell something, it is that part of communication where a narrative unfolds before her or him. Unfolding is a disenchanting of strings of signs and symbols. What unfolds from the letters in a book, from the sound of words from a radio, from the fluttering pixels of a screen and from crisp and rich face-to-face communication, is an opinion, or a narration, or a fact, or perhaps a thing of beauty such as music or a picture. Needless to say, unfolding is an important information activity. But it cannot stand alone for it does not include the previously mentioned information-activities that are used to approach the information: Searching, Browsing, and Monitoring.

**Exchanging**

The information *exchange* activity could easily be understood to be identical with communication, as it is intended to represent the acts of 'giving' and 'getting' messages in a communicative behavior. 'Communication', however, normally includes the specific act of 'giving' messages without 'getting' anything in return, and vice versa. Here, the sole act of 'getting' messages in communication is understood as an act of 'Unfolding', and the act of 'giving' messages in communication is understood as 'Dressing' (see below) remains as the act of exchanging messages, which can be said to have unfolding and dressing as its constituent parts. But whereas unfolding and dressing are understood to be uni-directional, exchanging is understood to be bi-directional. A very central feature of exchanging is therefore its reciprocity. Communication with a very low level of reciprocity is therefore understood to be either unfolding or dressing depending on the message's origin and direction. Unmediated communication often entails some level of reciprocity as responses are made with body language and verbal interjections. An exception is, perhaps, an unmediated mass communication such as a church service or a lecture. Mediated communication does not necessarily mean that there is any reciprocity at all. Certainly, the synchronicity of the telephone affords reciprocity, but asynchronous media such as the postal letter, email and voice-mail, can very well be unidirectional and thus not a case of exchange. What then of exchanges of letters, be it electronic or physical? Lines need to be drawn between unfolding, exchanging, and dressing. I suggest this as a definition of 'exchange': Continuous unfolding and dressing of
information between two or more parties is a single instance of exchange as long as the topic of the messages does not change. This suggests topicality as a property of exchange-activities which is an important aspect of it in order to analyze it for what problematic situations and projects it relates to. This means that an exchange may go on for a long time with periods of no activity in-between and with activity on any medium, or indeed unmediated.

The definition has consequences for how to analyze exchanges with friends and kin that are intimate parts of the personal network and with public or private institutions, and with strangers and brief acquaintances, which are all less intimate in a personal network. With intimates, several topics are often mixed in each communicative instance, making it very difficult to distinguish when one exchange-activity starts and another stops. In practice, therefore, it is important to understand much of the communication between intimates as one ongoing exchange-activity and look at the variations of topics that appear in the exchange. Less frequent exchanges, as the ones with more distant nodes in a social network, may be easier to delineate and to see as actual limited exchanges.

Exchanging may be talking face-to-face or on the telephone. It may also be an ongoing email exchange distributed over time. The exchange does not have to involve text or sound, it can be interactions between players of a game, in real life or technologically mediated.

**Dressing**

'Communication' is conventionally understood to mean both 'imparting' and 'exchanging' information (McLeod 1987:194). But in order to distinguish the flow of information in a more precise terminology, here I make a demarcation between 'exchanging' and 'imparting' information and suggest *dress* as the name for activities where information is framed and a cognitive product is externalized (consciously or not) by an acting individual.52 Having done that, information dressing begs to

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52 I find 'dress' to have the strongest motivations to label this type of activity. Among the considered options are 'frame,' which I consider to be to constraining and enclosing. It implies a more rigid process of putting in words and images of what we have in our heads. Another option is 'folding' as a counterpart to 'unfolding' but that implies a reverse relationship between folding and unfolding. In reality what is unfolded is not quite the same as
be part of both giving ('imparting') and communicating ('exchanging') forms of behaviors as it is sometimes engaged in with some level of reciprocity and sometimes without the intention or expectation of any reciprocity, immediate or delayed. Thoughts, ideas, facts and pieces of knowledge are dressed in signs and symbols, words and text, images and pictures, and physical expressions. Information dressing is assumed to cover such activities, whether they are for communicative purposes or information giving purposes. Whereas unfolding is information input, dressing is the information output. Dressing is the act of packing information in symbols, signs and images to make public and share with others, or to keep in a photo album, a diary or any other private repository.

**Instrupecting**

Activities of 'imparting' information and making one's wishes known to others or making statements, such as by ordering, appraising or giving directives, is here understood as information *instruct*-activities. An instruct-activity is different from the dress-activity in the respect that whereas dressing is taken to signify acts of externalizing and expressing thoughts and ideas, instructing activities are acts of disseminating such products. The instruct-activity is part of an information-giving behavior, where the giving is social but unidirectional from the individual to an anonymous or generalized counterpart. Giving a request for a purchase on the Internet is one example of an instruct. Another comes from paying bills either by postal service, by telephone or by the Internet. Instructing is a mundane and significant behavior in the context of everyday life. Reciprocity that may occur is a request for clarification, confirmation and receipt for the instruct-activity. The counterpart may be an institution or a representative of an institution, such as in a payment order or a purchase made over the

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53 The verb 'Instruct' is here understood in all its different meanings: "1. to direct to do something: order. 2. to teach (someone) how to do (something). 3. to furnish with information: apprise" (McLeod 1987:524).
counter, or sent by regular mail or via the Internet. But the counterpart may also be automated, such as when drawing money from an ATM or making a purchase from a vending machine. The activity typically has a business-like and administrative character.

**Publishing**

Activities where an individual gives information by posting it for others to take part in are here referred to as information *publish* activities.\(^{54}\) Publishing information is different from instruct-activities by being less administrative, more personal and often more extensive. Putting an ad in the paper or in the local store, posting a website, making a comment to a newsgroup are all publications of information. It relates to some particular source and is directed to the public expected to encounter that source. The recipients of this information can be on any level, from an unspecified community to the general public. Publishing is also different from dressing in the respect that dressing is the activity of framing information in symbols and signs, and publishing is the activity of posting this for public access.

The eight forms of information-activities that have been explicated above are taken to be mutually exclusive of each other. An activity that is well described by one category, should not at the same time be possible to be described by another. Having said that, it is also clear that these activities are more related to the adjacent categories in the Figure 4:3, than to the category across the radius of the model. For instance, monitoring is probably going to be mixed with unfolding, and publishing is likely to follow after dressing. There are script-like relations between activities in the sense that they may often appear in conjunction to naturalistic categories such as ‘reading the paper’. But this does not mean that those related activities should be suspected to have one ‘truer’ activity hiding beneath it: ‘Reading the paper’ covers both monitoring and unfolding as analytical categories, but it does not mean that ‘reading the paper’ is better understood as either monitoring or unfolding, but that it consists of both as separate activities.

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\(^{54}\) ‘Publish’ is taken to signify any of its conventional meanings, but in everyday life it is probably the third, transitive, meaning that most often apply: "1. To produce and issue (printed matter) for distribution and sale. 2. (intr.) to have one’s written work issued for publication. 3. (tr.) to announce formally or in public" (McLeod 1987: 801).
4.4.2 Assessment of Relevance

When individuals engage in an information-activity, the process of differentiating among sources and information may seem arcane to the inquiring researcher, but the acting individual is the expert in making this assessment.\(^{55}\) There is much to be said about ‘relevance’ and relevance judgments. "Relevance involves the relationship between a user’s information problem or need and the information that could solve the problem" (Schamber 1994:3) is one description of what elements are involved in relevance. A concept of relevance is sought to make the effectiveness in information retrieval possible to measure and evaluate, but beyond theoretical conceptualization of ‘relevance’ there is little consensus in the measurement of relevance judgment and relevant human factors or even in terminology (Schamber 1994; Greisdorf 2000). Some 80-relevance factors have been suggested in the literature and a review of it closes by lamenting the fact that there is no consistent term or standard operational definition for this central concept (Schamber 1994:36). The emerging view of behavioral aspects of relevance is that it is a "cognitive, situational, dynamic phenomenon that is integral to a wide range of information-seeking and -use behaviors." (Schamber 1994:34).

In instances of straightforward information searching behavior, the relation between a query and a document is considered as ‘relevant’ or ‘not relevant’ depending on their match. To a lesser extent it is spoken of in degrees of relevance (Greisdorf 2000; Schamber 1994; Harter 1992). In Searching, Browsing, and Monitoring activities, serendipitous findings must be said to be relevant in some respect, calling for an understanding of relevance that subsumes passive encounters of information. Telephone calls must likewise possess some relevance, why else bother answering. Here, it is asked how the user judges relevance on a continuous basis as a means of making sense out of whatever information they encounter. The user is understood to be in a on-going sense-making process, and when confronted with information asks, ‘What is this relevant for?’ rather than ‘Is this relevant?’ A theory of psychological relevance in everyday conversation has been suggested where such an understanding of relevance may be effective (Harter..."

\(^{55}\) Compare Ellis’ discussion on ‘differentiating’ in chapter 4.3.4. For overviews of ‘relevance’ in information studies, see (Saracevic, 1975; Shamber, 1994)
It is argued that communicated information comes with a ‘tacit guarantee of relevance’ (Greisdorf 2000:69; Harter 1992), as the objective of the communicator is to make another person aware of something (Harter 1992:604). In conversation, an individual will interpret a comment and work out the consequences of adding what is expressed by the comment, such as a fact to the sets of beliefs about the world that is already held. The search for relevance will determine one’s choice of what construct of beliefs the comment should relate to. The person will choose a construct that will maximize the relevance of the comment. Thus, if the new information has any effect on a construct, it will be relevant for that construct. Furthermore, the larger the effect on a construct, the greater the relevance of the comment. I take this to mean that whenever we are confronted with information, be it a headline in the morning paper, a television advertisement, an overheard conversation, or an envelope in the mail, we seek a construct of knowledge in which that information will make sense. We seek among sets of beliefs about the world where this piece of new information may have an effect. In regard to everyday life, the construct to which the relevance is judged may be understood as the problem domains and projects of everyday life-activities.

Given an understanding of ‘information’ as something that is ‘construed by the user’ (Dervin 1983b. See also section 1.4), ‘Relevance,’ will fundamentally refer to how a user makes sense out of a message and its circumstances. Relevance will depend on how, and to what extent, the user finds the message informative. The question to be

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56 Effects may be 1) new information combining with old information to form new information. 2) New information erasing/exchanging old information. 3) New information strengthening or weakening old information. This is what Popper would refer to as a change in an individual's probability distribution (Boisot 1995:22).

57 Sperber and Wilson also argue that the extent of the relevance will depend on the effort required to process the information (Harter 1992).

58 To offer an example: Overheard conversations on cellular phones are annoying for two reasons. First, the information that can be drawn from the one-sided dialogue has little 'effect' when it is not intelligible. Second, even when a topic can be deduced from the one-sided dialogue, the content of it does not relate to a project or a problematic situation that is owned by someone we know and are committed to, and we are certainly not committed to the loudmouth with the cellular phone. We may get used to hearing these conversations—given time, but they will never be of high relevance.
asked is ‘what is the nature of this relevance?’ Asking that of a situation will disclose something about the user’s relationship to the information at hand, it will let us know what sense a user makes of a situation. Not only whether the message corresponds to a purpose and fulfills a need, but what it relates to from the point of view of the user.

**Social Relevance**

In addition to this, it seems that the respondents not only seek ways in which the information they encounter makes sense to themselves. Some, more than others, seem to look for how it makes sense to other people, how the information is relevant for someone else’s set of known projects or problems. From a group perspective this is sometimes referred to as information filtering. Aspects of information-activities involve people giving information to other people as a tip, or gift. The information is picked up during their own information-activities but are not necessarily judged to be of interest to themselves but more so to someone else. It may be intriguing to think of such information gifts in terms of the social significance of material gifts within a community as has been well established by cultural anthropology (Mauss 1990), although it is often not on a reciprocal basis. As social mediation takes place around objects, it is not difficult to see how they take place around information. After all, the value of information can hardly be disputed, and using it as a ticket to social groups can only be regarded as normal. It should be noted that this relation may be on a one-on-one basis, with or without reciprocity, or it may be in relation

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59 There is extensive research on information exchange among social groups, and perhaps especially so for scholars. Cf. Menzel (1959); Price (1986); Paisley (1968); Lievrouw (1988); Palmer (1999). Another related concept is Gatekeepers, see Metoyer-Duran (1993). Other groups are noted for exchanging information to a much lesser extent, such as unskilled workers, Chatman (1987; 1991). A final related concept is that of ‘social intelligence’ reviewed in Cronin & Davenport (1993). To my knowledge it is in none of these cases discussed as ‘social relevance’.

60 Haythornwaite (1996). It is also studied in social network analysis mentioned earlier in this chapter. Searchable terms relating to information filtering is ‘social filtering’ and ‘collaborative filtering.’ Automated app-aches can be found from labels such as ‘automated collaborative filtering’, ‘active collaborative filtering’ or the more generic ‘recommender systems’.

61 This reasoning is partly drawn from Silverstone & Hirsh (1992:26, 208).
to a specific community, such as the information sharing among scholars, or an on-line community. There is also a difference here in sharing information, which is the exchange of information of relevance to both parties, and of giving information where the relevance to the giving party is an instrumental value of the information in order to pursue something else. One may think of this relation as people acting as 'agents' for other people. In this sense, people are autonomous agents, which intelligently discriminate information for the service of someone else (Nardi & O’Day 1996). The economy of this relation is indeed intriguing.

4.5 Outcome & Change

This section of the overall model is intended to cover such manifestations of the information behavior process that are more or less stable across time. Less stable manifestations, understood here as outcomes, are consequential events that come and go. More stable manifestations, understood here as change, are the more lasting qualities of modified states of reality and how it is understood and defined.

In section 4.2, it was discussed how needs for information were immediate or deferred, and perceived or unconscious to the individual, and that the notion of 'need' is a central but contested theme (Taylor 1968; 1991; Faibisoff & Ely 1976; Krikelas 1983; Belkin & Vickery 1985; Rhode 1986; Wilson & Walsh 1996; Harmon & Ballesteros 1997; Wilson 1981; 1997). I tried to sidestep this problem by connecting circumstances of information-activities with circumstances of life-activities and argue that the concepts of a problem within a project may serve as stepping stone to understanding and explaining information behavior. A successful resolution to a problem that is an agent in initiating an information-activity, is understood to provide a product that is in accordance with the notion of what was in demand. This could be a reduction of uncertainty (Krikelas 1983), the bridging of a gap in the understanding of the world (Dervin 1980), or more specific: instruction, release, companionship, and social support (Dervin et al. 1976). More specific still, it can be information of a certain kind, e.g. about

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63 See also (Constant, Kiesler, Sproull 1994; Constant, Sproull, Kiesler 1996)
housing, employment, and health issues (Ely & Faibisoff 1976). In sub-section 3.2.4, eight classes of information were suggested, which Taylor had derived from the needs of users; Enlightenment, problem understanding, information that is instrumental, factual, confirmational, projective, motivational and personal or political. All of these examples can be seen as products of information behavior.

If it is acknowledged that information-activities are in a constant process of resolution, as part of an on-going making of reality, it is alien to that process to stop and say, “Here’s the result!” Any arbitrary point in time will suggest products of an information-activity that in the next instance has changed "in a continuous and always incomplete process of becoming." (Dervin 1997:18). Much like the contributions of Kuhlthau suggest, each stage of the information search process has its pertinent feelings, thoughts and actions (see section 3.4). Having said that, it is also recognized that information-activities have more durable products that relate to the tasks that were at hand, exemplified by the papers that the students of Kuhlthau’s study were producing. Once an observable information-activity is concluded and it has resulted in more or less transient feelings, thoughts and actions, and possibly a ‘product of the mind’ such as a written report (Table 3:2), the processing and the use of what came out of the activity is again hidden from the researcher and often not available for introspection by the individual. The products are, in this sense, as unavailable to study as is the ‘needs’ that initiated the activity. Wilson noted this (sub-section 3.5.3) and the association it has to learning and that further research is needed to better understand how it influences the context of the user. As an approach to studying activity and context, i.e. socially situated activity, a group of researchers (Chaiklin & Lave 1996) found to their surprise that it was actually a project of context and learning. They write:

It is difficult, when looking closely at everyday activity, to avoid the conclusion that learning is ubiquitous in ongoing activity, though often unrecognized as such. Situated activity always involves changes in knowledge and action and ‘changes in knowledge and action’ are central to what we mean by ‘learning.’ (Chaiklin & Lave 1996:5)

Is it then not possible to make a valid and reliable study of the products of information-activities, as they are either fleeting emotions and transient cognitions, or strands of learning that may stay dormant for years
before they become observable? Kuhlthau has shown that pertinent feelings, thoughts and actions can be studied and that they further the knowledge about the information seeking process. Her work suggests that feelings, thoughts and actions are also relevant to the study of information-activities other than information seeking. For instance, not all information-activities should be expected to necessarily result in lasting but hidden products. A few hours in front of the television, or browsing the web, or visiting the movies may provide nothing more lasting than a temporary feeling of release and relaxation.

Here, I study products of information-activities as a matter of outcomes, and whether they are transient or durable is not as important as the question of to what extent they are common among the respondents and their problems and projects and pertinent to specific information-activities. Table 4:2, below, offers a taxonomy of outcomes that has been suggested by previous research (Kuhlthau 1991; 1993; Taylor 1991; Krikelas 1983; Dervin 1980; Dervin et al. 1976) with additions from the results of this project. They are organized according to Kuhlthau’s categories of feelings, thoughts and actions.

Table 4:2. Outcomes of Information-Activities. The table is constructed as follows: a (Kuhlthau 1991; 1993) b (Taylor 1991) c (Krikelas 1983) d (Dervin et al. 1976; Dervin 1980) e (Results of this project).

<table>
<thead>
<tr>
<th>Cognitivex (thoughts elicited by the information-activity)</th>
<th>Emotionalx (feelings elicited by the information-activity)</th>
<th>Behavioralx (actions elicited by the immediate thoughts and/or feelings from the information-activity)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enlightenment</td>
<td>Confirmation</td>
<td>Physical action (life-activity)</td>
</tr>
<tr>
<td>Problem-understanding</td>
<td>Reaffirmation</td>
<td>Doubt</td>
</tr>
<tr>
<td>Uncertainty-reduction</td>
<td>Motivation</td>
<td>Disappointment</td>
</tr>
<tr>
<td>Gap bridging</td>
<td>Companionship</td>
<td>Stress</td>
</tr>
<tr>
<td>Instruction</td>
<td>Social support</td>
<td>Angst</td>
</tr>
<tr>
<td>Orientation</td>
<td>Release</td>
<td>Regret</td>
</tr>
<tr>
<td>Interest</td>
<td>Satisfaction</td>
<td>Anger</td>
</tr>
<tr>
<td>Confusion</td>
<td>Entertainment</td>
<td>Sadness</td>
</tr>
<tr>
<td>Uncertainty</td>
<td>Pleasure</td>
<td>Social Exclusion</td>
</tr>
<tr>
<td>Know how, when, where</td>
<td>Optimism</td>
<td>Social participation</td>
</tr>
<tr>
<td></td>
<td>Sense of direction</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Clarity</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Relief</td>
<td></td>
</tr>
</tbody>
</table>
The cognitive and emotional outcomes are understood to be directly related to the information-activity. The behavioral outcome on the other hand, can only be understood as resulting from the cognitive and/or emotional outcomes, and not directly from the activity. Any and all of these outcomes can be expected to have an effect in the respect that it becomes part of the history of the individual. While these outcomes are available to the respondents and thereby possible to study, their significance as change-agents is not necessarily available. There are, however, instances where information-activities do bring about change that is observable from the reports given by the respondents. 'Change' is understood here as outcomes that have some extended existence in time-space, and/or as an agent in modifications of behavior. These are found in reports of how information-activities have triggered modifications of behavior and changes of the conditions for other activities, and they can be argued to be of two different classes. One class concerns changes within the overall model of this book, i.e. changes that relate directly to the Environment, the ICT-Setting or Information-Activities. Such changes are found in modifications of the conditions for action, e.g. the acquisition of a new information system or a change of interest leading to the termination of a monitoring activity. The other class of changes extend outside the model, as information-activities relate to life-activities in general, e.g. the purchase of a car, finding a new job and other large and small problems and projects of everyday life. At times, changes in either class are consciously deliberated and other times not.

Obviously the respondents do not reason about their activities in terms of 'change,' nor do they formulate 'outcomes' in the analytical lingo used in research. It is, however, possible to infer categories of 'outcomes' from statements such as "it made me feel..." and "now I know...". It is also possible to infer 'change' from the respondents' reports of consequential events of actions. In chapter 8 I describe and discuss outcomes and change as manifestations of process, where the process imparts the environment, the ICT-setting, the information-activity and the outcome and change.

4.6 Summary: Applying and testing the model

In this chapter, I have developed the overall analytical model of information behavior in everyday life, in line with the purpose that was set forth in section 1.3. It is taken to consist of four general parts to which
the individual relates: an Environment; an ICT-Setting; a group of behaviors that are specified as Information-Activities; and Outcomes & Changes of the overall process. I have also elaborated on my view of what these four parts consist of by drawing together findings from prior research and filling in the blank spots with new suggestions for concepts that have been developed from empirical material. Before moving along, let me expand on how these four parts are interrelated—briefly, and in a more practical way.

Once a life-activity becomes problematic in the sense that a wished outcome requires manipulation of information, an information activity is understood to be a response to that problem. With new information, additional cognitive, emotional and behavioral resources have been accumulated to deal with everyday life-activities either as problems that have to be dealt with or as projects to pursue. In this sense the information is a change-agent to the situation that precedes the information-activity. Even if the new information is not used, as the result may be trivial, undesired, insignificant or plain wrong, it makes it possible for the individual to act or make assessments in a way that was not possible before. Change is, in a sense, inevitable (see note 56), but not all changes are possible to study. Outcomes of information-activities can be sought as manifestations of activity that may be transient or durable thoughts, feelings or actions. They are interesting to the extent that they relate to certain problems and projects, and certain information-activities. Change brought about by information-activities is probably not possible to study in full but is observable, and reportable modifications in conditions for action and modified behavior can be attributed to information-activities; changes within and outside of the model can be described.

Placing empirical instances of each of the four parts in a table looks like this (the empirical statements are in italics and inferred analytical categories are in normal type):
the individual relates: an Environment; an ICT-Setting; a group of behaviors that are specified as Information-Activities; and Outcomes & Changes of the overall process. I have also elaborated on my view of what these four parts consist of by drawing together findings from prior research and filling in the blank spots with new suggestions for concepts that have been developed from empirical material. Before moving along, let me expand on how these four parts are interrelated—briefly, and in a more practical way.

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Placing empirical instances of each of the four parts in a table looks like this (the empirical statements are in italics and inferred analytical categories are in normal type):
### Table 4.3. Manifestations of process

<table>
<thead>
<tr>
<th>Environment</th>
<th>ICT-Setting</th>
<th>Information Activity</th>
<th>Outcome &amp; Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respondent Life-Activity</td>
<td>Problem</td>
<td>Project</td>
<td>Thoughts</td>
</tr>
<tr>
<td>Agneta</td>
<td>Immediate:</td>
<td>Pursuit: Social Maintenance</td>
<td></td>
</tr>
<tr>
<td>CIO / R&amp;R: Debate with son...</td>
<td>...about who's blind, Stevie Wonder or Ray Charles</td>
<td>-Lexicon from 85 The Internet</td>
<td>-Lexicon is old</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>-&quot;200 hits 2nd chapter said he was blind since age of 6. So we got information about that&quot;</td>
</tr>
</tbody>
</table>

—Proposing a Model of Human Information Behavior
The format of this table will be used in chapter 8 as the different empirical parts are drawn together. In spelling out the table and probing the categories, it reads like the following: In her going about her everyday life, Agneta has a disagreement with her son. The life-activities to which that event relates may be caring for others (CfO) as it concerns Agneta’s son, or reflection and recreation (R&R) as it appears in a relaxed conversation about a public fact rather than an issue that directly affects only one of them. The problematic situation is their disagreement on which one is blind, Stevie Wonder or Ray Charles. As they want to resolve the dispute, the problem is immediate. In terms of a project, the circumstances of the activity and its outcome indicate that the problem was raised in a project that can be termed as the maintenance of social relations. The ICT-setting to which they turn to find the facts that would resolve the dispute is first to an encyclopedia where there is no information on the issue and second to the Internet. The information-activity is to search for posts on “Ray Charles”. As they find an answer to their disagreement the outcomes are cognitive enlightenment and emotional satisfaction. As Agneta describes the situation there are at least two consequential events. She reports that they got 200 responses on their search and that in the second ‘chapter’, as she calls it, they learned that Ray Charles has been blind since the age of six. She also reported that she found her encyclopedia to be ‘old’ as it did not provide the facts they sought.

This sampling of information behavior in everyday life show manifestations of the process from an initiating problem relating to the environment, use of the available ICT-setting, performing an information-activity and reaching an outcome that resolves the problem and puts matters to rest. It is described as one iteration through the overall model that is presented in Figure 4:1. It also consist of two separate information-activities, first search & retrieve in the encyclopedia, then search & retrieve on the Internet, which are two iterations of information-activities. In terms of change the outcomes are ambiguous. The predominant outcome, resolving the conflict, does not make for a lasting result. What may be lasting is the notion that the encyclopedia is old, but that notion may well have been there already, only to be strengthened by this event. Neither is the learning that may have taken place taken notice of since that implies a focus on cognitive issues. Thus, as it would be highly speculative, I will not argue that this ex-
ample means that there is a change. Neither are there any consequences that can be seen to impinge on further life-activities or information-activities other than the fact that yet another problem in the project of maintenance of social relations has been solved.

With this, the elaboration on the first and main part of the model of information behavior is completed. In section 9.3 I return to explicate the second part of the model by showing how information-activities proceed in everyday life and how social relations are part of it. In the next four chapters attention is given to the ten respondents that provided the empirical data for the model. The presentation of their uses of information systems follows the structure of the model as it has been introduced here, with one chapter to each of the four parts.
5 Ten Environments

5.1 Introduction

The details of each respondent’s environment are obviously personal and private—that’s what studies of everyday life is all about. Sharing such information publicly requires the researcher to be delicate and respectful to the respondents. No matter how anonymous the respondents are, with aliases of people and places, one must never make them look bad. Sharing the diary of respondents’ everyday lives in full would also make for a very extensive presentation of data that would add little to this presentation, except perhaps for an occasional voyeuristic thrill.

Much information about the respondents that relate to the environment is found throughout chapters 5 to 8, as they are relevant in respect to the ICT-Setting, the information-activities in which they engage, and the resulting outcomes and change. Since such data relate directly to the environment it does belong to this particular chapter, but compiling it here as well would make for more repetitions than necessary and make the reading cumbersome. The material in this chapter is therefore such that is not presented anywhere else. In the section, Real Environments of Real People, material is presented that gives a general indication of life-situation and lifestyle of the respondents by presentations of age, household composition, profession, interests and educational background. Their diaries are not illustrated, but included are some projects that appeared in diaries and interviews that are salient for the information-activities that are introduced later.

In discussing information-activities, access to information—as a presupposition—is important to consider. The decision to acquire a computer and an Internet connection is for some of the respondents colored by their feeling that it is necessary to get hands-on experience in using computers, which is discussed further in chapter 7. But computer literacy is not solely explainable as a matter of manipulating the technology. General access to information, and literacy in understanding information to make judgments of relevance and trustworthiness,
is, for some of the respondents, an important reason for acquiring information systems such as a computer and an Internet connection. This can be referred to as psychological access to information or worldview (see sub-section 3.2.2 and section 4.2). For lack of a better label I present this as a generic information interest. This is taken to include an interest in information both in width and depth. (Other considered labels are curiosity and novelty seeking.)

The Environment, it has been argued earlier (chapter 4.2), is not only the domestic spaces to which the respondents relate. It is taken to include all aspects of everyday life. Drawing a line between work and non-work everyday life is not always straightforward. Access to similar resources at home as one has at work, if one is a white-collar worker, lowers the threshold to continue the work at home. This invasion of work into the home is not unusual, and it raises the question of where the line is drawn between non-work everyday life and work. An implication of that question is also that there is a line to be drawn for the reverse process, of pursuing private and personal matters at work. The only one of the respondents that this does not concern, is Ester, as she is retired. Work at home can be done in several ways. Reading work-related documents does not necessarily require the use of a computer or an Internet connection, while other tasks cannot be done without both. To some respondents it is very rare to bring work home at all, on or off computer, while others do it regularly. To some this means that they work more hours, while others only use it as a means to reallocate the same amount of hours. Incidences of activities at work, which has a character of personal relationships and private matters, as opposed to relating to profession and the work tasks that are to be performed, is usual among the respondents. As such, these incidences are better described as belonging to non-work everyday life rather than to work, although they take place at the workplace during working hours. Some respondents make a clear demarcation and refrain from having private telephone conversations at work, while others make a point of pursuing personal matters during business hours, in exchange for hours they put in working at home. Drawing the line between the respondents' professional and private lives is not always possible to do as a researcher, but they give a good indication themselves. Among the more difficult activities to place in one of the categories is the respondents' relationships with colleagues, which may be both professional and private. Many times, the respondents keep 'Private' folders in their email readers at work where they place mail that they themselves
consider to be of a more private and personal nature. Making this assessment of what’s private and what’s not, is not an easy task even for the respondents’ themselves. As Eva describe it: “I don’t know why it ends up there sometimes [in the private folder], there’s no logic to it. It’s probably when it predominantly concerns only me.” (Eva, 261). To give an indication of how far the Environment of each individual extends into work, and vice versa, their strategies, or lack of strategies, for making such a demarcation is described in the text.

In later chapters, more material is offered, as it is relevant to the issues discussed. The intention with this section is to give a richer introduction of some basics about the environment of the respondents, which makes up the context in which they lead their everyday lives and how it is relevant for their subsequent engagement in information activities.

The presentation of each individual follows the same logic: First, a general background is given with a few references to projects that are reported in their diaries. Following that is a note of their interests in information and information systems. Finally there is a piece on their strategies to manage work in their everyday lives.

5.2 Real Environments of Real People

Agneta

At the time of this research, Agneta is 42 years old. She lives alone with her son, Fredrik, 13, in an apartment in Middletown. Her other child is an older daughter who now lives in another city. Her daughter keeps in contact with Agneta and Fredrik often and they all see each other occasionally. Agneta has been working for the same company most of her life, and with their trainee program she has been able to take several courses to add to her two years in high school. Between work and caring for her household, she finds little time left to do other things. She regularly does light exercise at home, reads books, and spends time with her son. Fredrik meets with his friends, with whom he plays pool and video games, and participates in sports and role-play. Agneta ponders on the week of the diary, whether it was a ’normal’ week, and concludes that there are no ’normal’ weeks. They’re all a bit chaotic. On the one hand she was busy organizing things for the move to a new apartment, which made it a busy week. But on the other hand
it was less busy since Fredrik's season of soccer-practice and games was over. She still had the responsibility of managing the Bingolotto-tickets for Fredrik's soccer club, though. Life-activities that appeared in her diary week included a project relating to the purchase and subsequent moving to an apartment. This project was initiated well before that week, and it was not to be concluded until the move was over a few weeks later. Other projects were to see a physician, being away from home in business, worrying about a relative that had taken ill, and regular household maintenance and some time to relax.

They both enjoy using the Internet as a source to information. They find it to be a good complement to the old reference books they use when they want to look something up. They have considered getting the national encyclopedia but found it too expensive. Fredrik use the Internet for class assignments, and he believes that his teachers assume that all pupils have access, perhaps not to the Internet but to some information sources at home. He rarely visits the public library anymore, and he doesn't believe his friends do so either. Using the Internet is much easier, he says. Agneta finds it a bit exciting to browse the Internet, but feels that a lot of patience is needed since things are hard to find and there is little order to it.

Agneta at times, but very rarely, brings work home. She is dependent on a computer to perform most of her tasks and it includes large documents that she downloads on discs. She could mail things home but has not thought about doing so. She also figures that bringing home floppies in her suitcase make it more palpable that she's actually bringing work home (Agneta, 157). Nor does she pursue very many private matters at work. When she's out of the office she brings the cell phone so that she can be reached, mainly for work but sometimes for family calls. She has a private-folder on her email reader at work but does not get much private email. In it she puts communications with her colleagues that are of a more personal nature. Occasionally she browses the web at work for private matters, and she expects that she has more bookmarks at work than she has at home.

**Ester**

Ester is 65 and has retired from a job as a systems analyst for a large computer company. She is a chemist by trade but later took computer classes at night school. She lives in an apartment in a suburb of Big-town but spends time in her house in a Mediterranean country, a cabin
in the north of Sweden and a house in the countryside outside of Bigtown. Ester's only child is a daughter working as a computer consultant in another city. Ester is very fond of the gardens by her houses and is active on the board of a gardening association. Another interest of hers is to keep up with developments in computers so she reads several magazines about it in addition to other literature. She spends part of her diary week at the house outside Bigtown. When she's in the city, she has errands to run and activities such as fixing her car, seeing and talking to friends and working with the gardening organization and an alumni group from her old employer's.

Since she became a retiree she thinks she watches TV too much. Ester also finds herself sitting too long in front of the computer, browsing the Internet. She likes that there is so much available on different topics, and that it's available for free. She collects information on things she take an interest in at the moment, such as Java programming, pretty pictures and stuff on astronomy. She participates in an Internet based community for elders, but finds the comments on the postings often to be "silly." (Ester, 80). She prefer to shy away from some information, things that she does not want to know anything about, such as the much heralded pornography on the Internet, "I've never seen pornography on the Internet. You'd have to look for it. If you don't, it doesn't exist." (Ester, 28). Neither does she follow the developments on a war that was going on at the time of this research "there's so much unpleasantness. There's so much suffering." (Ester, 82).

Eva

A week after my first meeting with Eva she turned 36. She lives in a brightly colored house just outside of Middletown with her two daughters who are 7 and 10 years old. She has been working for several years with the same company. The company produces large machinery and Eva works in the computer department with document exchange. Her major training is from courses provided by the company. Eva's only interest, aside from her daughters, is reading, and she says that she consumes 3-4 books a week of almost any literary genre. She also helps with her daughter's soccer club. Eva's diary week is the last week before the summer holiday, and her daughters are already out of school. She is making plans for the vacation and there are a few
parties that she attends. The girls are at home while Eva is working, and they make excursions to the beach with friends.

She got a home computer partly so that she could work at home but mainly so that her daughters could get access to the Internet:

As the kids are growing I realized that in order for them to keep up, to have a chance, because today information is strength, [I got it]... I cannot leave them out of what everybody else has. /.../ To reach information, since information is power. For the kids to be able to study properly because the books at school are useless. (Eva, 8, 10)

Eva imposes only few restrictions as to when and how the girls can use the Internet at home, as she believes in providing the access and trusts them to use it wisely. She loves books and reading books, and she has been reading to her girls since they were very young. She thinks that if they have information available from early on, they stand a better chance of learning how to make sense of it, how to find it and how to assess it:

You can't arrive at the University as a twenty-year-old and start using information for the first time. You need to have been fed with it. Since the scope of information available today is so vast you need to already learn as a child what to look at and what's useful. It’s difficult. Very difficult. (Eva, 20)

Eva tries and teaches her children about how information can be manipulated; not only texts but images as well. While she does not expect that they will be more or less gullible than the next one, she does believe they will be more observant.

Eva has a fuzzy idea of where the border of work ends and where leisure time begins. She often brings home reading from work to do in the evening, although she did not during the diary week. She occasionally needs to use the computer for work at home, but rarely the Internet. She tries to keep work at home on a low level, and to compensate by going home earlier from work, as she feels it’s important that her daughters do not feel she is absent (Eva, 95). But she finds it difficult to say when she is working and when she is not: “With the job that I’ve got, you do a lot of thinking. You can find a solution to something when you’re at a Soccer game. Is that work? /.../ It's not over just because its Friday night., My brain doesn't shut down.” (Eva, 95, 226). But she feels she would never prioritize work over her children. They always come first. At work Eva often develops personal relationships with colleagues. They exchange private emails, both short ones
and more extensive, and she keeps a private-folder of emails but often find it difficult to judge what goes where: “There may be a section in the middle that’s really important for work [and the rest is personal]. It’s all blurred somehow.” (Eva, 224). Eva’s diary week was a bit slow at work, and she think she had more private calls and emails than normal. Usually she has a few private emails, and some phone calls, and she may be browsing the web when there is only mindless work to do. Eva has got a good relationship with her manager, and he trusts her to distribute her time at work by herself, and she does not hesitate to take an afternoon off when she needs to.

Johan

Johan is 38 years old and lives with his wife and two children in a house in Middletown. His eldest is a boy of 10 and his youngest is a girl of 8. Johan is a middle manager for a telecom operator, and his job is to make technical configurations. He has a preparatory engineering degree and lots of additional training from his employer, where he’s been since 1986. Johan spends most of his time with his family and does not find the time to pursue any interests outside of his family. He’s got friends that play golf, and he wouldn’t mind doing it to, but he prioritizes the family. They recently had a pool installed in their back yard and they continuously work in their garden. During the diary week, Johan spends all of his time, besides work, with the family. Together they play in the pool, barbecue in the backyard, and make a cage for the daughter’s bunny. Johan also finds time off from work to accompany his children on school excursions, one with each child.

Johan finds the computer to be more engaging and developing than the TV—which he finds to be good for relaxation. He feels the children are still quite young, but providing them with the opportunity to learn is one of the reasons as to why he got a computer. “I want the kids to become computer literate, not by pressuring them, but by them getting to know it and to browse in a natural way” (Johan, 89). And he’s looking forward to having the kids sitting with him by the computer to see how he is doing and to learn from that. Johan likes to use the Internet by himself as well, to further his understanding of it and to find useful stuff that he may not know that he wanted and never could have formulated a question for.

In Johan’s diary there is no overtime at work, no work that he brings home and no signs of personal activities while at work, with the
exception of lunch. “I draw the line as I bike home” he says (197). It has happened that he has taken home things to read or something to do on the computer, but it is very rare. He is dependent on the computer and the system they have at work to perform his normal tasks, so it is difficult if he would like to do more work from home. Recently, he had the option to get a laptop at work, on which he better could do his job from home, but he declined.

When I couldn’t [bring work home] I often thought that it would be great if I could work at home, like if the kids have a day off from school. I think in such positive circles. But it can also bring negative things if you bring too much work home. You may feel a pressure that... I don’t think it’s too bad to have it this way. I draw the line as I bike home. (Johan, 197)

At work it is very unusual that he get private phone calls or emails (Johan, 8, 209). He has a cell phone and he uses it only for work, turning it off when he goes home. He is not sure whether his relatives outside of his household even have the number for it.

**Karl**

Karl has turned 52. He and his second wife live in a house in a suburb to Bigtown. She has two grown children and he has three. They are both self-employed and share an office a little closer to the city. Karl is a communications consultant with many years in the trade. In addition to work, things are constantly going on in Karl’s life. He feels that most of the things that happen are not by his own initiative, but induced by having a large family and many friends. During this particular week, his mother had taken ill and been hospitalized, which was a particularly worrisome experience since another family member had passed away only recently. Karl also said goodbye to a longtime friend that was moving out of town, he planned a bachelor party, and celebrated his own birthday. He also appeared in one of the morning papers where they wrote a piece in which he was involved professionally. Every evening as he comes home from the office, he takes a walk through their small garden to wind down and settle in for the evening. He enjoys reading, listening to music, and playing the guitar. He also used to play the piano.

Karl thinks of himself as a curious and impulsive person and he keeps reference books on both floors of his house to satisfy sudden
surges of curiosity. But his impulsiveness is also coupled with impatience, "My wife is also like this; we’re both impatient problem solvers." (Karl, 27). He feels he cannot stand waiting until tomorrow to find something out. With access to the Internet there’s an added quality to his curiosity:

If you get interested in something, there’s a world of opportunity that has opened up. We study Italian and have decided that ten years from now we will go to Italy and manage to get by on our own. And if we’re looking for a house to rent in Italy, we’re only ten seconds away [with the Internet], while a book may be five years. And there are no houses in the book we’ve got. We were out yesterday looking for houses in Umbria. It satisfies something where there is no question. You satisfy an interest. Immediately getting answers and getting knowledge, just because you’re curious about it. /.../ It makes me happy. It’s different from the dictionary, from the lexicon, from the newspaper. You always come to a halt. Even if you eventually do so with the Internet as well, you’ll never have time to get there. (Karl, 28)

But he feels that he gives it too little time and effort and that he jumps to conclusions and is prejudiced. If he were more patient and methodical he knows that he would get more quality information and he laments his impatience.

Karl brings the laptop home when there is something private that he wants to do, even though he is self-employed and his own boss, “I don’t want to play at work. You play at home. It may be that it’s a little performance anxiety” (Karl, 15). It’s important for him to keep work in the office since he fears that it gives an unprofessional image for someone who is self-employed to work at home. After all, he’s got an office for that (Karl, 95). His normal routine is to be available from the morning and to turn off the cell phone when he gets back home and to keep the evenings free from work (Karl, 144). “The time of day defines when I should be available, and the location defines whether I should be working” (Karl, 194). He knows that he could go home earlier and still be available for work, but he is satisfied just knowing it. He does not feel it is something he wants to do. This freedom also makes it possible for Karl to do personal things at work, such as flying off to visit his mother when she took ill. But most importantly, as a freelancer, he can keep in touch with business even when he is off on vacation. He brings the laptop and the cell phone to check email while they
are sailing, and soon he will be enjoying a beer in Denmark while touching up some work.

Kent

Kent lives in the country, well outside of Middletown where he works. He is now 45 and lives in a house on his family’s farm. Kent is an avid ham radio enthusiast and has several large antennas in the backyard. A more recent interest is to take courses and read about personal development. He’s been working at the same company since 1985, carrying out projects for the construction of telephone switches. His use of the ham radio equipment runs in periods, and during the diary week it was a down period. His major projects during the week were mowing his large lawn, mending garden furniture and hosting a meeting for the ham radio club of which he is a lifetime member. An ongoing project is to sell one of the antennas that he has put on the market.

The “ham spirit” (Kent, 84) is to put together the means to communicate on a global scale. The communication could perhaps be said to be semi-random and it is not an optimal source to information. Kent feels the Internet is a good complement to his ham radio. With the Internet he can get additional ham radio-related information in addition to everything else that’s on it. He thinks of himself as a pioneer when it comes to trying new technology, therefore getting an Internet connection was not a big step for him. But his more recent interest in introspection has made him turn away from the media squalor, including some Internet-use:

I’ve passed the Internet surfing stage. I use it when I have the need for it /.../ the answer to all your questions are inside yourself. You don’t get it from the Internet, you don’t get it by calling someone on the phone, from watching TV, listening to the radio, and not even from reading books, it’s all inside yourself. That’s where the answers are. You only need to listen to yourself. All external medias distract you. I mean, you are bombarded with information and you need to give yourself time to relax. (Kent, 220)

Kent tries to give himself time off from information sources by making conscious choices and turning off the TV, the radio, and the Internet, and by only trying to keep track of everything at only a limited extent:

Used the right way [the telephone] is an excellent thing. The Internet is also a really good thing... And the TV is a means to get
information and relaxation so moderate use is not a bad thing.  
(Kent, 222)

He expects the Internet to present a problem to families with children.  
In a way it is a means for uncontrolled diffusion of information and  
parents cannot control what their children see or hear anymore. He  
figures a parent needs to be around to explain to children what they are  
seeing.

Much of Kent’s work is dependent on the computer system he has  
at work, and even if he would like to work from home, he is not allo­
wed to access the computer system remotely. Sometimes he wishes  
that he could:

I work in an open space office and it lowers my efficiency when  
people are yelling and making noises. Sometimes it would be better  
to be at home with a project and be able to think in peace and quiet,  
to sit quietly and read and then go to the computer and produce  
something. (Kent, 60)

In effect, this means that he never works at home since he doesn’t  
bring home things to read either. During his diary week, there was no  
mention of private pursuits at work either, and he reports that when  
there is, it is only an occasional phone call and very little private email  
with friends at work.

Lotta

Lotta is 34 and has two young daughters. She is divorced and has met a  
new partner with which she has recently made a new home outside of  
Bigtown. He brings two sons to the home, so between them, there are  
six in the household. Lotta’s background is in business. She got her  
training at a prestigious business school where she started out doing  
research and working as a university teacher before she took up work­
ing in business, where she now has an executive position. She has been  
doing her everyday grocery shopping on line longer than there has  
been a WWW around. Initially she faxed her orders and got the gro­
cerries delivered at home. Her social life, outside of her family, is man­
gaged partly by speaking often on the phone while she’s driving. When  
she was younger she used to play soccer and basketball and she still  
takes an interest in sports. She also enjoys reading, but rarely finds the  
time for anything but work related texts. Projects over the course of  
Lotta’s diary week consist of preparing for a family trip to the moun-
tains and the summer vacation by the Mediterranean sea, attending a school play and a parent meeting at school, an overnight stay out of town, trying out new contact lenses and participating in maintaining the household with meals and clean laundry.

Lotta considers the TV to be more a means for relaxation than as an information source. She watches it very little, and as her cohabitant watches the news, he will let her know if there is something she should see. She makes use of other ‘agents’ that supply her with information as well. Her father provides her with clips from a morning paper she does not read herself. In a network of female business leaders she finds she can exchange information informally on topics that are particular to her situation as a woman, mother and manager. She is awed by the Internet phenomena, that it consists of such different types of information and the means for communication and she wonders what will happen with corporate hierarchy as information is no longer the advantage to only the few but available to anyone. But she would like better opportunities to get information from the Internet in a more sifted format, and she wishes she were better in organizing the information that she does get:

I’ve been thinking a lot about how to systemize this. Not the searching but when you strike upon something good. I tear out pages [from magazines]...and I don’t know where to put them? And should I keep my bookmarks at work or at home? I don’t know, but I know I’d like to be able to do it in another way. (Lotta, 155)

Lotta’s executive position requires her to work many hours, to be prepared to travel and to be available for other executives. She used to work even more hours than she does now, and for a while she commuted regularly to several European cities. Today she makes a point of being available for her daughters while still developing her skills as a manager. In order for this she budgets her time by working regularly at home, and she tries to limit work on weekends to Sunday afternoons. During the diary week she is not staying late at work, she occasionally gets there very early in the morning and she brings home material for bedtime reading. On vacations she brings the cell phone and a small computer to check email. At work she feels there is very little private email and telephone calls. Once when she was transferring from one job to another, she found herself quarantined and for a while she could
browse the web while at work. Normally she never has time to do that, she says.

Maria

Maria is 28. When she was young she moved with her parents between several different countries. Today her parents live in South America and other family and friends live in the Americas, Asia and Europe, in addition to Sweden. When I first met Maria, she lived with her boyfriend in an apartment in Bigtown. They later broke up and she moved to a smaller apartment to live as a single. The apartment is transitory and she expects to be moving again sometime soon. She has a University degree in communications from the USA, and she is working for a small Internet startup in downtown Bigtown where she has a few different functions. Maria has several friends in different groups that she often sees. She also likes to work out regularly and she tried qi gong during the diary week. She reads, travels and is interested in photography, at least she has been since she got a new digital camera. During her diary week she saw friends at different outings several times, which because the summer weather was unusually pleasant, she thinks was more often than normal. Normally she works out after work and then goes home, seeing friends mainly on weekends. Other projects were to prepare to move to the new apartment, being out of town on business for the day, and voting in the election.

Maria occasionally feels a little over stimulated by all the information she wants to make use of:

I've got five books going at the same time. There are lots of things that I want to see, to read, and to take part in. /.../ There's just too much offered, there's so much that's fun. If I speak with someone that gives me a tip about something they like, I'll want to read that too, but there's no time. (Maria, 85, 95)

She hopes to have time to do all she wants to do once she is retired.

Maria feels that her job is spilling over into her leisure time, but not the other way around. She feels that she works quite a lot during the weekdays, and she occasionally goes into the office on weekends as well. During the diary week she has a few late evenings at the office and she bring home stuff to read and to review on the computer over the weekend. When she has private phone calls at work she makes a point of keeping it short:
It’s unnecessary. There’s no call about 'how are you doing?' only matter of fact things such as organizing a meeting later in the evening. /.../ We’re working, both of us [on the phone] and it feels... It’s not the only time in life that we can talk. I don’t like talking when I cannot give all of my attention. (Maria, 165, 167)

She feels that walking around the office to chat with her colleagues is private enough:

We’re not machines! Today I strolled around and spoke with quite a few co-workers as it was the first day of work after vacation, and it’s enough. It’s a nice relaxing human contact. I speak with my friends in the evening. (Maria, 169)

Sven

Sven is 33, and he lives alone in an apartment in Middletown. He’s working in a business department for a big industrial corporation, and he’s got a degree in economics from a University in Sweden. Sven is considering moving to the city where his girlfriend lives, but he is undecided. He has been an avid computer user for about a year and it takes most of his free time. He has an interest in literature, but does not read much except on summer vacations. He’s also interested in Soccer, and follows daily news about it and other sports, and occasionally he plays tennis with a friend. Recently he bought his first new car, and during his diary week he bought his first cell phone. Other projects were to participate in an annual go-cart race with friends, attend a funeral, and participate in the elections.

On the one hand, Sven feels that he needs to read everything in the morning paper, and he gets back and reads in the evening what he missed in the morning. And on the other hand he thinks he widens his knowledge span only slowly. There is a lot of information to acquire on the things that he is already interested in, so between that and reading the newspaper, there is little time to learn new things, he says (Sven, 24). Since he got access to the Internet he believes that, maybe, he has become more of an active searcher for information (Sven, 357) but that he is still quite habitual about what he takes an interest in. Communicating with people on chat and ICQ is another story, and he feels it has dramatically propelled his social life forward.

Sven never brings work of any kind home. He expects that if there was an emergency, and he was on vacation, they could email something to him if he needed to do it. But as it is now it never happens.
A reason for this is that he lives very close to where he works, and if he needs to work, he goes to work to do it. Before he got the computer at home, he often stayed a few extra hours at work to play Tetris. Sometimes he still does, as the Tetris at work is different from the one he has at home.

Leo

Leo never completed a diary and data concerning his activities over a week of his everyday life is not at hand. All data about him is from one interview.

Leo is 31. He lives in a house in a suburb to Bigtown with his wife and two children, a boy of 6 and a baby girl. He is working in downtown Bigtown for an Internet related startup. It’s his third job since he graduated from University. Leo has a background as a member of the organization of young scientists where he developed an interest in computers and Science. Today he works as an interface architect. Besides work and his interest in computers, he enjoys reading books, although he does so much less since he had children.

To have access to information and to the means for communication, for himself and for his wife, is one of the main reasons as to why he often brings home a laptop from work. As we talk about his interest in the Internet versus an interest in computers as technology, Leo volunteers that “I want a lot of information.” (Leo, 37). He makes the same statement several times and explains as an example his interest in UFO’s and conspiracy theories, “or anything slightly bizarre.” (Leo, 47). Not that he believes in it in general but he like to look for holes in reasoning and to practice making judgments on how to assess information that may or may not be false. He also says to be more negative to getting too little information, which he find to be “annoying” (Leo, 168), rather than to get too much of it. When there is something in the news that is not fully disclosed, he reasons that it will eventually turn up on the Internet, and he gives examples of when he has turned there to find more information revealed.

Leo tries not to work too many hours and he has the freedom to exchange time at work for time working at home. But he finds that an hour less at the office is exchanged for more hours of semi-working at home. He feels it is difficult to concentrate on work while the children are at home and it makes him feel as if he is neglecting them. He has his priorities clear and has no problem about where to draw the line:
“It’s easier to get a new job than to get a new family. To me this priority is quite simple, but I can imagine that other people can have problems in drawing the line.” (Leo, 25). His freedom at work also means that he can take care of private business during the day, email and speak on the phone with friends, and browse the web, if he needs to.

5.3 Summary & Findings

This summary is not of the model as such, but a summary of the empirical data that relate to the Environment part of the model. More particularly, this chapter consists of general backgrounds and projects that were reported in the diaries; their general interest of information and of information systems; and the strategies of how to manage work in their everyday lives.

The significance of this material is how it relates to the other three parts of the model, and as more empirical data is presented further ahead it will show to be a valuable basis for analysis. In order to be able to relate to findings that will be enclosed in the summary sections of chapters 5-8, I introduce them as brief, numbered, statements. The value of these findings is discussed in section 9.1. In addition to being statements about the respondents they can be read as hypotheses that may be relevant to other similar cases. At this early stage there is really only one point to be made:

# 5:1 The approach to deal with the work-project is different among the respondents.

The content of work, or gainful employment, is not specifically considered in this research and is not catered to in the definition of everyday life. But those of the respondents that do work (all except Ester, who is retired from work) can be understood to have a generic project approach to work. From the point of view of everyday life, problematic situations in relation to manage work arise continually, which make it useful to consider ‘work’ as a project in itself. Within the framework of the work-project, problematic situations arise that need to be dealt with, and it appears that different respondents have different approaches in managing these situations. Examples of such problematic situations are instances where the distinction of ‘work’ is hazy. For instance, when talking about email, respondents continuously intertwine stories of professional and private emailing. One reason for this is that for some there is much private emailing going on at work.
Distinguishing such email as either professional or private and filing them in relevant spots is sometimes difficult. A more salient difference in approach is found in the allocation of time on work related-activities and privacy-related activities. Some respondents have few private activities at business hours, except for lunch, and no work-related activities during their private hours. Others show more of a mix of work and private activities on and off business hours.

As more empirical data relating to the model is developed there are also more opportunities for analysis. In the chapters to follow this will become obvious as the summarizing chapters become increasingly extensive.
6 ICT-Settings

6.1 Introduction

The physical access to information, in terms of the particular resources the individuals have access to, is not presented here in a comprehensive summary, mainly because such data has not been comprehensively gathered. One could consider doing this, but a table of every available information system with an account of the number and genre of books in the bookshelves of the respondents, would invade their privacy without a strong legitimization for doing so. The resources that they have, and that they lack, are instead discussed as they become relevant in this chapter and in chapter 7 on information-activities. The forms of interests, social considerations and strategies for acquiring computers and an Internet-connection, is, however, treated comprehensively throughout this chapter, as is biography and experience of computers and the Internet, and practices and consequences of interacting with computers and the Internet.

6.2 Biography and strategies for acquisition

When the respondents speak of the computers and other ICTs that they have in their homes, their reports are quite different. Some of the features can be regarded as central, as they appear again and again. The knowledge and understanding that they have of the computer is one such feature, and it is especially central in respect to learning new things, such as information gained from reading manuals and in managing contingencies. Issues relating to this are discussed here as early encounters (and further in section 6.3 Interacting with Technology: Practices & Consequences.) Another feature in how the stories are similar, and yet different, is found in the interests that the respondents have in the computer and the Internet. This is discussed in the section Interest, Means and Demand. A third feature is found in the strategies for appropriation that the respondents have shown to make use of, as a matter of assessments and household dynamics, leading to rejections of
technology and perceptions of need and utility. This is discussed in the section Strategies for acquisition.

6.2.1 Early Encounters

The first contact with a computer, among the respondents, was at work. For those too young to have had a job at the time, it was at school or with friends. In the case of the Internet, the first encounter was without exception in the shape of email.

A few respondents report they were unenthusiastic when facing a computer, such as Agneta:

> We started with Mac’s at work even though we resisted. Our manager wanted to implement computers but we were totally against it, all of us. But he pushed it through and sent us off for training. We resented it, as we can do with certain things. There are still those that are against computers. One were against computers, there was something obscure about them. (Agneta, 3)

None of the respondents said they were ‘somewhat’ interested in technology. They either maintained a total disinterest or a genuine and long-standing technical interest. In other things they said, the matter of interest in technology was illustrated to be more complex than entering an ‘on’ or ‘off’ mode. While maintaining that their interest lies solely in the use they can make of the computer and not in the technology, some made attempts to understand the technology in order to master their use of it. Others were more enthusiastic and claim to have seen great potential in computers. Mostly, though, the early experiences are quite matter-of-fact and neither excited nor unenthusiastic.

Agneta: “This is it, nowadays.”

Agneta has never had any technical interest. As she says in the quote above, the computer was something obscure that was not readily understood. Since her first encounter, around 1994, she has taken courses at work and considers herself to be knowledgeable in everyday tasks: “Daily things such as Word, Excel and surfing, doing the ordinary goes quite well” (Agneta, 30) she says. She is dependent on the computer in her work and she uses it almost every working day. Only when she is away from the office, a few times every month, is she free from the computer. Her son first talked about the Internet with her in 1996 or 1997 as he had come across it in kindergarten. Anything out of the
ordinary is a problem to Agneta and her son. When something goes awry with the technology they have limited resources to draw upon to solve the problem. While the son ‘will have a go at it,’ alone or with a friend, he can rarely manage contingencies. When asked about her knowledge Agneta replies "I know the number for the helpdesk." (Agneta, 30). Even so, they have a scanner and a printer that they have never gotten to work at all. Lacking interest, Agneta does not make any attempt at increasing her knowledge level by reading about computers that she may come across or taking an interest in a TV-program about it. "It should work. I want to sit down at the computer and it's just working. It just should work," (Agneta, 35) she says.

Agneta and her son have two computers in their household. One they bought for Fredrik and the other one came as a subsidized offer from work. They are quite satisfied with what they got, although Fredrik would not mind a CD-writer. Purchasing the first computer is, in retrospect, considered by Agneta to be a mistake. Had they not bought it before the other one, they would have settled for one computer. She expects them to keep these computers until Fredrik leaves home, even though she does not expect him to be interested in taking it along at that time. Perhaps her daughter will need it as she is expected to go to college at some point, she argues.

When Agneta and her son had owned their computer for half a year, she got an offer from the union in which she is a member to get a leasing-PC. At her office there had been some talk about when they would get an offer from their employer as well, and at this time they still did not know when it would come but it was expected to be soon. The offer from the union was spoken of at work as several others had gotten it too, and it was agreed upon that the offer from their employer would be more beneficial. Some people said to wait for the offer from the employer. Another six months later it came. Everybody at work agreed that this was a good offer. Agneta knew which ones at her department had accepted it and which did not. Agneta surprised her colleagues somewhat when she said she would take the offer. They knew she had a rather new computer at home already. So, in her household she now had a brand new computer, modem, printer, microphone and loudspeakers. The new one was fast, it had a frequency of 200Mhz, whereas the old one had 150. It had a large hard drive of 3 Gigabytes, and the old one 2. One could say that there is only a marginal difference between these computers, but Agneta said, "This is it nowadays." (Agneta, 283).
The assessment that led her to accept the offer was very much a matter of expectations. Even though she did not think she had much use of a computer at home, she expected to start using it. Also Fredrik was getting older and could be expected to use his computer more and more, especially for school. Were she to use a computer she figured that she would like to use it at about the same hours as Fredrik so there would be a conflict. Also, her daughter was expected to go back to school at some point, and thus would need a computer as well. Agneta and Fredrik have had a lot of problems with the computer they bought earlier. It had been acting up and giving them a hard time when they wanted to install peripherals on it. As they both have limited resources to manage these problems, the leasing-PC was a guarantee that they would have at least one well functioning computer. From the mistakes they had made with the first one, they would now know what not to do with the new one in order to keep it working.

Eva: "Why should I buy one if I can borrow one from the office?"

Eva’s prehistory to being a computer owner is similar to that of Agneta. She got her knowledge from work about the same time, on both the computer and the Internet. She has no technical interest but has managed to learn enough so that she ‘can help others’ as she says. She tries and solves problems herself, and is quite stubborn about it, but has no problem in asking others for help.

Eva accepted a leasing-PC offer from her union, but she only took parts of the offer from her deal and borrowed a screen from her office. She got it mainly for her children as she figures that:

The kids are growing and I realized that if they are to have a chance and keep up at all they need it, because information is strength today. So it was for them, and to be able to work from home. But the Internet is for them. They can’t get left behind. (Eva, 7)

She’s quite satisfied with the computer. She figures it is a little slow and would love to have one that is as fast as the one she has at her office, with a 21” screen and other extras, but realizes that it is far too expensive. It is okay for her and for her children. While a slow computer at work makes her edgy and restless, it’s more okay at home, and the children have not complained in a serious way. They would not mind a computer each, to put in their rooms, but they do not expect to
get it. Eva is not considering getting a new one, neither is she considering other stuff that she would not mind having, such as a scanner and a CD-writer. They have what they need and they want to do other things with the money they have, "Why should I buy one if a can borrow one from the office?" (Eva, 287) she asks. She expects that she would be able to get her hands on something at the office, as she needs a more powerful one in line of her work.

**Johan: "We tagged along"**

Like Agneta, Johan was offered a subsidized computer at work only shortly after he had purchased one. And like Agneta he took the offer. But first: the purchase. Johan’s wife had been taking classes and needed to use a computer to write reports and papers. At first she went to the public library where there were public computers available. This was awkward for her, as she had to ‘write on demand’ as Johan says. They had the opportunity to borrow a Mac, and for a while it was the fix to the problem. But the solution was not permanent and they needed something else. Johan pondered on the issue for a long time. Not only did he want his wife to have a computer; he also wanted his children to have access to one. While they were very young at the time, he still thought that he wanted them to be exposed to a computer so that they could approach it and get to know the computer and the Internet without pressure. He wanted to give them the chance to become computer literate at an early stage, at their own pace. He says he did not feel he was excluding them from something when they did not have a computer, but it gave him a sting of stress. His wife had no desire for a computer and did not see the need to get one. Johan says, "I guess it was me. Definitely" (Johan, 289) who was the driving force to get one, even though he stated the use was for his wife and children, not for himself. When he was at a computer exhibition, he made notes on which specifications he would like to have in a computer. It was approaching Christmas and he figured he was ready to get one now. He distributed the notes to the exhibitors and asked of their prices. He settled on a computer package and made the order. A friend that was with him at the exhibition also made an order from the same company. Once back home he heard from another friend of how they had got a package from a company in their hometown. The specifications and the price were more or less the same but he considered it an advantage to have the computer delivered from the hometown, should there be a
problem with it. Also he thought they were a reputable firm from what his friend told him. So he canceled the original order and got the package from the other company:

Considering that they were reputable, the other ones probably were also, but having this help desk, being able to go downtown instead of sending the computer somewhere else. We made our choice based on that. I believe it's very important to have it in the vicinity. (Johan, 286)

From another story of how Johan was considering purchasing something for the household, it becomes clear that the assessment-process also is a process that takes place within the totality of the household, more than being merely Johan's decision. They have considered but rejected both an answering machine and a number presentation service. In his words:

I think... We haven't created the demand for it. It's the same with this DuoCom, ISDN where you can answer the phone while connected to the Net, there was an offer. So I asked [my wife] whether we should get it and she asked what does it do? Well, you may answer the phone while you're surfing, I said. And how much is it, she asked. When I told her I could hear for myself that it was something we didn't need. (Johan, 351)

There are lots of things that Johan would not mind having but as he says, he has no real need for it. He doesn't consider himself to be a stuff-buff but thinks, 'Wow, what will they do next?' and settles for that. Or so he says. He has considered getting a scanner also. Looked around but "nothing has made me fall over to get one" (Johan, 313) and he says he finds its usability to be too limited to make him buy one, and then again "but probably I can use it more than I think." (Johan, 313). To conclude, one might say that Johan would like to have all kinds of technology, and he thinks he could find uses for them even if they are not obvious to start with. Practicalities such as the means to get the expensive machinery and the joint assessment with his wife are what holds him back. When the assessment is done the resolution is rejection, except for the computer that they did buy. After a while they got the offer for a leasing-PC and he explains why they took it:

It came perhaps 3, 4 months after [buying the first computer]. If we had known, we would have waited. But there was an Internet package and it was a bit bigger, so we tagged along. /.../ It was good, and the first computer are for the kids now even if I sometimes fid-
dle with it, downloading games, demo’s and stuff, even though you might have to reload it sometimes. You could say it’s a bit more of a trash-computer, while we try and keep the Internet-computer a bit more serious. We don’t want to risk ruining it. (Johan 294, 296)

They did have a new computer but no Internet-supplier or modem. He had planned to get that too but had not gotten around to it. The fact that they ‘tagged along’ with the offer, as he put it, was because it was a bit bigger, it had the modem and a deal for an Internet provider and also he could let the children use the other machine and reserve the new, better, one for himself and his wife.

**Lotta: “We can’t buy four computers for them”**

Lotta has been using computers at work since about 1986, and email since about 1990. The technology of the computer does not interest her in the least, but she is quite willing to make use of it, privately as well as professionally. When something isn’t working, she has other people to help her.

With six persons and two merged households, she feels her house is about ready to explode from all the ‘stuff’ in it. She was never interested in having things for their brand name, being forced to get new stuff when the brand of the year changed. And then again she does not want for her children to feel they get less only because she is a single mother. She feels that her new cohabitant has been more into getting the exclusive and fancy stuff for his children. They are well off, both with executive positions, and her and her cohabitants’ means to acquire technical equipment is very good. In line with this, her assessment of what to get is mainly a matter of need. She reasons that if someone in the family has a need for something, she will get it, but she will not necessarily get the most exclusive thing only for the sake of it. As they already have a lot of things the needing person will have to review what they already have to see if something could be used. If they are to get a new camera even though they already have one, she argues they will have to get rid of the old one before getting a new one. Concerning information technologies, she has always been able to bring a computer home from work, thus she has never bought one. Also, computers were brought from her cohabitant’s household and now they have at least one stationary, one laptop and another very new and modern computer that is smaller than a laptop in her home, from which she can read mail and synchronize it with the stationary computer at
work. They are not planning to get any new things for the moment, as she says: "We can’t buy four computers for them" (Lotta, 218). They are, however, going to install a local area network at home. Again, this is due to a need they feel they have. With the network, which an old school friend of hers will install, the children will not have to use her computer in the parent’s bedroom, to print in color. Also she will be able to have her fax up and running, which has been stored away for several months. She is assessing in terms of functionality, and of sharing the resources that are at hand. The children do know what is the coolest and hottest thing to have whether it is a matter of sports-equipment, computers or a boat, which the family is considering.

Maria: "I don’t tinker with it"

Maria encountered her first computer at home in 1987 when she was 16. When she was an exchange student in the USA in -92 she learned how to use email in order to communicate with her family. Without any formal training she later had the responsibility of a systems operator at a small company, and today she works with the Internet, which is one of her most important tools. She has no technical interest. She wants to know more in order to be a more accomplished user but as she says "I don’t tinker with it." Perhaps in spite of that she has become quite knowledgeable.

Maria has a computer at home that she finds to be old and slow. Not that it is extremely old, but it is significantly slower than the computer she works with every day at work. If she got a new computer, or could borrow one from work, she figures she would work more from home. Today, she mainly uses her computer as a communication’s tool. Her family and many old friends are living in other countries and she has frequent email contact with them. For this purpose she also bought a digital camera. Her sister, living in another country, had got herself a digital camera to send pictures to their parents. Maria found this to be a super idea: to be able to show her parents what her life looks like in Sweden. Sending the images on email does, however, take a long time with her slow computer and slow modem, and this is a source to frustration for her. Her resolution to this is not to sit and wait for the images to load, and to hope she will be able to borrow a computer at work some time in the future. There are also other kinds of ICTs that she would like to posses. She wants a new cellular phone and an MP3-player to listen to digital music downloaded from the Internet. Not too
long ago she got a Palm Pilot, and she is very happy with it. She agrees to be a bit into having it to show off in order to maintain a status of equality towards her peers at work.

Once we were in a meeting and we were going to set a time for a new meeting and all the guys took up their Palm Pilot’s, the girls all had some kind of paper... And maybe it’s a really stupid reason but I had already thought of how much I wanted one and now this was it. I just had to get one because this is too much. (Maria, 225)

Now that she’s got it she feels that she is more equal, she is no less available or connected than the next one. Even though she has no patience for reading manuals and systematically getting to know the technology she has, she has put some effort into getting to know her Palm. She finds it intuitive and visual, which she appreciates very much. She has not studied the manual for the digital camera either, but after a holiday trip she had a glance at it. As she did, she realized that she could have taken more beautiful pictures than she had

Sven: “Save the boxes,’ it says”

Sven got his early experiences in computers while at the University around 1989. He first came across the Internet at work in 1996. While being a heavy user today, Sven also thinks of himself as having very little knowledge about the technology. Like Agneta, he knows the number for the helpdesk by heart and he thinks of himself as not being technically disposed. ”I’d rather ask than do something inappropriate” he says, and continues ”When you’re at some unknown place, a program or something, it could be that I’m a bit of a coward. Not trying a lot of stuff. A bit afraid perhaps.” (Sven, 32).

A very long period of assessing, temporarily rejecting the decision to purchase but leaving the door open to get back to it is significant for Sven. He recently bought his first cell-phone, and he has bought a brand new car, which is his first car ever. He say’s he has been thinking about a car since he did his military service a decade ago, or more. As he decided to get one he figured he had saved so much money on never owning a car that he could afford to get himself a brand new one. Sven is living alone and has recently met a woman that lives in another city. The need for the car as well as the mobile phone is much a result of this. Before he met her he could not see a particular need for either. The computer is also his first ever. It has been about a
year since he got it as a leasing offer from his employer. Had he not gotten the offer he figures he probably would have bought one on his own at some point. The fact that he's got one at all he thinks is very much due to the fact that he was offered it at work. He got his leasing-PC in June of 1998. For about two years he had been staying late at work sometimes to use the computer and play Tetris. He had thought about getting a computer before, but not in a serious way:

I had been thinking about it, a bit, but I hadn’t been shopping around. I looked at ads when I saw one, looking at how much they cost and such. But I haven’t been that... not that I was planning to get one the next day. But when I saw this I thought I wanted in on it. I kind of... "Yea, I'll take it!" (Sven, 440)

Sven took no particular interest in the brand of the computer, or thought about its performance, but expected it would be the latest, that his company would not offer anything less than the best. He did take an interest in its peripherals; he wanted the CD, the speakers and the printer. The deal was flexible in that he could choose between optional things that altered the monthly costs for it, and he choose a more expensive 17” screen instead of the stock 15”. The offer was talked about at work and he believes almost everyone took the 17” screen. It was not talked about ‘that much’ but some said ‘I’m definitely getting in on it’ while others said they were not. As Sven sees it, there is one drawback with this deal: he quickly got used to having the computer and was a heavy user only after a few weeks. Since he got it he started chatting and met his girlfriend through a chat-service. He figures he is dependent on the computer and the Internet for much of his social life:

The nasty thing is if I should leave the company. That’s not fun. There’s a paper I read that says what’s going to happen if you terminate your employment. You’re supposed to return the computer in the same condition you got it. "Save the boxes" it says, so I still have them in the basement. It’s tough but it’s... It’s really serious that the most upsetting thing about leaving the company is that you’ll have to return the computer. I’d have to buy one. (Sven, 460)

**Karl: "An irrational craving."**

While Sven has not faced any serious problems in managing his computer, Karl has. And like Sven, Karl believes that were he to be faced with a problem, it would be a problem. Karl freezes in his tracks. "I’m
not able.’’ Karl says, and continues, ’’At the slightest disturbance it stops. Then I have to use a consultant, which costs a lot of money.’’ (Karl, 34). Karl is self-employed and dependent on the computer for his work. In his business it is usual to have Macs and he finds himself isolated as a Mac user. He says the good thing with the Mac is that there rarely are any disturbances, but when there are, he has no one to turn to and no means to solve the problem by himself. The very thought of learning to manage the technology puts him off. He has been working with computers since mid 1980’s but he takes no particular interest in the technology. When he uses a computer at home it is a laptop that he bring home from work. This is his third laptop and he expects to replace it soon. Necessity drives his purchases of a computer. When a customer needs service from him, which he cannot deliver with the equipment he’s got, he is forced to buy new things or to upgrade what he’s got. ”If you cannot afford a computer, you shouldn’t run a company” (Karl, 240) he says. And once the necessity is there he goes to a relative for advice on what to get. His informant is an expert in this area and Karl feels he has to fall back on the informant’s advice. Despite this matter of necessity, Karl feels he is somewhat hesitant in getting new stuff. ”What make me postpone a change is that it’s so complicated to move stuff over (to a new computer). Now it’s working with this PCMCIA-card and... Man!” (Karl, 244) This may be a sign of how lacking support has a role in assessment. Another issue to assess is demand, and its role is illustrated in another example of his.

An irrational craving that is not from a real need is that I’d really like to have a Palm Pilot. It is really cool. It can’t communicate so it’s basically nothing more than a really expensive notebook, and that’s what holding me back. (Karl, 244)

Another thing he has considered and rejected is a stationary home computer. When they use the laptop at home they generally surf the Net for recreational purposes. They sit comfortably in a nice easy chair with the computer on their lap. He feels that a stationary computer would not allow this. Also, they keep the laptop out of sight. When the cleaning lady comes they tuck it away. They even make a point of not keeping it visible from the windows of their house. A stationary computer they find bulky and conspicuous. If and when they have a need to do things on a computer that the laptop cannot do, such as layout for an invitation, they do it at work where they have the ‘real stuff.’ Rejecting
technology as conspicuous and postponing technological change for the complications they carry could imply a fear and distancing to technology over all. This is not quite so, which Karl’s ‘irrational craving’ shows. Also they do have, and make use of, everyday ICTs such as an answering machine and number presenter. These technologies are less complicated though, and Karl has no fear of breaking them. Otherwise Karl says they rent as much machinery as they can, TV, VCR, white-goods and so on, for the reason that he has no patience to read the manuals and learn how to use them. As a consequence of his disinterest he reports that he tries buy stuff on his own and often ends up breaking the equipment. Not so with the answering machine. With it he filters messages to empower his leisure time: "Technology often intrudes on me, masters me, orders me, and sometimes I just want to use it in reverse, to keep things away from me. I want to use it to decide for myself.” (Karl, 258).

Ester: "I haven’t mastered Windows, and it bothers me"

Ester has more extensive qualifications to master her computer. She has a working knowledge of computers that goes back to the 1960’s. Her first computer at home was an ABC800 back in the early 1980’s. She has never built a computer of her own but she has always been interested in the computer and what it can do. She had a Mac for a long time, but felt obliged to get a PC not too long ago and this is a source of frustration for her. With the Mac she could always find the answer to questions in her manuals, but the PC is not that simple. "Sometimes it just freezes! What do you do then? I just turn it off, and then when you start it again it runs a Disc scan for half an hour. I haven’t mastered Windows and it bothers me” (Ester, 22) she complains. She thinks she is dependent on support service to manage some of her problems. And like Agneta, she has a printer that they have not been able to help her with. Ester is retired now but her technical interest is still there. She constantly wants to learn something new and her latest project is to read a manual on Java programming that she downloaded off the Net.

Ester felt she was forced to get a PC. Not that the machine she already had was that old and crummy, but she had reached a point in her use where she found the Mac to be insufficient. She is interested in what she can find on the Internet and likes to download programs to enable her to do small stuff with her computer, such as fancy screen-
savers. But for the last 4-5 years she finds that all the magazines that write on these things are mainly concerned with PC’s, and not Mac’s, and like Karl, she feels isolated as a Mac user. With this trouble to find information, she saw fit to drop her long-standing Mac use and switch to PC. Ester does not offer any other legitimization for her purchase. She loathes PC’s as opaque and difficult. Had she felt that she had a choice she would never have gotten one.

Kent: "You’ve got to make the leap sometime"

Kent, like Ester, reports a genuine and long-standing technical interest. Originating in an interest in ham radio, Kent was building his own computers in the early 1980’s. Recently he bought the first one that was not built by him, but ordered according to thorough specifications. He first heard about the Internet at work about 1995 or -96. He tried to get his manager to let him try it from home "but the manager did not believe in it" (Kent, 4) as Kent put it. Soon after, they got a local area email system and later still he got a browser for his company computer. Kent is technically knowledgeable about computers and reads computer magazines. At work he seeks out courses to further his private interest. Kent makes a distinction between the ham radio and the computer, he says:

Sure there’s a connection to the Internet. There’s competition now in recruiting new ham radio enthusiasts that is difficult. The average age among radio-amateurs is rising. It’s a lot easier now, you can sit in a city and accomplish the same thing. But the ‘Ham Spirit’ is precisely to accomplish it on your own. Consider the magic of strapping a wire between a few trees, pushing it in to the little radio and speak, and suddenly someone comes back to you from the other side of the globe. And you did it yourself. You can even have solar panels at both of the ends and no other connections, only the space to carry the waves. (Kent, 89)

Kent’s story is a good case for how acquisition is not a straight matter of an assessment-process followed by a ‘get or reject’ resolution. Comparing Johan’s rejection and Kent’s ‘getting’ of an answering machine, for instance, reveals that household dynamics do play a role. Kent, unlike Johan, lives alone and has his girlfriend living elsewhere. When making the assessment for something, his considerations are made by himself only. Kent lives in a house that is crammed with technology. One whole room is dedicated to a Ham radio and the
computer, the lawn outside has several large antennas and in his living room he proudly demonstrates his stereo, making the walls vibrate as he turns up the volume. He feels to be in complete control of the technology. Being this comfortable with it, he sometimes toys with it. When someone calls him and gets the answering machine they will hear loud music being played in it, then Kent's voice that says "Yea, hi it's Kent. Could you hold on while I turn down the music, hang on." The music is dampened and he's back, cooler now: "Kent speaking? (pause) you may leave a message after the beep!" (Kent, 284, 285)

With his knowledge and interest in technology it is no surprise that he has been building his own computers. The latest one, however, was bought from a company already assembled. He did already have a computer and a modem, but after visiting a computer exhibition he thought it was time to get a new one. He specified exactly what he wanted, not as a matter of performance, but exactly which parts he wanted for it. By discussing the details with a salesperson he found a good combination of parts. At that time it was a 'killer' as he put it. It was fast, exclusive and expensive. He was well aware of the continuous improvements that are made on computers and reasoned "you've got to make the leap sometime." (Kent,307). So he spent more on the one he bought, and made it perform better than he could see he had use for at the time, in order not to have to upgrade it for a while. Even though his computer is not a 'killer' anymore he's quite satisfied with it. He has upgraded his modem but has settled for that. He doesn't need a faster or better computer as he uses it mainly to maintain a database relating to his ham radio interest and to browse the Net. He figures the graphics could be better if he was more into playing games with it. He would not mind a flight simulator, but then he would prefer to have the image projected to the iris, he says. This is something in line with his expectations: He believes there are great changes taking place within computer technology. From what he has read, computers and interfaces will change 'in the future,' which is also a reason why he is reluctant to get a new computer at this point.

Leo: "A magical error"

Leo first encountered the Internet sometime around 1987 when a friend who was a student at a technical University introduced him to Telnet. Leo had been working with computers at home since about 1982, so he was already familiar with the technology, and around 1985 he had seen
local area networking. After high school he worked for a year at a computer center and by 1989 he went to University where he became used to working with Telnet and email. Since leaving the University he has been working with computers, currently as a usability engineer. He got his first 'real' home computer with a modem in 1992. For a while he had an ISDN-wire to his home, but not anymore. In—93 or early—94 he first encountered a web browser. Today he has a laptop at work that he brings home in the evenings to use for work and private purposes. While he has friends with greater expertise in the technology than himself, he feels that he is proficient in making use of the Internet and its different applications. He says that he is not afraid to experiment with the technology, that he is a bit disrespectful with it, and that he does not even want to know too much about it. As long as he was using a Mac he felt quite self-sufficient, but as he switched to the PC he sometimes has to ask for advice when there's "a magical error". (Leo, 41)

6.2.2 Interest, Means & Demand

What forms of interests do the respondents have in the computer, the Internet, and other ICTs? In order to get in the position where you have a computer with an Internet connection in the home, which all of the respondents have, you need to have some kind of interest in achieving this. Except, of course, if someone else in the household is instrumental in acquiring it.

It is noticeable that most of the respondents do not claim any particular interest in the technology per se, as much as an interest in making use of the technology. While Kent and Ester do have an interest in the technology, and Eva and Leo have shown signs of some interest, the others lack it. But it also seems to be clear that there is a difference between those showing signs of having any interest whatsoever and those who do not, in that those with an interest in the technology have had greater need to acquire knowledge of how to manage the computers in line with their career. For instance, while Eva is in a position where her work requires her to manage a computer system, Sven is not. Sven has no need to understand the workings of the computer other than what he needs to know to manage his tasks. Eva, however, is forced to manage contingencies in the system and has had a greater need to acquire a working knowledge.
One can also refuse to increase one’s knowledge, regardless of how much use one would have of it, as in the case of Karl: Being self employed and isolated as a Mac-user he would have use for knowledge on how to manage problems with the hardware. Instead of gaining this valuable knowledge he purchases support-service, legitimizing his action as having a ‘type-A personality’ and thus not being able to cope with the perceived, long time it takes to learn something with a perceived, distant and ambiguous reward.

But the matter of interest is complicated in two senses. First, the respondents display interest in other kinds of technology more than they do for computers and the Internet. For instance, Maria states clearly that the computer does not interest her in the least, and she says, “I don’t tinker with it.” Whereas she displays quite an interest in, and does some tinkering with, her palm pilot and her digital camera. Second, the motives for them to actually acquire a computer and an Internet-connection is not drawn solely from their personal interests but is clearly influenced by the demands of the whole household and by individuals located outside of the household. This may be important for the project of acquiring a computer and having it cross the threshold into the home.

6.2.3 Strategies for acquisition

One may assume that there is a relation between demand and means, which intuitively says that ‘in order for x to happen, demands and means are required to be at hand, of which at least one needs to be significant.’ Because common sense says that with small demand and small means, x is not very likely to occur. Looking at the means to acquire each individual computer, and in some households there are several, one finds differences.

Some machines are taken off the shelf and paid for on the respondents’ own accord (Agneta, Ester, Johan, Kent, Maria). Other computers are subsidized by their employer, thereby not formally being owned by the respondents, something that they pay for by deductions in salary, normally for 3 years (Agneta, Eva, Johan, Sven). Still other machines, or peripherals, are properties of the employer and only borrowed by the respondents (Eva, Karl, Leo, and Lotta). In some cases these are portable computers that are moved quite frequently between the home and the place of work.
Agneta, Eva, and Johan, report a value in getting a computer and an Internet connection for the sake of their children. Another reason, which was central to Sven and Karl, but also played a part to some of the others just mentioned, is that they find it to be valuable to have a computer for their own sake. The things that they all value is a matter of acquiring computer literacy either to better understand the computer or to have access to the Internet. But it does not say whether the purpose is to let them or the children get acquainted with using the Internet or with the technology as such. As they speak of letting the kids become computer literate, they do not make any distinction between the technology, such as 'learning to understand the logic's of the computer,' or 'learning to look for information on the Internet,' or learning in general by interacting with some pedagogical software. They understand computer literacy as comprising of all these aspects. For the other respondents, the prime reasons for acquiring a computer and an Internet connection are different. Lotta’s first reason is to fulfill purposes such as being able to work from home. Maria states that it is to be able to communicate with family living in another country. Kent wants to be able to maintain a database for his ham radio hobby, and Ester wants it so as to give her the opportunity for continued training and to help her keep up with technical progress. But the strength of the demand, the severity of the need, differs among the households and for some there is hardly any demand that is possible to discern at all. Typically, their interests lie more in the line of values they can find with possessing a computer and having access to the Internet, rather than means to ends purposes they can have with it.

The means of a monetary nature that are required in the different cases are obviously very different. Borrowing a computer from an employer involves no costs. A computer that is subsidized by the employer, or a union one may be a member of, does have a cost, but compared to a straight purchase, the cost is lower and it is distributed over time. Those who have taken this deal (not everyone has had the offer) are all in agreement when they describe it as a great deal and very cheap. The fact that they only get a little less in wages every month seems to be important. There are indications that they perceive the monetary means required for this to be very limited, if at all significant. It is simply very affordable. It has already been shown how Agneta took up such an offer only six months after she had purchased a computer for quite a lot of money, and the same thing happened in Johan’s household.
6.3 Interacting With Technology: Practices & Consequences

The presence of a computer and other information systems in the environment gives rise to issues that must be dealt with. In doing so, different people adopt different strategies. Following here are descriptions of such issues and strategies under the headings of Exclusion, Ergonomics, Constraints & Upbringing, Technology Trouble, and Fearing the Internet Boogieman.

6.3.1 Exclusion

Exclusion is one issue that is introduced as a computer enters the home, and it operates in several ways. While using the computer there is a spatio-temporal binding to the machine. One can in fact do other things at the same time as one is using the computer, but one cannot do everything. Agneta and Fredrik have planned to do some regular jogging together to improve their fitness, but as she laconically comments "one does not improve fitness in front of the computer," (Agneta, 28) and she thinks using the computer takes up time that could have been used for exercising. Another excluding factor is the attention demanded by the computer, as well as that of a TV.

All of these medias actually make people speak less with each other. Sometimes subjects pop up that you can speak of, but the concentration is on something other than the other person. In my parents summer cabin we didn’t have a TV set, and I remember it was so nice to come there. You cared for each other in another way. Then one year they got a TV but I didn’t like it because suddenly the TV was in charge. We had to eat at six because then there was some show on, and at seven there was this and that and ‘please can’t we put on the TV’? We used to play games! (Johan, 338)

Using a computer is not similar to using a television in every respect. There is often only one person using the computer at a time, and others are excluded from using it for other purposes, and the user excludes other things that may call for their attention. Agneta’s son uses this fact as a strategy in his use of the computer. When Agneta is tired and ‘not much company’ as she put it, he turns to the computer, knowing then that there will be no competition for his attention. In front of the television they share the same context and may comment on what they look
at and hear, or blurt out any comment about school or some other unrelated issue that may come to mind. Not so in front of the computer. Others among the respondents also use this strategy: While one uses the computer, the other watches TV (Johan, Karl, and Lotta).

Exclusion cuts two ways: The individual preoccupied with a particular information system is excluding their attention to be directed to something or someone else, and the fact that an information system is occupied excludes it from being used for something else at the same time. Both forms of exclusion have consequences not only to the engaged individual, but also to their social context.

### 6.3.2 Ergonomics

When Agneta bought the computer for her son, they went and got a new desk and an office-chair the same week. Her other computer is found in the living room and she uses a regular kitchen chair for it, legitimizing it with the claim that she never sits there for more than an hour at the time. Generally the respondents have well functioning workspaces for their computers. They have adjustable chairs, which they rarely adjust between one user and the next. Displays are often 15” and sometimes 17”. Lighting is generally something that is overlooked and not considered important. While the ergonomic concerns often are directed to the children they tend to take it lightly for themselves.

The girls have real chairs that are adjustable but when I work at home I don’t sit that long. It’s important to sit correctly when you do so for a long time, not being static but changing position now and then. They laugh at me at work when I put my feet up on the desk and have the keyboard in my lap, or am slumping in my chair. But as I move around in my chair, I never feel any pain, while the others are totally correct with straight backs, very still. (Eva, 280)

While they claim not to sit for that long at the time, when talking about ergonomic issues, they often give other impressions when talking about other issues, such as searching the web, and their diaries also give another impression. It seems there is a tendency to downplay the importance of ergonomic issues, although they are present.
6.3.3 Constraints and Upbringing

On a somewhat different tack, the presence of the computer, with all that it brings along in line of the Internet and game playing, has a certain appeal to the youngsters present in this study. Parents are attentive to this and while ergonomic concerns for the children matters, it is not their only concern.

We put a limit on the time they spend in front of a screen. Whether it’s the computer or the TV doesn’t matter, we limit it to two hours. It’s a matter of what’s appropriate for the body, for their own sake. So it doesn’t matter if it’s a game on the computer or a TV-program. But there are no violent games. (Johan, 64)

Limits on the time spent at the computer (and for some also the TV) is common to respondents with children. Limits as to which games they are permitted to play are also quite common. As we have seen earlier, there are also limits to the time they are allowed to be connected to the Internet, and at which hours, as the costs runs by the minute with different tariffs at different hours. There are also rules imposed on the children relating to disagreements on who is to use the computer. Many of these rules that fall upon the children are guidelines intended to teach the children to take their own responsibility in dealing with money, with resolving conflicts, and to adopt sound ideas to become human beings that are socially functional and computer literate.

There are four of them and there’s a one-hour limit as to how long they can surf and there are limits on how much time they spend indoors. This is rarely a problem as they have so many activities with sports and things. /.../ Sometimes when they are playing games there is some kind of quarrel, but it’s important that they learn to get along. We can’t buy four computers for them; you have to share the resources. It’s a part of one’s upbringing to learn... It usually works but then sometimes they call at work and say "I was sitting here and then bla, bla." It also depends on what they are using it for, if it’s something for school it gets priority. (Lotta, 215-218)

Everybody wants their children to have access to a computer and to the Internet, it is considered to be an important part in their upbringing and is for some the main reason to get a computer. There are constraints, but generally these are guidelines that are enforced only rarely.
Some of the respondents try and restrain themselves from using the computer too much. This is discussed further in relation to information-activities in section 6.4.

6.3.4 Technology Trouble

Contingencies arise, often as problems in managing the technology. Agneta bought a scanner one Christmas but she has never gotten it to work. Her strategies to deal with the failure to install it was to try and install it on their second computer, later to search for help in the manual, still later to listen with people at work for hints. She once formatted the hard drive on her son’s computer and reloaded everything, but still failed to install the scanner. Her brother, who she considers to be more knowledgeable in this area, was planning to help them during a visit but they forgot about the scanner while he was there. She says she has to get her act together and call the helpdesk, again, but they are only available during office hours when she needs to be at work. Since they are moving, she expects to try and install it once they are settled in the new apartment and hopes it will work then. In addition to the scanner they are in a similar position with a printer. After going through the motions of reinstalling, talking with helpdesk and friends, they have now resigned themselves to the fact that it is not working, and simply do not use it. They have another printer for the newer machine that is working. Since the chat-service that Fredrik likes to use stopped working, he has not used it and has no solution at hand.

Ester has a non-functioning printer as well and she never got the fax-program to work on her PC. Her remedies are to not use the printer and to keep her Mac with a functioning fax-program handy, using it only to fax.

"Magical Errors"

There will be problems. It’s bound to happen. It’s an innate property of the technology. All my friends have had the same experience. Sometimes they can’t afford to fix the problem, then the computer is not used. People aren’t that good. (Karl, 35)

Aside from obstinate peripherals, problems arise such as when the computer ‘freezes’. Leo referred to this as ‘magical errors.’ ‘Magical,’ because there seems to be no reason why the error arises. Sometimes the solution is to restart the computer but in more serious cases they
have to reinstall everything on the computer and data is sometimes lost in the process. This situation may arise when the computer has demo-programs installed or different small programs downloaded from the Internet and settings end up in conflict with each other. I told about Agneta’s experience with this, and how she had to clear her hard drive and reinstall everything several times, but she is not alone: Eva partitioned her hard drive after a severe crash, although she never quite got both parts of the hard drive to function properly. While not all of the respondents have had this experience, which can be quite traumatizing, some of the others have made assessments of just how important the stuff they have on their computers are to them, and how severe the loss would be, were the disc to crash.

The approaches used to deal with these contingencies are quite different. Sven, who is fairly inexperienced and careful not to tread on unfamiliar ground, has his approach clear:

I call helpdesk and say ‘Heeelp!’ But it depends on what it is that isn’t working. I’m not one of those who try things out. If I see something I’m not sure about, I’ll call support. I’d rather ask than do something inappropriate. (Sven, 29)

Kent, on the other hand, is much more experienced and makes a point of learning to deal with the technology. His approach is at the other end of a continuum and most of the respondents place themselves in-between him and Sven. But not even he is totally self-reliant:

I’ll call my cousin, he lives a few kilometers away, he’s Microsoft-certified at [a software company] and what not, and he teaches computer technology. He’s been my mentor in this. And then there are the Ham radio people, where helping each other is what it’s all about. And then if nothing else works I take out the knife.

- Take out the knife?

Yes, to cut the plastic cover off of the manual, ha, ha, ha. Seriously, I try and find the solution by reading. It’s in there somewhere and it’s not impossible. It’s through the errors that you learn. My experience with helpdesks is that the first person you talk with can rarely help you, they’re not knowledgeable enough. (Kent, 25, 27)

Agneta would not read manuals but instead turns to colleagues at work, to her brother or to the helpdesk, only the helpdesk has limited hours when it is accessible. Her son will have a go at a problem, but rarely
solves it. He may attempt to solve the problem along with a friend as well.

Ester tries and solves problems on her own. When she only had the Mac she liked searching the manuals to try and solve problems, but now as she moved over to using a PC she finds the manuals difficult to comprehend. She makes use of the help program in Windows but does not always resolve the problem that way. She too has an informant to turn to for help, and she did once seek assistance from the helpdesk regarding her printer-problem but to no avail. Eva is quite self-supportive but has turned to experts at her work to get assistance. Johan reports good experiences from the helpdesk and also has someone at work he can turn to in order to discuss a problem. Karl finds the Mac to be quite reliable, but immediately when there is a problem he will have to call helpdesk. Kent will have a go on his own, trying to find information to the solution in manuals, or call his cousin or ham radio-friends. Lotta has staff at work to which she turns and leaves it for them to solve the matter. Maria will find the fix by herself, among colleagues or from the helpdesk.

**The "Best-Computer" -Remedy**

The perceived risk of having to format the hard drive is present either by personal experience or by word of mouth and it is considered to be a serious problem since it causes a lot of trouble to get everything working again. For that purpose precautions are made in order to ensure that it will not happen, or happen again if it did actually happen once. One strategy is not to change something that is already working. Karl took on this strategy and it was also a reason for him not to upgrade or change to a new computer when he had finally gotten everything to work. Another strategy is to take an opportunity to designate a second computer, or one part of a partitioned hard drive as a ‘trash-computer.’ Agneta, Eva, Johan and Lotta have done this. To avoid the hardships, they have imposed rules on the household members as to what is allowed to be done on which computer. These restrictions fall mainly on the children, who are restricted from using the ‘best-computer’ for downloading this or that, and are not to open programs delivered in unfamiliar emails.

We loaded games on it once but it damaged the hard disc and we had to start all over again. That’s why it is partitioned now. There’s
NT on my half and Windows95 on the other half. It’s good because now they can crash some parts of it but they can’t crash my stuff. (Eva 271)

You could say it’s a bit more of a trash-computer, while we try and keep the Internet-computer a bit more serious. We don’t want to risk ruining it. (Johan, 296)

It may be an expensive way of doing it, if the sole purpose is to make sure to have one functioning computer, but it appears to be efficient. And the leasing-PC deal has made it an affordable option.

6.3.5 Fearing the Internet Boogie Man

Lacking an understanding of how a computer functions and what makes the programs run, several users find it hard to understand the reasons as to why problems arise. They are, however, aware of their own shortcomings and expect the problems to really be quite simple. Agneta says, for instance, about her non-functioning peripherals that, "I’m sure it’s just some ridiculous detail." (Agneta, 277).

The obscurity of the functioning of the computer and its programs may be analogue to real and perceived risks associated to using a computer with an Internet connection. Viruses and people tapping in on your computer present a vague danger. Similarly there is a strong hesitance to disclose identity, personal information and credit-card information on the Internet. Terrifying anecdotes are told in hushed voices and widened eyes. Agneta again: "...so I’m aware of that there could be hackers somewhere that can find things out." (Agneta, 251).

Ester says about paying bills on the Internet:

I don’t hesitate about it. But I don’t know, today, how it’s possible to get in and get information. I know it’s important with cryptography but I’m not sure of how it works. You hear about the poor security of the banks. (Ester, 49)

Sven reflects on the insecurities:

You’re open to the world; you’re out there. Anyone could go in and see that you’re there. Well, perhaps not anyone but those that are hackers. They could. You’re like, open. (Sven, 412)

Eva speaks of using her credit card and of viruses:

I don’t use my card on the Net. At work I can send millions without a second thought, I know it’s working there but at home you don’t
Anyone can go in and watch. You could do that at work also but it takes... Then you would have to have a real purpose behind it. Here anyone can... Someone at the (soccer club) experienced how their computer was taken over by someone. There was a virus they couldn’t manage and they just turned off their computer. Later (the telephone operator) called them and said they had been messing with other people’s accounts. So they reformatted the computer. There are virus-guards but those that make the viruses are faster than the people that make the protections are. And rumor has it it’s often the same people. (Eva, 253, 156)

Kent is familiar with this particular kind of virus, known as ‘Net Bus’:

If you’re round and about and your email-address gets out (you can get viruses). I’ve got these antiviral programs that you should have and NetBuster against this NetBus where people can read your screen from remote. (Kent, 278)

Johan on viruses: "If there’s something weird in the email I’ll react. And sometimes there is, someone has gotten hold of your address somehow.” (Johan, 261). Maria expects this more than fears it and adopts a pragmatic approach:

If I’m at a site from which I want to download a demo or something, and they want some personal information from me in return then fine. I know it’s valuable information for them but I just couldn’t be bothered. You really would need to be at a desert island to get away from it. They can see exactly where I was on my vacation and how much I spent. There’s so much that you give away anyway. You can’t get paranoid. (Maria, 198)

The insecurity that the respondents report about giving information is discussed further as an information activity in section 7.8.

**Planning ahead or crossing your fingers?**

Precautions are taken in order to keep the problems, and the Internet Boogieman, at bay. Everybody knows that they should have a virus protection and update it frequently. They know they should have back-ups of material that they treasure. They know they should not disclose their credit card numbers, or excessive amounts of personal information on the Net. Still, few live up to any of these virtues, and none live up to all. Few efforts are made to secure the long-term healthiness of the computers and the data on them, other than the ‘best-computer’
solution, which is a response to the risks that the children’s’ lively and creative use of the computer poses. The ‘best-computer’ solution should not be dismissed though, it is effective in order to keep control and some respondents make a point of keeping valued data on both machines, should one crash. But most important is that many do not have anything on the computers that they would be very upset if they lost in a crash. At work they are careful to make backups but not at home. Kent has been building a database for many years and is one of the few to have data he treasures. It contains the details of the contacts he has had with other ham radio enthusiasts. When a contact is made information about the contact is noted and saved. This database has become very extensive over the years, and for Kent it is a valued piece of data. Does he take the time to back it up?

No, I don’t, very infrequently. I could. I’ve got an A-drive on which I can download 110 Meg’s on a disc. I could do it on that one. I used to be orderly and have a bat file to do it automatically. (Kent, 272, 273)

While he does not perform backups frequently, he still has backups available and would only lose the data that has been saved since the last time he backed up.

### 6.4 Summary & Findings

In this chapter I have presented empirical materiel that relates to the ICT-Setting part of the model. It consists of presentations of how the computers, and some other ICTs, were acquired and brought over the threshold to the homes of the respondents. I have discussed this in terms of their technology-biographies and experiences. I have also presented issues that arise around ICTs such as exclusion, ergonomics, constraints and management of operating the technologies. This mater­rial suggests a few findings.

# 6:1 The respondents tend to acquire computers and other infor­mation systems by opportunity.

Even when there is no apparent need for a computer they are sometimes acquired when an opportunity arises, such as borrowing equipment from the employer or participating an advantageous leasing-PC
offer. Opportunism as a strategy in acquiring computers in domestic settings is also noted by Davenport et al. (1997).

# 6:2 The respondents' use of the Internet, and of other information systems, brings about exclusion.

When a respondent is operating an information system, e.g. a computer, and is engaged in some information-activity, e.g. browsing, there is an *exclusion of use* in that they cannot perform other activities or take part in social activities at the same time (except for the social activity of sharing the use and the activity), neither can the information system be used for other purposes at the same time. There is also an *exclusion of attention* in that the respondent cannot direct their attention to something else (or someone else) at the same time. The different forms of exclusion can be either positive or negative, depending on the situation, and they can be taken advantage of consciously, e.g. to engage in monitoring of the morning paper, signaling to other members of the household: 'don’t talk to me, I’m reading!' and thereby get a moment of peace and quiet.

# 6:3 Ergonomics is an issue to the respondents when they acquire a computer, but not in the pursuit of having and operating it.

Those of the respondents that have stationary computers at home all reported making efforts to ensure the ergonomics surrounding the use of the computer initially. They do not, however, pursue ergonomics as a project by adapting the working environment between different users in the day-to-day use of it. In this sense, the ergonomics can be understood as part of the respondents’ change-project of bringing the computer home, but not of their pursue-project of having and operating it continually.

# 6:4 The respondents rarely read manuals.

Only as exceptions does it happen that a few respondents turn to manuals when problems arise. A tendency in organizational settings to disregard manuals as a source to find information is well established as a paradox of the active user (Carrol & Rosson 1987).⁶⁴ Findings here

⁶⁴ See also Mårdsjö 1992 For an overview of the use of manuals
suggests that the paradox prevails in everyday life settings as well. On the one hand people are not motivated to spend time learning a system, and on the other they are motivated to be productive with it, which makes for the paradox.

# 6:5 The respondents find contingencies with the computer difficult to handle, and as a consequence, they sometimes aren't able to handle these contingencies.

As the respondents acquire and operate their computers, many of them run into difficulties when they are installing new software and peripheral equipment. When the installation does not proceed in a desired and successful way, there are contingencies. Contingencies also arise when the operation of the computer does not proceed in a desired and successful way, as when ‘magical errors’ arise. In compliance with the ‘paradox of the active user’ (see # 6:4) the respondents want to perform, but do not want to spend time learning the system. Thus they apply what they already know to understand the problems instead of looking at the manual, often unsuccessfully. When the knowledge of the respondent on how to remedy the problem falls short, they turn to other resources, e.g. the appointed expert in the household or outside of it, help-desk, colleagues at work or friends of friends, until a remedy is found. These strategies, and the development of the ‘teen-guru’, have been noted by Kiesler et al. (1999). However, the solution to the respondents’ problems is not always optimal. While the optimal solution would be to have the problem disappear and have everything as desired, other results are known to happen. One such sub-optimal solution is to ‘shoot the patient’ by cleaning out the hard-drive and reinstalling the programs. It is a solution that is familiar to some and feared by others. Another sub-optimal solution is to give up and live with the problem. Often this is not possible unless they simply do not use the technology. Sometimes, however, the problem is a minor source of irritation but not critical to the overall operation of the information system.

# 6:6 The respondents expect contingencies.

Several respondents expect that contingencies of some sort are likely to arise. They know this from their own experience and from tales about such experiences from their social network and from reports in mass-
media. The problems that they expect are such that may arise from downloading and installing demos, games and things that are found on the Internet. In general, more or less all of the respondents also ‘know’ or fear that they are vulnerable once they are connected to the Internet. The particularities of these additional threats are ambiguous, as are their descriptions of it, but it’s there, ‘you’re out there’ and thus exposed to a kind of danger, most often framed as viruses in emails or hackers taking command of their computer.

# 6:7 The respondents make precautions against contingencies when this can be done as change-projects, but they do not pursue them.

To ensure the continued working of their computer and connection to the Internet, children are restricted in what they are allowed to do with the computer, e.g. not opening unfamiliar emails or downloading. All respondents with children in the household have made some arrangement to assign one computer, or partitioned hard drive, solely for the use of the children as a ‘trash computer,’ making sure that the ‘best computer’ is not used in destructive ways. Other precautions that most of the respondents make are to refrain from disclosing their credit card information, not to expose themselves and their bank accounts to hackers. Some of the respondents also value anti-virus software and the possibility to make backups, but none of them pursue those precautions by regularly updating them. As rules of operation are imposed on the respondents’ children or on themselves, and as actions are taken to adjust software and hardware for continued safe operation, it is done in bursts, much like change-projects directed to establish a new and safer order. Updating virus guards and performing backup’s require something of a safety pursue-project, and it appears they are not interested in such a project.

In several findings it appears that the strategies to manage ICTs depend on how they are a part of projects in everyday life. This will be discussed in more detail further ahead as the matter of projects reappears. With this the ICT-Settings are closed and a presentation ensues of what forms of activities the respondents engage in by way of their ICTs; their information-activities.
7 Information Activities

7.1 Introduction

In this chapter, empirical material relating to information-activities is presented. The presentations are centered on the eight forms of information-activities suggested in section 4.4. Other elements of that model, i.e. the four general classes of information behavior (seeking, gathering, communicating and giving information), information channels, and assessments of relevance, are discussed in relation to each information activity. The lengths of the text on each form of activity are quite varied. An activity that is discussed over many pages is not to be understood as more significant or important to the overall model than an activity that is covered in only a few pages. The differences are only relating to how present the activity is in the diaries and interviews of the respondents.

7.2 Search & Retrieve

The information searches that the respondents undertake are sometimes quite well defined and temporally limited activities. At other times they are more open-ended, exploratory and unclear. The instances of searching for information that are reported are primarily directed to the web and to private collections such as dictionaries and encyclopedias.

Features of information searching activities that stand out in the material concern traits of the information that is sought, and the information systems that are used. Roughly, the type of queries that induce searches concern information that can be called reference information and market information. Among the more obvious differences between these types of information is that reference information is fairly stable and unchanging and can be expected not to vary too much between different sources. Market information, on the other hand, is subject to change and relates in a unique way to a source of the information.

Information retrieval can be understood as both recovering information and making it newly available. The details of how information
is retrieved from a search on some information system, such as the web or a reference book, is not discussed in this study as it would be too particular to be of relevance. Here, it is satisfactory to discuss the result of such a search to the extent of whether it was successful or not. The only example of retrieving information from other types of private collections available in the diaries of the respondents is an instance where Karl, one evening, goes over 100 slides looking for a particular motif. He didn’t find it.

### 7.2.1 Reference information

For a translation of a word from English to Swedish (Kent searches for a translation of ‘moonshine’) a dictionary available on the bookshelf was used. Also, when Johan helps his daughter with her homework on Hinduism an encyclopedia from the bookshelf was used. At times the personal collection of printed information does not provide an answer and the respondents turn to the web:

Yesterday we had a debate about who was blind, Ray Charles or Stevie Wonder. We did not find it in the dictionary here at home so we turned to the Internet and wrote 'Ray Charles' and got 200 hits. The second chapter said he had been blind from the age of six, so we got information about that (Agneta, 14)

Agneta’s experience of searching for information with her son is a nice example of how the Internet is used at times where the personal reference-collections are not sufficient. Unfortunately this particular instance is also an example of how important it is to formulate the search, as they never learned that both were right, Ray Charles as well as Stevie Wonder are blind.

In general, the respondents express the good use they have of the web to find answers to questions, which their own collections do not provide, and to penetrate further when their sources are exhausted or not up to date. Agneta gives a few examples from the interviews, as she and her son needed information about vertebrates for his class assignment. Another was when she needed to look up information on the thyroid gland when her daughter was sick, and recipes for chocolate cake and for potato au gratin. Eva searched for a map of her neighborhood. Karl has two sets of reference books, one on each floor of his house to satisfy surges of curiosity, but he values the Internet for
offering more information where his reference books end (Karl, 28). Johan also values the web as a resource but notes some limitations:

> If I would have my daughter next to me and search for Hinduism, searching... all this way... You know that kids’ patience runs out quickly. They get bored before you get to the subject. (Johan, 225)

There are trade-offs between reference books and the web. Books are easier to access than the web, but good books are expensive. Agneta laments the high price of the national encyclopedia, even for second-hand copies.

Other searches made on the web for information that is not available on the bookshelf are for maps, medical information and information needed for school or work purposes. Without the web such information would be likely to require a trip to a library since much of it is found in special collections. But having access to the web is no guarantee that each and every question will be resolved satisfactory, such as when Maria needed information about a physician:

> My mother... needed another operation and it was going to be performed by a Danish physician that is working in a hospital here in Sweden. So I searched for what he had done, and suddenly I came across information that he had been fired for making a mistake with a patient. This was a crucial situation, only a few days before she was going to have the operation. I thought long and hard about who had written the information and if it was true. /.../ I never knew. I didn’t believe the information, there was no source, an article without a source. Some small journal somewhere. (Maria, 81, 83)

### 7.2.2 Market information

Aside from searches for reference information, a larger part of all searches are for what could be called market information. Market information concerns services and merchandise that are offered by businesses and institutions. It includes, for example, travel arrangements, car rentals, objects for sale and job opportunities. This kind of information may be hard to acquire without the web as it would require direct contact with other parties, sometimes in other countries.

As Agneta was planning to buy an apartment she searched for information about loan opportunities at a few banks:

> I did not have a clue about mortgages and interest rates on different types of loans. So once I got to the bank I already knew that I
wanted to pay the top-loan with my savings and only take the other loan. The web helped me with this. It was very good. There was a lot of stuff like that: 'What you should think of when you buy an apartment', so you click it and run along. 'Think about insurance,' stuff like that. /.../ At one spot you could make a cost estimate. /.../ Another way is to go in to banks and ask for information. One would surely get a pile of brochures that one would have to try and go through, like when you are making travel arrangements. /.../ Or one could ask at a coffee break (at work), I think I would have done that (without the web), just blurt out a question: 'If I need to take a loan at a bank, where should I do it?' (Agneta 199, 207. 211)

Other respondents made queries for a particular restaurant (Eva), Hotels (Eva), skiing conditions (Johan, Lotta), lodging (Karl), and car rentals (Lotta).

The respondents reported several instances of searching for information about things to buy. These instances happened to regard unusual buys (Johan: baseball glove for the son) and larger purchases (Lotta: Boat. Johan: Swimming pool.). The source of information that was used was brochures, catalogues and web sites. When the information was found in brochures and catalogues, these had been acquired by ordering them from a web site, such as when Johan and his family were in the market for a pool:

My wife was dreaming of a pool. I thought it was just a dream but okay, ... We ran a search (on the web) and the pool companies were all under one page, or book or so. From there we could go in and... it was really convenient, go in and check this company and then that company. Compare prices and all. ... We ordered a catalogue. We did not buy from any of those companies but it contributed in making us aware of prices. (Johan 321, 327)

Eventually Johan and his family bought a pool from a company listed in another catalogue. Johan claimed that without the Web they would never have gotten the special pool-catalogue and would not have been as well oriented about the pools that were available. But they would have gotten the other catalogue anyway as they regularly buy clothes from it, and maybe they would have bought the pool anyway.

7.2.3 Problem, Project, and Need

Other significant features are the relation between the searching activity and its purposes or underlying intentions. There seems to be a
difference between searches for reference information and for market information. Reference information may be a matter of bridging cognitive and emotional gaps, and there seems not to be any instance reported where searches for reference information reappear in several searches on the same topic. Market information, on the other hand, seems to provide orientation rather than bridge particular gaps, and one returns to the issues again and again at different times and with different information systems.

When looking for market information, the web is often a first instance of looking for information. Once oriented on the issues at hand, more information is found in brochures, catalogues and in communication face to face or over the phone. The difference may be found in how the information activity relates to the domain of problem: Reference information seems to be problem oriented with an immediate need to resolve a 'problem' that arises in a life activity. Market information, on the other hand, seems to be project oriented, as they are not obviously related to a particular problem domain, but seems to be a deferred need relating to a project as part of changing or maintaining a life style, a hobby, or a trip. This will be discussed further as the outcomes of information-activities are considered.

7.2.4 Searching strategies

A final group of significant features of information searching is found in a relation between the level of search-experience of the individual, the searching strategies they show to have and the hazy border between searching and browsing.

All respondents are aware of at least one search engine available on the web. For some respondents, the most rudimentary knowledge of using them means that if one search term does not produce a satisfactory result, i.e. the result is an overly long list of links or there are no hits at all, they change the search term for another. The majority of the respondents are at least somewhat familiar with features that many search engines support, e.g. using markers like quotation marks, plus and minus signs, etc. The most practiced searchers among the respondents are also familiar with advanced search functions. On another level of understanding, the practiced searchers emphasize the importance of understanding the uniqueness of search terms to avoid getting irrelevant results. The need for careful preparation to carry out searches successfully does not fit everybody equally well. Both Eva and
Karl refer to themselves as having type-A personalities, which means that although they are seasoned users of the web they have little forbearance with the peculiarities of the search engines, and lack the patience to deal with it.

Respondents with more experience in using the web to search for information seem to have learned to understand the quirks of information searching, and have a more developed sense of what can be expected to be found on the web. While some respondents express a satisfaction in that they most often find the information they search for on the web, others complain that they do not. It is not possible to make any objective comparison of how successful the respondents are as searchers. But it appears as though those who do not claim that they find what they are looking for have a somewhat different approach to searching, more like a browsing form of information seeking in that they do not use search-terms or search-engines to the same extent. Instead they start out with URL addresses that they have acquired from papers and email, or they have them as bookmarks from previous sessions of using the web.

As long as one finds something in response to a search that has been performed, whether it is as a straight search-and-find or a messier browsing approach, one may consider oneself successful. All respondents except the most confident searchers report that they believe other people to be more structured and methodical in their searches on the web. The most confident searchers express that they have an understanding of the web and of what can be expected of it.

The information searching activity is an activity that is used to approach information, and it should not be confused with how the information is experienced once it is approached. In order to approach desired information the respondents make use of the searching activity, and a searching form of browsing, which will be discussed next. In the real situations, a searching activity can hardly be considered in isolation from other activities, as the searching activity often leads to browsing and other forms of information-activities before the respondent turns to other activities.

### 7.3 Browsing

Earlier I have suggested that browsing can be defined as an act of moving in a limited environment with some level of perceived probability to encounter a resource of some value (sub-section 4.4.1). The
'environment' may be on any of several levels of detail. With a library as an example, the environment may be the library itself, a particular row of shelves; a particular stack of shelves, and it may also be a particular book or a particular page in a book. With the web as environment, the level of detail is perhaps more difficult to define but it is possible to discern browsing as being among web-sites, and web-pages, where web-pages are more particular and web-sites more general.

An essential feature of browsing is that it is both an information-seek ing behavior and an information-gathering behavior. As one is skimming a page of text, the boundary between seeking and gathering is hazy. But as long as one is not taking part of the content in an 'unfolding' manner, it is still a matter of approaching information, such as when one is reading single words and snippets of texts looking for some key word, topic or concept. The difference can be understood as when someone is 'browsing with a purpose' it can be seen as an information-seeking behavior. When the browsing is with an unclear purpose, as is the case when the respondents say they are 'looking around' at this and that, it is rather an information-gathering behavior.

7.3.1 Browsing With a Purpose: Information Seeking Behavior

When browsing as an information seeking behavior, and assessing what they encounter, the individual is not asking 'Do I want to take part in this?' but 'Is this it?' as they are looking for something for which they have immediate need. This kind of information seeking behavior is different from the searching activity in that a question is difficult to phrase and the intention is not to find answers but to look for orientation or an informative resource in which they have an interest. Which information seeking behavior should be called a searching activity and which should be called a browsing activity may be discussed, such as the case when Agneta was looking for information on loans for an apartment, quoted in section 7.2. In that case she had a clear need for information and she had an idea of where to search for it. It is a good example of how browsing becomes a part of an information seeking behavior.
7.3.2 Looking Around: Information Gathering Behavior

All of the respondents claim they never surf the web aimlessly and that they always use it for a purpose. But they all also show instances of wandering away from their original intentions to follow links in a discovering fashion. The extent to which they do this, and how they perceive this activity, is different among them. Typically, such a session of browsing the web begins with quite clear intentions to ‘look for’ something in particular, or to ‘look at’ a URL that they have received via mail from a friend or a newsletter, or a URL that they have torn out of a paper or made a note of. Browsing as an information gathering behavior ensues as they are lured onward by links that they find interesting when they are searching or browsing with a purpose:

Say I’m looking at the evening paper (on the web), then I can see something that seems interesting and I go on to look at those, let’s say strawberries. I had no intention to read about strawberries when I sat down at the computer. Or when I want to see the results of the horse races, I do that too, then it can be something about a horse or something. I very often get sidetracked when I’m surfing. (Agneta, 229)

Johan says he thinks his curiosity makes him drift away from his original intentions:

It gives some training too. Don’t ask me how. In part it makes a habit of being on the Net but even the information as such give something extra, so to speak, you discover things you did not know. You can search for information easier. If you go to a library you need to know what you’re looking for. Now you sit and click and find paths you did not look for. It’s training. /.../ This is interesting and, wow, did they have this, and the energy authority had a website, let’s go there and see what use I can have of that. It’s encouraging if you can get something useful out of it. (Johan 57, 81)

Agneta and Johan are both quite new to the web. While browsing provides training, as Johan said, it may also be overwhelming. Those among the respondents who have longer experience in using the web speak of how important it is to focus in order not to get caught in the "linking syndrome":

Sometimes you just have to stop because there is so much that I would want to read. When you get into this linking syndrome, one
leads to another and then you're on another page and you print it. That’s stressful because you’ll have to read it. (Kent 119)

All respondents pursue browsing in this gathering fashion. Those less familiar with the web do it as the quotes above describe, seemingly as a strategy to familiarize themselves with the web, a little like trying samples of the different fruits that are found in this new web-environment. Those more experienced also do it in a fashion that seems to be a way of furthering their understandings of the web but ignoring the already familiar, looking for new and strange fruits:

I can search without knowing what I want to do with the information. As an example, I can write the name of an old classmate, or put in some words just to see what turns up. If I write ‘sex and beach ball’, what bizarre combination is going to turn up? (Leo 131)

In none of these examples of browsing did the respondents show that they have any immediate need for the information, but often they encounter things that they perceive to be useful, interesting and fun.

Browsing as an information gathering behavior means that the individual is perpetually making sense of what they encounter and asking themselves something like 'Do I want to take part in this?' When the browsing environment is among TV-channels, they can reject a channel and move on, or accept it and stop the browsing. When the browsing environment is among web pages there is the third option of postponing the decision of accepting or rejecting by bookmarking or printing a page. Several respondents complain that they have too many bookmarks that they do not know how to organize, or that they never revisit them, and that they print things that they never read. These may be examples of how difficult it is to assess the information that is encountered.

From a purpose of finding useful information, browsing as an information-gathering behavior is not very efficient. The chance of encountering useful information is unpredictable and the energy required assessing the nature and the relevance of the information is considerable. Still, browsing, as an information gathering behavior is something they all do and that calls for an understanding of it as something worthwhile in its own right. As Johan said earlier, "...it's encouraging if you can get something useful out of it" (Johan, 81) and Leo refers to this as the "serendipity-effect":
I’ve had thoughts about only doing good and useful things, only reading useful books and listening to classical music, studying hard, working out and eating well, but it gets so miserably boring after a while. Some chaos actually contributes to life. This serendipity-effect of stumbling across new things, you cannot just look at the things of immediate relevance to me, if there’s never something new I’ll never get any new impulses. (Leo, 164)

Finding a balance between information gathering and doing "good and useful things" seems to be a problem for all of the respondents, regardless of how much experience they have with the web. It also looks as if they all have their own strategies for tackling it, and that it is a highly situated activity.

A more efficient means of gathering information is to settle for a few sources, which are made familiar, e.g. a morning paper or a special web site, to which one returns in a monitoring activity. Information monitoring is another information activity to which I now turn. As the monitoring activity is discussed it will become obvious how browsing is an activity that borders monitoring.

### 7.4 Monitoring

Monitoring is the third and last activity that is used as a means to approach information. It is not understood to be the same as the searching activity since it does not imply a question or a particular information deficit. Neither is it understood to be the same as the browsing activity since browsing is a familiarizing activity and monitoring always takes place within an already familiarized environment.

Essential features of Monitoring are that it takes place either as personal observations or in communication with other people. The former is discussed under the heading, Order of Monitoring, and the latter under, Social Monitoring. Monitoring is also said to be both intentional and incidental, which is discussed under the heading, Interest and Relevance.

#### 7.4.1 Order of Monitoring

The information monitoring activity has observable features that concern a *source*, which is an information system or a particular information service that one revisits more or less frequently. A *topic* concerns what it is that is being monitored, and *frequency* is a matter of how
often, and under which spatio-temporal circumstances the monitoring takes place (Wilson 1977:37). Source and frequency are discussed here, and topic is discussed in relation to Interest and Relevance.

The sources that are monitored are tightly bound to the routines of everyday life. The use of different sources over one workday is quite similar among the respondents. In order to wake up, a few of them use a radio as a form of subscription for music and news that is to be delivered to them everyday. The respondents do not claim to listen carefully to the radio but use it to create a familiar and pleasant wake-up call. It is not likely that the respondents would be able to recall at all what they heard on the radio in the morning, but they claim that while not listening actively, they will hear if something interesting is broadcast. This would perhaps qualify the radio-backdrop as a passive form of monitoring, and at least it begs the question of how different information systems afford an information monitoring activity. The radio, as opposed to a newspaper, can be turned on without requiring a listener’s attention. The paper and other print sources, on the other hand, are in a sense "off" when no one is looking at them and are only ‘on’ when given attention.

As the morning continues, the radio is sometimes on while the respondents are showering or dressing and preparing breakfast. But as the respondents take their breakfast they turn to monitor other sources. Everyone has a morning paper during weekdays and on Saturdays. Kent feels he’s got his mailbox too far down the road for a morning paper to be convenient, and sometimes he does not bother to pick it up for breakfast. Agneta sometimes has the TV on as a backdrop to reading the morning paper, but sometimes there is too little time even to read the paper. Maria listens to the news on the TV every morning while she reads the paper. She likes the noise and the set is conveniently close to where she eats her breakfast in her small apartment. When she used to live with her boyfriend, the TV was in another room and it was neither practical nor necessary to watch it in the morning. Sven wakes up to his wristwatch and turns on the radio on his kitchen table during breakfast as he is reading the paper:

In the morning you listen more absent-mindedly. If there’s something interesting you pay attention. (Sven, 298)

To have a paper to read in the morning is a strong habit to some of the respondents:
I need to read the paper alone. I can't take being disturbed when I do that. This morning (the children) came and wanted breakfast as I was reading. It's ok; it's not like I get mean and cranky. But I like to dive into the paper on my own, be alone by the table and not fight for the space. And there's to be no talking. The paper is really too large (for the table). And it's not very good, but that's beside the point. (Eva, 208)

And when there is nothing to read, Eva considers her breakfast ruined:

...But then I'll get a book to read. I do that on Sundays when there's no paper. Or take a comic book, this is a real ritual that's what it's about. When there's absolutely nothing else to read I'll turn to junk mail. (Eva, 220)

Having a paper to read in the morning is important to most of the other respondents as well, but to a varying extent. For Johan it is not very important as he rarely finds the time to read in the morning.

The format of information monitoring in the morning is quite similar between the respondents, as they turn to the radio, a morning paper and the TV. But it is only the information systems that are similar. What they say that they generally read in the paper, the must-reads and the never-reads are more individual. And what they read a specific morning is also very situational. I shall return to this in the section on Interest and Relevance.

On the way to work and on the way back home on workdays, other information systems are monitored occasionally. Monitoring activities that take place while at work are also relevant to non-work aspects of everyday life as it is not exclusively for professional purposes. Johan has a radio going most of the day. He tries to keep the volume down so as not to disturb his colleagues in the open-area office. Mainly he listens to channels with easy listening music and occasional news, although he finds the news to be of poor quality on those channels. Karl also listens to the radio on his way to work and during the day. He prefers a PBS channel (P1), and listens to the programs until after lunch. After that he pays less attention to the radio, but he is working through all this time. He say's he is not listening, but he can hear (Karl 130) and suddenly it passes a filter and he is listening (Karl, 128).

Other monitoring activities at work are reading papers and magazines that they only have access to there. Eva, Karl, Leo and Maria read Dagens Industri, a daily business paper, at work. On top of this, Leo
and Maria read Dagens IT, a daily ICT-business paper. Sven reads Privata Affärer, a monthly business magazine, at work.

Six of the ten respondents subscribe to specialized news that they get via email. Leo, Lotta and Maria, mainly monitor these at work while the others get them from their home computers.

Coming home from work, all respondents monitor the regular mail when there is some. Either they deal with it immediately and throw away the leftovers, or they do it later in the evening. Agneta stacks her mail for the weekend:

You look every day and when there’s a personal letter that has my name on it, and a stamp and all, I open it immediately. But if there’s a letter from the bank, a general label, advertisements, the union-paper, it’s put in the pile. Before the weekend is over the pile will be dealt with, either by putting away pending things, or throwing it away. It’s like you feel this every weekend: ‘Oh that’s right, I need to deal with the pile of this week’s mail too.’ (Agneta, 397)

Those of the respondents that are actively using email, turn on the computer to check their mailbox, a form of monitoring, every day. Kent describes:

It’s like it’s a little exciting to go in and see if anyone has written anything. You open the regular mail and then most of the times you go to check if there is any email. (Kent, 56)

During the course of the rest of the evening, other monitoring activities take place, again more individual and situational. Lotta reads Dagens Industri in the morning and in the evening she returns to another morning paper that she has not yet had the time to read. She does not find it necessary to watch the news on TV in the evening, but her husband does and he sometimes calls for her when there is something she should know about. Eva watches the news on text-TV in the early evening, browsing between the news on the different text-channels. She say’s she is a news freak, and when she finds the time to watch the newscast she will do that too. Sven has almost ceased to watch the news on TV. He is often on the Internet several times every night and he reads an evening paper on the web daily. One thing he does monitor on the TV is the sports news. Agneta watches the sports news too, and when she does it is together with her son, as it is he who wants to watch it. Otherwise she watches the news around nine, while she does other things as well. Kent watches the news only rarely. He prefers to
be outdoors and often he does not turn on the TV at all. Ester, Johan, Karl, and Leo, watch the evening news irregularly. Karl has the TV-set on the upper floor of his house, and he rarely goes up there before nine. He finds it to be a layered behavior. Downstairs he is socializing, playing and listening to music, and upstairs he is watching TV and sleeping (Karl 185, 186). Maria has the TV-going while she does other things:

> It’s a phenomenon of living alone. It used to be very rare that I had the TV on. My boyfriend used to, but I preferred to be in another room. Either I was watching, or I wasn’t. But it’s like I can have it on now, even if I do something else. /.../ And it’s an old lady’s phenomena: You live alone but you have a voice that’s there. (Maria, 135, 137)

The forms of monitoring that are reported above, are all examples of the respondents’ individual habits of monitoring. These monitoring-habits often have connections to both time and place. When, for instance, Agneta is away from home and is staying at a hotel overnight, she finds herself in a "vacuum" (Agneta, 171), as she does not get any news, although she could if she tried. And when Johan does not have the time to read the morning paper in the morning, he rarely returns to it in the evening (Johan, 132). It is as if there is a location and a time-slot for some monitoring, and when dislocated, or if the time-slot is missed, the monitoring does not take place. Other monitoring-habits are less time-bound but still connected to a place (e.g. monitoring magazines at work), or to another activity. A common such monitoring activity in the diaries, where one is engaging in it together with another activity, is to read an evening paper while in transit. Leo and Maria read it if they find one on the subway, Agneta reads it in a car or on a train, and Lotta reads it on airplanes.

Still other forms of monitoring have no apparent connection either to time, place or other activities. Some respondents say they read evening papers occasionally: on weekends (Agneta, Lotta), on vacation (Johan), and when there’s something special going on (Kent). When they have the time and feel like it, they turn to other sources to monitor: most respondents have weekly papers and magazines that they monitor at home. Maria has the radio on at odd times. Agneta, Ester, Eva, and Johan check their email irregularly, and some have mailing lists that they read at home (Ester, Johan, and Kent) or at work (Leo, Lotta, and Maria). And, finally, most respondents have special web-
sites, which they turn to monitor more or less frequently: Agneta and Karl sometimes look at the web-site of an evening paper. And Karl, Kent and Leo monitor their portfolio on the web.

All forms of monitoring activities frequently lead to other information-activities. The most obvious perhaps, is that monitoring leads to encounters with something that is found to be interesting. As that happens and an article is turned to and read, or news on the radio or TV is given attention, monitoring becomes an unfolding activity. When one is monitoring a web-site, an email news list, or checking the email, the monitoring activity often turns into a browsing activity such as described in the quote of Agneta (229) in section 7.3.

7.4.2 Social Monitoring

The communications aspect of monitoring is not a matter of monitoring other people, but of having other people perform monitoring activities at your service. The intention with which Wilson understood monitoring and its social aspect, was how the people we talk to are part of an information system (Wilson 1977:37). This is exemplified by how Lotta’s husband is watching the news on TV and calls for her when there is something on that he believes would interest her. This social monitoring takes place in everyday conversation, as far as information that is being exchanged can be said to be of relevance to the respondent, it concerns them to some respect (see also section 4.2 "Social Relevance"). While this monitoring may be difficult to observe, there are circumstances where it becomes visible. Social monitoring is found in instances where other people provide the respondent with hints and tips. The respondents frequently receive tips from friends, family and colleagues, and they also provide them with tips, monitoring on their behalf. In this sense, friends, family and colleagues, indeed, most of all social relations, function as agents that provide information that they figure the respondent will be interested in. The primary reason for this behavior is probably not to provide a monitoring service. More than likely the reason is to exchange information in everyday social interaction and maintain a social relationship. Nevertheless, the tip becomes a monitoring service, and the extent to which it takes place is significant to the overall importance of monitoring as an information-gathering behavior.

All of the respondents receive URL’s through email, and many of them practice sending links to other people as well. Not only from
mass-mail such as news and special lists but also to and from friends, colleagues and family.

Agneta and Eva receive tips although they do not mail privately very often. They get it both at work and at home. When Agneta sees a URL in an email, she says she looks at it without exception as she is a curious person. Agneta does not send addresses to others but Eva does. She exchanges “tip’s” as she says, frequently with a friend with who she has almost daily contact by email, and also sometimes with others.

“Every email I get contains links” Ester says. She gets them from lists with news, pointing to different sources and commercials. She also gets them from her daughter, and she in return sends links to her daughter with pointers to issues she believes her daughter to be interested in and to have use of as a computer consultant. She does not know whether her daughter appreciates her tips and has real utility from them as it is nothing they speak about.

Johan receives links from the mail service with computer related news that he sometimes looks at. When he does it is as a starting point for a surfing session.

Karl uses the opportunity to send links to potential customers as pointers to information he believes they may have use for. He uses it as a strategy to keep his name in the customers’ mind while not being intrusive, as they are not obliged to respond to him. He also exchanges links to URLs with a group of other consultants as a means of keeping in touch and to help each other. In the beginning these pointers often lead to pages with an entertaining content but such exchanges quickly faded to more businesslike contents. Karl also frequently exchanges links, most often in his work but also privately. “You exchange it, not as you trade baseball cards but as you exchange information.” (Karl, 79). He also looks at all the pointers he gets: “Because I don’t receive any tips from people that I don’t know, so I know why I receive a tip; They expect me to be interested in it, so I look at everything.” (Karl, 79). But as he notes, it is rare that a web site he received a tip on ever becomes a bookmarked page. He does see it as something of a trade, but does not see any reciprocity in it. While he will always give credit by mailing a ‘thanks’ in return to the one who tipped him, he is sure that this is very unusual and generally not expected, nor does he expect credit when he gives a tip. A tip is something one spreads out and does not trade for another tip or something else, he figures.

Kent receives links from email newsletters that he receives and occasionally from ham radio friends as well, pointing to stuff relating to
the hobby. He himself has a pointer to his own website in the signature of his email, so every mail he sends from home will contain that link. There is also an occasional complementarity between the ham radio, email and the web. It is awkward to send information about a web site or an email address over the ham radio as reception may be poor and the addresses are often complex. Instead, keywords on which it is possible to search the web to eventually reach the site or email address are used.

Lotta also receives such links and when she does she thinks 'Okay, so what do I do with this?' Often she lacks a good answer and ends up discarding the tip. She does, however, appreciate the tips that she gets from people she knows and has made her family know that she wants them to inform her on certain issues by sending her pointers. Outside of the family though, with friends, she "never" exchange links, "unless when it's something very specific." (Lotta, 150)

Maria has occasional exchanges of URLs with friends. In one specific instance she had a conversation with a friend about glazed tile. The friend had another friend who produced tiles and she gave Maria a link to a page where she later could see the tiles they had talked about. She also receives links from lists.

Sven cannot recall that he has had any particular use for the rare pointers to web sites he has gotten via email. He has received and sent links to the occasional joke-page but has no systematic exchange of useful sites with anybody.

Leo has made a point of exchanging links with friends. Aside from links to animation- or joke-pages, he says that:

I like information in general and I have a special interest in conspiracy theories and UFOs and such. Not that I believe in it in any way, but I am fascinated by the fact that people do believe in it. So I think it is really fun to get links to anything slightly bizarre.” (Leo, 46)

He gets these pointers from his closest friends and he also sends pointers to some pages with specific topics that he comes across to friends. He does this even if it is not one of his own primary interests, but he expects the recipient to appreciate it. He does not, however, always look at the pages himself:

No, I sort them by subject if I can see immediately what it's about. I have a friend that is into NLP, neuro-linguistic programming (a theory about how to infer what a person is thinking about from the
movements of their eyes) and I find it a bit interesting so he usually
sends links to pages about it, but I don’t always read everything. I
do sometimes look at them a little because it’s important to him and
he’s my best friend, so I check them out to be updated on the stuff
he’s into. (Leo, 56)

These pages are sometimes topics of conversations among Leo’s
friends but more often they speak of pages and topics that are in the
news. One such topic was the Scientology bible that was classified but
ended up on the web, and links to it were exchanged. Another such
topic was a young pedophile that was discussed on the television news
and it turned out that his name and photo was available on the web,
which led to the exchange of links to the page and conversational talk.

7.4.4 Interest and Relevance

Monitoring has been said to be both intentional and incidental. There
are reasons as to why the respondents monitor some sources but not
others, and in particular, papers and magazines but not others. The
intention is, however, not always a situated deliberation, but is often a
prearrangement of a subscription for sources to monitor. This looks to
be intimately connected to how the respondents make assessments of
relevance. In that sense, monitoring is structured by the individuals’
notion of what they find interesting, i.e. what they find to concern
them. Among the most pervasive monitoring activities was to go
through the mail, and check the electronic mailbox. Both these sources
can be said to be of high concern for them, since a letter or another
personal message is a communication that presupposes relevance (see
section 4.2). Other sources that are monitored, which are mainly mass
media sources, have less of a guarantee of relevance but some sources
are found to be more relevant than others. This is reflected in the re­
spondents’ different approaches to reading the morning paper.

Half of the respondents live in or around Bigtown (Ester, Karl, Leo,
Lotta, Maria), and the other half live in the smaller, but still quite large,
city of Middletown (Agneta, Eva, Johan, Kent, Sven). Those living in
Bigtown have morning papers that are local, but in effect available
nationally. Those living in the smaller city all have a local paper that is
distributed Monday through Saturday. On Sundays, Sven gets one of
the Bigtown papers.

To begin with the readings of the Bigtown papers, Karl always re­
ads the financial pages, as he sometimes can expect to find news there,
which has his own name listed. He also always read the funny-pages to get a laugh. Aside from those, he may turn to the international and domestic news. He feels that he cannot be bothered with the political pages, as it will end up in the domestic pages if it becomes important. Lotta reads a business paper in the morning and the morning paper later at night. In the morning she reads the first 12 pages of Dagens Industri “pretty thoroughly,” and the last page, which usually has an entertaining article. In the morning paper she reads page one, the culture pages, entertainment, politics and finance. She never reads the sports pages, and she never reads the stock-listings. Maria used to feel that she needed to read the whole paper, but now she is ”scanning” the headlines and goes back to whatever she found interesting. She finds such articles all over the paper, and she returns to the paper later in the evening if she did not have time to read it all.

Agneta always reads page one and the family-pages to stay abreast of things as she says. Except for those pages, she casually goes through the headlines, stopping on things that interest her, which could be news relating to her neighborhood or national politics. Eva reads the headlines on page one and then systematically flips through the paper. The only must-read is the weather, as one of her daughters always asks about the weather and she ’needs to know’. A never-read is the page with local news from the smaller communities outside the city. When Kent reads the morning paper it is issues with a local connection and things that he knows something about personally that catches his eye. Sven reads page one first, and then he starts going over the paper in reverse, starting from the last page where the sports section is. Sven feels he needs to read everything so he returns to the paper again in the evening if he did not have time to finish it in the morning.

Morning papers have been around for a long time, and the consumption of them is, in part, instrumental but also quite symbolic. Email and mailing lists have been around for a shorter time, and habits around their consumption have not had as long to form. This calls for more reflection by the respondent on what mailing lists to monitor. Some respondents subscribe to mailing lists and the email they receive, the lists represent a large part of the total quantity. The ones who do not receive mail from any lists are Agneta, Eva, Sven, and Karl. Agneta, Sven, and Karl are not aware of anything available that would interest them. To Eva there are clear reasons why she does not subscribe to any lists:
I have thought about it but I’m terrified that the computer would be drowned with 95 unread messages and all I would find would be useless information. Then I need to dive into it to look for the mail I wish to read. (Eva, 163).

She has, however, put one of her daughters on a Hot-Mail list with child-related information. Maria, Lotta, and Leo receive messages from lists that are in line with both their professions and their personal interests.

Ester receives email from a few lists to which she subscribes, Webjournal, Nyhet.nu, developer.com, and Datakvinnor. She reports mixed emotions about it in that most messages are of no relevance to her, but there is some helpful information that she takes an interest in, mainly regarding issues about Windows, which she is learning to understand and master.

Johan subscribes to Pagina, a list with news about computers and Internet related issues. Sometimes he finds useful addresses to web pages in it and he often uses them as an entrée into surfing-sessions. He relates an anecdote when he started out by checking his email, found an interesting link and started a surfing session, which made the whole family miss an activity they had planned to do. And again on another occasion:

We were working on a dinner with guests a few days ahead, and I decided to go in and see if there was any email. And I went off and surfed some page that I came to think about then and there that I wanted to see, and one thing led to another. My wife thought I wasn’t helping her with the all the preparations. I felt guilty about that. (Johan, 144)

Kent subscribes to Netscape News, some ham radio related list services and a news page on special software. He finds it difficult to find time to read everything and he tries to sift through the email as it arrives. Kent is also very interested in issues regarding personal development but has refrained from subscribing to any lists on it and prefers keeping to books on that issue.

Lotta gets financial news via email, and receives news on new books on e-commerce. She is considering an offer she got to gain access to a web-site with business news. She thinks she could manage the extra load of information if she takes half an hour to read it every other week.
Monitoring seems to be a convenient way of gathering information in everyday life. It is, however, not always easy to draw the line on what to monitor, with access to new sources of information. The most obvious alternative-cost to monitoring one additional source is time, but there also seems to be other costs, such as confusion, and stress. This is discussed further in chapter 8, Outcome & Change, but I would like to say something here in relation to relevance and interest.

Most of the respondents say at some point that they want to have lots of information. Even those who never said this, state the easy access to lots of information as one of the main reasons as to why they acquired a computer and an Internet connection in the first place. If their casual use of the word ‘information’ is understood as ‘something which informs’ them, it follows that when they speak of ‘information’ they implicitly mean something that is of relevance to them. What they are saying, in that case, is ‘I want to be aware of most everything that is of relevance to me.’ If that is really what they would like, they have a double problem: drawing the line between what is relevant and what is not, and locating those valued things of relevance. This double problem could also lead to a double stress: a push-stress from making all the necessary assessments of relevance, and a pull-stress from feeling obliged to monitor all sources where relevant stuff may appear. Several respondents occasionally feel stress from having a lot of work to do, and show signs of having a push-stress. Judging the relevance of things as they encounter it is a significant problem and knowing beforehand what is relevant is an even bigger problem. They also show signs of pull-stress as they report dissatisfactions in having too little information:

…I know the information I’m looking for is right in front of me but I can’t find it because I can’t discern what I need in the enormous mass, it makes me very stressed. (Karl, 101)

(I feel)... a dissatisfaction from there being a lot of information out there that I would like to have sorted. (Lotta, 78)

I feel no discomfort in getting too much information, but I do when I get too little information. (Leo, 160)

Monitoring becomes, in light of this, a satisficing activity. It is not possible to be aware of everything that would be of relevance. Neither is it possible to locate everything one knows to be of relevance. For
these reasons the respondents try and monitor as much as possible using the most to-the-point sources that they can find.

7.5 Unfolding

Intuitively, one would like to link specific *modes* of unfolding to specific information systems, such as ‘watching’ with ‘the television’, ‘reading’ with ‘the newspaper’, ‘listening’ with ‘radio’, perhaps ‘touching’ as a mode of unfolding the ‘Braille’ information system. But it would be a simplification that obscures important aspects of both the activities and the information systems. Television affords listening and reading, as well as watching. Newspapers carry pictures, graphs and other illustrations to be viewed as well as the text to be read. Even radio is not only about sound, but broadcasts short text messages with the talk and the music. Multimedia requires multimodal unfolding, and it is perhaps most evident in the case of the WWW where there is no clear dominance of one single mode of unfolding. So-called immersive environments with three-dimensional interfaces of video and audio, and even sensations through force-feedback technology, may be even clearer examples of how information systems are not dominated by single modes of unfolding. The master-model of any information system can be said to be real life, with face-to-face communication and ‘broadcasts’ such as lectures and church services, where all the five senses are made use of in all modes of unfolding.

The unfolding that takes place in relation to searching and browsing activities is not easy to discern and would be difficult to research, as the unfolding instances are quite short. Unfolding in relation to monitoring activities is more often possible to see but it still presents difficulties, which I shall shortly discuss. The clearest instances of unfolding activities are when the respondents have a prolonged involvement with a particular source, such as a book.

Unfolding needs to be seen in respect to how information systems are different. Among the bundle of services found in an information system such as a daily morning paper, are a weather forecast, family-news, TV-guide, sports, advertisements, entertainment, letters-to-the-editor, market information, opinions, and several specialized categories of news. A book, on the other hand, consists of one single service, or

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65 On a digital car radio, broadcasted text is viewable on the small display of the receiver.
perhaps of a few services that are closely relating to each other, e.g. the table of contents, footnotes, illustrations, indexes, and cover text. The television may also be seen as an information system providing a bundle of services. This fact makes it difficult to know exactly what a respondent has taken part of, i.e. unfolded, from a system that consists of several different services, such as a newspaper, televised news programs, and magazines. Often, they don’t know it themselves and it is certainly not possible to discern from interviews and diaries. For these reasons the unfolding that is discussed here is of information systems rather than information services.

The overall frequencies of interactions with different information systems as noted in the diaries, are distributed with about one-third of the instances being watching television, another third being reading the morning paper, and a final third being using the radio, the WWW, books, magazines, tapes, documents, VCRs, text-TV, evening papers and church services. This is only to list the different information systems that appear in the diaries. There are also other systems available on the market and in people’s everyday lives, although they do not appear in these particular peoples’ lives at the time of this research.

7.5.1 Television

Of all the instances of information unfolding activities, television is the information system that appears most frequently in the diaries. The information that is contained in the self-administered diaries is often scarce and sketchy. Many instances only indicate a generic “watching TV,” especially the longer viewing periods. When there are indications of a specific program it is often on the level of news, sports, a feature film or a political event. Such indications are consistent with what the respondents’ claim in interviews that they prefer to watch on the TV. But it only accounts for a smaller part of all TV watching, so what of the generic watching? The respondents’ focus on different aspects of watching TV and generic watching is valued for relaxation and serves as company while doing other things.

Television is the information system that is most frequently turned to in the diaries of Agneta, Ester, Johan, and Sven. Agneta watches almost everyday during the diary-week. A few times she has it on while taking breakfast and reading the paper. In the evenings she has the news on while working out, and she watches the sports news with her son. At one point she notes two hours of “lazy watching”. She says
she prefers to watch British detective series, but will watch whatever is on, as long as there is no excessive violence. News and sports are also of preference, especially soccer. Sven says he only has the TV on if he wants to see something in particular, except for when he is having his evening coffee. During the diary-week he watches TV when he is eating dinner and having coffee on weeknights and sometimes he reads the paper at the same time. Often, later at night, he watches sports, a sitcom, or something unspecified. Since Sven got to be a heavy user of the Internet he rarely watches news on TV, and he thinks he used to watch more on TV in general. Since Ester retired, she says she is watching too much television. Often she has it on while reading on the balcony, browsing on the web or reading emails. During the diary-week she watched at various times during the day, but not everyday. Most watching is generic watching while eating, while dozing off, or for listening in the background. Johan indicated approximately two hours of generic watching for six of seven days during the diary week. Still, he thinks he watched less than normal, since it was a week of beautiful summer evenings, and they had lots of work in the garden as they had just had a pool installed. Johan likes to emphasize the release he gets from watching TV:

When we get back inside, ok, perhaps we turn on the TV. I think it’s really... It’s very relaxing to watch TV because... someone else is doing something. I get to relax. It’s a little like you empty your mind somehow. (Johan, 187).

Johan regrets that there is a TV-set at his parent’s summerhouse. Since they got it, it tends to structure things in a way that he does not like (repeating a quote from earlier):

We have to eat by six, because at seven there’s this or that. “Oh, could we turn on the TV?” It used to be that we played games. These medias steal time from us. (Johan, 339)

For Karl and Maria, TV watching is second to reading the morning paper in frequencies of appearance in the diary. Karl watches only twice during the week. Once when visiting family, and once when he is “zapping” for a while before going to bed. Karl has the TV on the upper floor of his house by the bedroom. When he goes upstairs to watch it is usually right before going to bed. He dislikes American programs and prefers a special Danish soap, which he finds to have a
"nerve and a presence" lacking in many others. Except for that show, he does not really care what is on:

I take TV in doses, as a means to relax. It's completely uninteresting what's on. I can enter in the middle of a film, and leave in the middle. (Karl, 182)

It happens when he stops watching that he thinks to himself "what a waste," but he figures that even if he did not "get anything" from the viewing, at least he relaxed while watching (Karl, 184). Maria has the news on the TV in conjunction with having breakfast and reading the morning paper for most week-mornings during the diary-week. It also happens that she's got it on in the evening while having dinner, again, also while reading the paper. On a few other occasions she has the TV on while doing other things. One times she watched a specific program, a political event. She says that she doesn't like to follow TV series as she is used to missing parts of them. Sitcoms with finished episodes are more ok to her, but except for Seinfeld, there is no one specific show that she watches semi-regularly. Having the TV on while doing other things is to her an "old lady's phenomena." She likes the company of a voice in her small apartment. When she lived with her boyfriend, the watching was limited to a part of the apartment, but now she does not have that restriction.

To Eva, watching TV during the diary-week is less frequent than reading the morning paper and reading books. When she does watch, it is the news on text-TV to which she turns. Her daughters find this unusual:

"Are you watching text-TV again?" [the children ask]. But I'm watching the news. It's sick, I watch SVT\textsuperscript{66}, channel 4 and channel 5, I zap between them. And it's a bit fascinating to see how they write about the same things. Channel 5 isn't really... PBS is strict, it's organized and it's the big events. Channel 4 is like TT,\textsuperscript{67} the latest. And channel five can have really funny news, like a farmer in Wisconsin with a rooster that barks like a dog. Totally useless information. It's really fun. (Eva, 234)

Depending on what is on the TV at the same time, she may or may not mute the sound. Eva is the only one to note that she watched text-TV.

\textsuperscript{66} SVT, Sveriges Television, offers two public service broadcasted television channels.
\textsuperscript{67} TT, Tidningarnas Telegrambyrå, is a news-service for newspapers.
During the diary week she notes two occasions of “Lazy watching” of the TV:

Sometimes you don’t know what you’re doing in front of the TV. You’re taking it easy and don’t need to concentrate. You can see things you’re not interested in. What they’re talking about is uninteresting. It’s a way to relax. Then there are debates that can be really interesting, where you see body language and how they react. (Eva, 130)

…it’s nice to just sit there for half an hour, not doing anything. But an interesting debate you need to watch more actively. Science programs can have really interesting things that you... you need to be more active. ‘Friends’ I don’t need to remember what was said ten seconds ago, it doesn’t matter. (Eva, 144)

Eva never watches TV in the mornings. Partly because the TV is on the upper floor, partly because “TV in the morning doesn’t feel right.” (Eva, 210)

Neither Kent nor Lotta show any instances of watching TV during the diary week. Kent had projects outdoors, but he is also making an effort to consciously choose not to watch TV. It used to be that he spent a lot of time in front of the TV, but since he started working on his personal and emotional development days go by when he is not watching at all. He says he tries to follow the news and he still likes to see programs about nature, history and science, and an occasional film. He thinks that “the TV is a means to get information and relaxation, and moderate watching is not wrong” (Kent, 222). Lotta was working late several nights during the diary week, something she frequently does, and she watched no TV at all. She says she believes she has not seen any TV for two months, and that she does not even have time to see the late news. When she is working at home in the evenings her husband is watching the news and when there is something of interest he relates it to her.

I’m not really using TV that much as an information media. It’s more for relaxation. British detective series and such. /.../ Sometimes when we have cozy evenings together there’s a debate among the boys and the girls (on the program to see). I like British detective series, or a good game of Ice hockey. (Lotta, 181, 183)
7.5.2 Morning Paper

Reading the morning paper occurs almost as often as watching TV during the respondents' diary week. It is given much less time than TV, though, and much of the reading occurrences are the quite common habit of reading the paper at breakfast, which is done by most respondents, most mornings. These instances have already been discussed as a matter of monitoring activities, but there are instances of prolonged reading that is not merely a matter of scanning the headlines, but a reading of feature length articles, which is taken as unfolding activities.

Reading the morning paper is the one most frequent unfolding activity for Maria, Eva, and Karl. Aside from a brief reading over breakfast, much of a monitoring activity, Maria returns to the paper again at night during the diary week. Sometimes she reads together with dinner and TV, at other times it is only the paper in focus while she's on the couch or riding a bus, a train or on an airplane. She say's she used to read it more thoroughly than she does now, and that the paper is more interesting in the morning rather than later at night. Still, during the diary-week she returned to the paper several times, especially on the weekend when she read sections of the paper from earlier in the week, which she had not read yet. During the diary week, Karl monitors the paper at breakfast and one time his own name appears in an article, which makes him unfold it thoroughly and then not read anything further in the paper. This incident leads to careful listening to the news on radio and to conversations with his wife and the colleagues, which the article concerned. He also speaks with a reporter during the day, and the following day there is an article in the paper to follow up, which is also unfolded. Karl usually reads this section of the paper, as he knows his name might appear, while he mainly monitors the rest of the paper. During the week he did not return to the paper after breakfast. Eva too, only reads the paper in the morning and does not return to it later in the day. To her it is important to have a moment of peace and quiet in the morning and to have something to read at breakfast. She tends to monitor the paper and read bits and pieces, which she happens to find interesting. She says she likes the printed word, she finds it to be "cool" and she also reads a lot of books, which she will do at breakfast when there is no paper.

To Sven, and Agneta, the paper is second to television in frequency of appearance in their diaries. Agneta monitors the paper for breakfast
briefly, except for one weekend morning when she notes that she is "reading the whole paper." Sven says he wants to read "everything" in the paper, that he does not want to miss out on anything but be aware of events that are taking place (Sven, 34). Over the course of the diary week, Sven regularly reads the paper at breakfast, with the radio on, and then regularly returns to it for dinner and for coffee, and while listening to music on tapes. Sometimes for dinner he reads in front of the TV.

For other respondents, a morning paper plays a less significant role. Ester, and Johan, do not regularly read the paper. Once each they note in the diary instances of unfolding the paper. Kent, and Lotta, have not indicated in the diary any reading of a morning paper, but in interviews they say they regularly monitor one at some point during the day. Lotta claims she often reads the first 12 pages of a business paper quite thoroughly when she gets home.

7.5.3 Other information Systems

The unfolding of information systems others than the television and the morning paper make up the last third of all unfolding occasions noted in the diaries. Some of these systems are used in unfolding once or twice by a few respondents, and some systems are used several times by only one respondent. They appear here in order of frequency.

Radio

Eva, Johan, Kent, and Sven use a radio mainly in a monitoring capacity for waking up or listening to during breakfast. Johan and Karl also use the radio during the day. Radio is also used in unfolding capacities. Sven noted three instances of listening to specific programs on the radio. Maria, and Lotta, noted one such occasion each, and Karl and Johan listen regularly to some programs at work. While Johan has easy-listening music going on his radio at work, Karl listens to P1, a PBS channel that mostly consists of talk about contemporary issues of public interest. In spite of this apparent difference in information service, their unfolding activities seems not to be that different:

>There’s news on these channels too, and then you get attentive. “What’s up now?” you wonder. (Johan, 173)

I think I hear (the radio) but it doesn’t disturb me. It could be that I’m used to it from working for many years in open offices. So when I’m looking at the computer I shut it out, but I still hear it.
I'm not listening, but I hear. /.../ Suddenly, it passes the filter and
I'm listening. (Karl, 130, 128)

They both have the radio going in the background without being dis­turbed by it and "suddenly, it passes the filter" and they listen more attentively.

WWW

During their diary-weeks, Agneta, Eva, Kent, Maria, and Sven, noted instances of using the web. Whether they were seeking or gathering information is unclear, nor is it possible to discern anything about the unfolding that may have taken place, except for information about the topic and website that was visited. In interviews it has been noted by several of the respondents the discomfort they feel in unfolding directly from the computer. Often when they come across pieces of information that they find interesting and wish to unfold, they print it and read it from paper, or download it to the computer to read off line. Specific instances of printing to read later are given in interviews with Ester, Eva, Karl, and Lotta. Other respondents report doing it as well, although in more general terms.

Book

Not all respondents read books regularly. Both Sven and Lotta read on holidays. Johan used to do that too, but nowadays he only reads for his children. Kent, Karl, and Ester, read books on and off, but have no such instances noted in their diaries. Agneta shows one instance of reading a book, right before going to sleep at night. Maria also reads before sleep on a few occasions, and Eva does so regularly over the diary week. Eva also read during the day on the weekend.

Reading books is something all respondents have feelings about. Even as they do not practice it a lot, it is considered a valuable pursuit. Reading is considered to be 'good' but also time consuming. Johan, Leo, and Lotta used to read more then they do now, before they met their partners or had children. Leo also thinks his late night use of the computer might have taken over some of his reading and he feels he ought to set aside more time to read books. Maria prefers to read re­view articles of the management books she ought to take part in. But she wants to read more of other books, classic literature, , and she is planning to do so this coming summer:

Last summer I read 'Catch 22' and I thought, "So this is what it was like?" There's a lot in these classics, Homer and what not,
which you refer to. Like the catch-22, what is that really, what’s it about? (Lotta, 241)

For the coming summer she has her mother picking out a few classical pieces for her to read.

I think it’s important to get these other dimensions, what things do we carry with us, and are others carrying with them, about... par­lance and... It’s a great risk that you get too narrow. (Lotta, 241)

Sven reads books on sports and he collects a series of volumes for each year. He recently completed the series with an edition listing soccer events of 1957-1958. Kent also reads books on a special topic. Since he became interested in issues of personal and emotional development he has started to read books about it. Before that he never read books.

Reading books is an important part of Eva’s life. She reads practically everyday, and she also read to her daughters. She gets the books from the library, but she also likes to own books and she enjoys getting a bargain on a used book. She says she finds the printed word to be “cool” (Eva, 27). Even when she does not particularly enjoy a book that she has started to read, she is determined to finish it:

I’m reading one now...It’s really bad. And it takes time. But I do it 4-5 pages at a time and then I read another book. But I’m going to get through it anyway. I’ve got my mind set on it. /.../ I can always learn something. Another understanding of people or... I’ve never seen a book that I didn’t learn anything from. Even if this book is really...bad, it can give me another perspective on things. That it’s a pain to read is another thing. (Eva, 174, 176)

She finds it difficult to define what’s bad in a book, but settles for how such books fail to make her “paint this fantasy-world that I’m in when I’m reading. What the people look like, how they sound, act, stuff like that.” (Eva, 178). But even if a book is bad she eventually finishes it and she contends that “When I’ve read a book, I’ve read it” (Eva, 176), and she never rereads a book that she has read before. It is a little like the book is something to be conquered, which can only be done by reading the whole book, and it can only be done once: “Then I know what it’s about, there’s no reason to read it again.” (Eva, 180). Her father, she says, re-reads a certain book once every year. She finds that to be strange.

Magazines
Most respondents report in interviews of having regular access to several weekly or monthly magazines. During this particular diary week there were, however, only a few that reported actually reading any. Ester brought some magazines with her to the country house and read them on four occasions. Back home, she read once during the early evening one night. Karl too, frequently reads several different magazines. As his cohabitant is in the writing business she provides Karl with access to many various kinds of magazines. Karl takes times to look through these magazines during the diary week, much in a monitoring capacity while having a drink and waiting for dinner guests to arrive. At another time he read such magazines while waiting for a flight. Agneta notes one occasion on a train when she read a magazine from the train company. At another time during the diary week she read in a magazine that she recently started to subscribe to. Sven regularly reads a magazine that is circulated at work. During the diary week he brought it home and spent only a few minutes reading it. None of the other respondents noted in the diaries any reading of magazines during the week.

Cassette tapes

While there is only one respondent, Sven, who listened to cassette tapes during the diary week, and even mentioned it in interviews at all, it makes for a good case of unfolding. Sven records music from the radio on tapes, and listens to them later. Once during the week he listened exclusively to tapes for about half an hour, and at other occasions he listened while reading the morning paper.

Mail & Documents

Mail and documents make up quite a large category of sources with which the respondents interact based on what they report in interviews as well as in frequency during the diary week. However, it is not possible to discern to what extent these are unfolding activities and monitoring activities. ‘Documents’ refer to work-related stuff that the respondents were reading of at home. During the diary week Lotta, Maria, and Sven did this. These particular instances appear to be more of unfolding activities rather than monitoring, since they were documents that had to be “read”. Generally they worked with the documents quite late at night and on Sundays. As far as mail is concerned, it has been discussed as a monitoring activity, which mainly represents the administration of the mail, the sifting and sorting of what to throw away and what to deal with in other ways. During the diary week some respondents did, however, report coming back to the mail to read it,
which may constitute an unfolding activity. Sven reported quite careful reading of the mail every weeknight. In interviews too, Sven has reported reading all mail, even the commercials. Agneta noted two instances during the weekend of returning to a full week’s accumulation of mail, which she then read through. The part of the week when Ester was at home she noted that she read the mail in the afternoon.

**VCR**

While the VCR is dependent on a television set for its function, it should be said to be an information system in itself as it consists of a special technology, which is why it appears here as a category. One may argue that Text-TV also should be such a separate category of information system, but I would argue that text-TV is more like a separate information service of the television information system. The VCR, with its separate technology, functions as a separate information system. During the diary week, Ester, Johan, and Karl used the VCR. Ester used it to record programs on the TV that, for some reason, she can’t see when it’s broadcasted. She watched once very early in the morning as she could not sleep, and at another time in the middle of the day, while having lunch. In interviews, she reports using the VCR quite often. Johan says that they used to use the VCR often to record things, but rarely do it nowadays. Once he used it during the diary week. On a Saturday night they rented a James Bond movie that they watched together with the children. After the film the kids went to bed and Johan and his wife turned to watch other things on the TV. When Karl visited family out of town they sat and talked in front of the TV and later at night they put on a family video and watched it together.

**Evening papers**

The number of instances of reading evening papers during the diary weeks of the respondents is very much consistent with how they reported reading them in interviews. Most said they read evening papers on holidays, sometimes on weekends and when something exceptional had happened. Twice during the diary weeks it happened that evening papers were read, once Agneta bought a paper to read on a train ride that took an hour and a half, and once Karl read a free copy on an airplane. Karl’s diary note of reading it also consisted of a comment concerning the atrocity of the murder of two policemen several days ago that was reported in the paper.

**Church services**

The final information system that appeared in the diaries is church service. It appeared once as Agneta attended the confirmation service
of a friend of her son's. A second appearance was when Sven attended the funeral of a family member.

7.6 Exchanging

The presentation of the material is centered here on the social networks with which the respondents had exchanges during their diary weeks. They are introduced person by person under the heading of "exchange practices." Following that is a section on the preferences and thoughts the respondents have on "exchanges on email" in particular. A summary is first introduced in two tables below.
Table 7:1. Exchange activities by respondent. The social categories are made up of differences in frequencies of exchanges and use of information systems. In studies of social networks there often are two value-categories of exchanges, by informal and formal relationships. The informal relationship is noted as confidant, intimate and active. The formal as Kin (immediate or extended) and Non-kin (friends, coworkers and neighbors). Here I draw on the formal relation and the physical distance. Intimates are all members of the household, with the addition of partners that are not actually living in the household. Vicinities are members of family and friends that are physically close to the respondent, i.e. at least living in the same city. Remotes are physically distant members of family and friends. Acquaintances denote people that are not considered friends but relate formally to the respondent by being colleagues, members of a shared community, e.g. neighbors or such that are sharing membership in a network of hobbyists. Functions are People that we have only a temporary formal relation with, by briefly sharing the same context in a buyer/seller relation, or as users/providers of services.

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<td>35</td>
<td>29</td>
<td>255</td>
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</table>
Table 7:2. Exchange activities by information system. The table provides more information: The numbers in the cells, such as the series "4,11,1,-14,-7,-11" represent the breakdown of the sum "48". The sum is the frequencies of face to face exchanges with intimates. The breakdown represents each respondents frequencies, by the order in which they appear in the preceding table. A "-" equals zero. Thus, this cell reads out: Eva = 4, Agneta = 11, Kent = 1, Ester = zero, Johan = 14, Maria = zero, Lotta = 7, Sven = zero, Karl = 11, instances of face-to-face exchanges with Intimates.

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</table>
7.6.1 Exchange practices

Agneta

Over the course of Agneta’s diary week she notes 29 exchange activities. Of those, 12 are with her adolescent son who is still living at home. Agneta has meals with him and they watch TV together, go shopping together and visit a friend of her son that is taking his confirmation. All exchanges between Agneta and her son are face to face except for one occasion when she is out of town and calls in on the telephone. The second most frequent series of exchanges is with Agneta’s daughter who lives in another city. They speak on the phone almost every night, and once, when she is visiting town, they get together. The rest of Agneta’s exchanges are centered around the projects that are going on in her life at the time of the diary week. On five occasions she has exchanges with different people concerning her project to buy an apartment. One time she calls her brother to tell him about the good news that she is moving, and on other occasions she signs the lease for the new apartment, terminates the contract she’s got, speaks on the phone with a prospect for her old apartment, and speaks with the seller about a "strange paper" that the seller got in the mail. All this is done by telephone and through meetings. A second project involved only physical meetings, and was also of a physical nature. Agneta had earlier made an appointment to have a mole removed during this week. She made it to the appointment and successfully had the mole removed, but, unfortunately, after only one day the scar ruptures and she is forced to make a long and grueling visit to the emergency room to mend the wound.

In the household of Agneta and her son, emailing does not have a very strong position. Agneta does not use it "that much," as she hardly has anyone to mail to. During her diary week she receives or sends no email at home at all, and there are no notes of private email at work, but she believes that she normally receives about one message every week: “In private I scarcely use email, I use the phone. Talk to people.” (Agneta, 68). Her private mailing is mainly sending answers to contests held on the WWW. She send answers to one contest about “Sports of the century” almost daily, she says. The private email she receives is mainly at work and contains short notes, tips and hints from friends at work. The tips that she gets she usually looks at, as she is "a
curious person” she says. Occasionally Agneta brings work home to do on the computer. When she does, she never sends files via email but downloads it on several disks. She thinks it makes it more tangible that she is actually “bringing home work.” Agneta’s son uses email frequently to communicate with friends at school and people he has met in chat-rooms. The ones he has met in chat-rooms he only knows by email. He has no other type of exchange with them, besides chat and email. Other people are ones that he has met on an almost daily basis and he also speaks with them on the phone. He is into a few sports, but in none of them is email appropriated as a means for organizing activities, the reason being that not everybody has access to email.

Agneta speaks with her daughter several times a week on the phone. She treasures this contact as they had less quality communication when her daughter was a teenager. When they have not spoken for several days, Agneta says she get anxious. When her daughter was abroad for some time, they could only speak about once a week on the phone. She found this disturbing but had to comply with the realities of telephone bills. As her daughter had no access to a computer where she was living they could not email either, ”That would have been perfect!” Agneta says (Agneta, 179).

**Ester**

Ester noted 17 exchanges during her diary week, most of which were not with people she knows, but with public functions and institutions. There were three recurrent partners in the exchange. At this time she had a problem with her Internet Service Provider (ISP), which made for one phone call, and later the same day, one email. She also needed to get her car to a garage, which besides a meeting at the garage accounted for a telephone call the day after for a cost estimate. Ester’s engagement on the board of a gardeners’ association accounted for one phone call and one email. Except for these three series of exchanges, Ester had no recurrent ones. The remainder was with individual friends that she spoke with on the phone during evenings. She sent a fax from her computer to Spain relating to her selling a property there. Once she met a doctor for a physical examination, and once she got together with a group of former colleagues in an alumni network.

Ester feels she is generally active as a user of email although there are only a few people with which she communicates with using email as well as other types of communication. She mainly communicates
with her daughter, who lives in another city and leads an active life and has a career. They communicate about once a month, Ester receives quite short letters and sends longer ones. She expects her daughter to receive something like 50 emails a day and to be leading much of her social life by email, which she understands to be the reason why the letters from her are short. In addition to Ester’s daughter there are two others, a friend who is retired, as Ester is, and a politician with whom Ester has had an ongoing email relationship for a shorter time. Ester wanted to speak with a local authority about a certain matter. She called the community council and got hold of a community politician. They spoke and later kept contact via email. Ester appreciates the opportunity to mail her but she does not expect this relationship to last, as the topic of their exchanges is impersonal and will be terminated at some point. Ester mails her friend that she met at senior-net about once a week depending on how quick her friend answers. In addition to these exchanges Ester also receives mail from a few mailing lists. During her diary week, she noted 79 received messages, and 2 sent. She checked her mail on four occasions, each time around midnight and shortly before going to bed. One of the messages she sent was regarding her ISP, the other was to the gardening association. Ester enjoys writing on the computer. If she couldn’t communicate with email, she would rather fax than send a regular letter by mail. Regardless of which, it would not be handwritten, as she say she writes everything using the computer. Once Ester took a course in computers and she got hooked up in real time with a professor in USA. One of them had a camera, she does not remember which one, and they spoke with each other for a while. She said that she used to toy with the idea of moving away, far away, and this would be one way to keep track of her children and grandchildren.

**Eva**

The week that Eva is logging on a diary is the final week at work before the summer vacation. The office is quite empty and business is slow. Her two daughters have begun their vacation from school. While Eva is working, the girls are either at home or out on excursions with their friends. Toward the end of the week, Eva attends a party with some colleagues to celebrate the upcoming vacation, and her daughters are spending the night over at friends. These different activities call for a lot of organization and the major part of Eva’s exchanges over the
Information Activities

Eva's activities during the diary week are with her daughters and with grownups concerning her daughters. The different duties and excursions mean that they spend a lot of time apart, and Eva uses the telephone and cell phone for a morning chat to discuss the girls' breakfast, ice-cream issues, and beach excursions. Of the 18 occasions where the girls are mentioned in the diary, 4 are notes of them being together with Eva. They speak 12 times on the phone and then two additional times on a cell phone. After the girls' sleep-over, Eva makes three anxiety-ridden calls for friends of the girls to track down one of them that decided to change her plans without Eva knowing. This series of exchanges with or about the girls accounts for nearly half of the total number of exchanges. A second series of exchanges is with a friend and coworker that she mainly has face-to-face exchanges with. Everyday at work over lunch they get together, sometimes with a second coworker, and for the party later in the week they go there together. Once during the weekend they also get together on an excursion for a few hours. They also speak on the phone, once just before meeting for the trip to the party, and once before the weekend excursion. Eva and her friend and coworker also exchange emails at work, and in the diary Eva makes a note of its personal character. Twice, Eva responds immediately to emails from the friend. The remainder of Eva's exchanges are exchanges with five individuals, twice each. Of these exchanges, three are centered on specific topics such as meeting for lunch and dinner, one exchange reveals two different topics. She reports single exchange instances with another five individuals and none of those reveal the topic of the exchange.

Eva has got a few friends with which she has frequent contact by email. A former colleague who lives in her neighborhood she finds both professionally and socially valuable as a contact: "We changed jobs but are still friends. So we tip each other about this and that. Mailing about three, four times a day, besides speaking on the phone." (Eva, 69). Another friend is still a colleague and they mail about the same amount as her other friend. This is a woman, who is also Eva's mentor on computer issues and she gets lots of help from her. With her, it is short messages such as 'Let's have a coffee' or longer stories about what she and her daughters did last weekend. The third on Eva's list is her best friend, who now lives in another city. She mainly speaks with her on the phone—which they also did during the diary week—and when Eva cannot get hold of her she sends her an email. Then there are Eva's daughters, of which the older one is active on the
Internet and have managed to get 4-5 different email addresses from which she gets mail both in school and at home. Eva emails her at different addresses as she knows she enjoys receiving mail on them: ‘You’ve got to mail me on this address as well’ her daughter begs of her. On top of these persons with whom Eva has got more or less frequent contact via email, are Eva’s parents and siblings with which she does email but on less of a regular basis. She also has friend’s abroad, with which she has sporadic contact through email, and sometimes they exchange pictures of the children, something she enjoys doing. During her diary week, Eva noted three sent messages and four received, all at work in time slots where she also managed professional email. At home she had no activity with email this period, and she figures this to be quite normal, as she does not use it that much at home.

Eva feels that having to wait several weeks to receive feedback to a letter she sent to friends abroad via regular mail is annoying, although it makes it all the more fun when the letter finally arrives. Her daughter has pen pals with who she emails and Eva has noticed that it has made their letter writing cheaper. She also notes how a letter is more personal and ‘present’ than email, but still not as much as the telephone. With Eva’s best friend, she prefers to speak on the telephone, as the telephone is a better media for intimate conversation, something that Eva finds important. She says that:

It’s better to hear the voice, to speak with a person. It’s another type of relationship, it’s got more nuance, try and show nuance with email. If I write ‘I’m really happy!’ it won’t really get through. What you can hear for yourself in two or three sentences you’ll need half a paper to write down to get the nuances. (Eva, 73)

Getting through as well as understanding correctly is important to Eva. She would generally prefer to speak face to face or on the telephone but, as she says, it is not possible to exchange all the email she sends and receives with a telephone conversation, she would never have time for it. She say’s that all that writing and talking is a little exposing and that she would want to see the reaction she will get, and that she “reads people” (Eva, 81).

To her, E-mail is a complement to the telephone and allows her to communicate without being intrusive. She appreciates the use of lag-time at work, a minute here and a minute there, to compose email for someone. She finds this to be a valuable way of using otherwise un-
productive moments to maintain her social life. Such moments can be during a boring or otherwise non-committing telephone conversation. She also finds email to be usable when she does not want to call someone on the telephone. Thus she feels she can keep in touch with her parents without having to listen to their predictable comments about her working too much. Eva’s use of email works as a means for efficient communication and she emphasizes the need for producing clear and unambiguous subject headlines for the efficiency to work.

Eva has an interesting way of making distinctions in her exchanges in interviews as well as in the notes in her diary. She often separates an exchange as either ‘talk’ or ‘small talk’. What is interesting is that she also does that for email exchanges and for her own television viewing. The distinction she makes seems to be in her own level of engagement, or of different ‘thicknesses’ of the exchange.

**Johan**

The exchange activities that Johan notes in his diary are exclusively relating to the members of his household, e.g. his wife, and their daughter and son. These exchanges are all made in the face to face mode. There are no telephone calls to or from the household noted, nor are there any emails during this week. The exchanges they have within the household can be seen as several intermeshed topics being treated in an ongoing intimate social relation between all four in the family. The only distinctions that can be made out of these are how some exchanges are centered on ongoing problems and projects of their everyday life such as instances of waking the children up and preparing them for school, watching TV together in the evening and a video on the weekend, playing a computer game with the son, helping the daughter with her homework, taking meals together, and putting the kids to bed. An example of a project is to organize a cage for the daughter’s bunny rabbit. Twice, there are references to meetings with people from outside of the household as Johan accompanies his son for a game of golf and a picnic with his son’s school class, and once as he joins his daughter for a picnic with her school class.

Johan’s use of email is generally irregular, he thinks. He sometimes uses it to mail things between home and work but it is not very usual. Over the course of the diary week, he registered no email at home, and made no notes of private email at work either. There are very few people in the social sphere of his and his household, which have access
to email so he often opens his email only to find it empty. Recently, they had made preliminary plans to meet with friends over a national holiday. He eventually searched the email to see whether they had sent anything, which they had not. The email he receives is mainly messages from a mailing list that he has subscribed to and sometimes he gets greetings for holidays from acquaintances. Johan's wife had a few exchanges with a close friend but it did not last very long. Johan wishes that more people had access to email in order to keep in contact with them and have the ‘easy access’ it represents. Johan borrowed a digital camera when his wife had a birthday to take pictures he could send to friends. Johan’s daughter has a pen pal that she exchanges email with as well. Once she emailed pictures of her bunny rabbit, but in doing so they remind each other not to stop writing regular letters. Email does not allow them to draw flowers and use colors in their letters. Johan does not write letters himself, but when he buys something on the Internet he receives a letter with the invoice, in addition to the package with the thing he bought.

**Kent**

In his diary, Kent indicates eight instances of exchange. There is a small series of exchanges with a colleague. Twice for lunch, one of which is with another colleague as well, and once as Kent picks him up for a trip to a party at yet another colleague’s house. Another series of exchanges is with his girlfriend as he calls to wish her good morning once and later in the week as they get together for a party at a friend’s place. Once during this week Kent has an exchange over the ham radio with “someone in Wisconsin” (Kent, Diary). In conjunction with the ham radio interest, he hosts a meeting in his yard for other ham radio enthusiasts. A final instance of exchange is with a boy living next door who helps Kent to mow the lawn.

Kent says there are very few people with whom he has regular contact by email, and his primary use of it is for getting information from mailing-lists, and besides that he uses it to request information. Kent’s girlfriend lives in another city and they email regularly. There is also a good friend with whom he has more infrequent contact on email, and different people sharing his ham radio interest, which he has short bursts of contact with. In conjunction with his ham radio hobby he subscribes to a few mailing-lists from which he gets mail, so the mailbox is rarely empty although he checks it every day when he gets home.
from work and sometimes again right before going to bed. During the study week he reported only one incoming email, which was a letter from a friend traveling in the USA. Kent was in the process of selling equipment for his ham radio and when he found a potential buyer he took a picture and sent it in an email. Kent finds regular mail to be expensive and cumbersome. Unless it is a matter of documents that need written signatures, he says he would never send postal mail. Kent meets and speaks on the telephone with most of the few people he exchanges email with, except of course email from lists. Nevertheless, he thinks that he sometimes takes an easy way out by sending an email instead of "Calling them and getting the more direct contact" (Kent, 40).

Karl

Karl’s diary indicates 42 instances of exchange. Of those, 16 are a series of exchanges with his cohabitant as they see each other and speak on the phone. All these exchanges take place face to face, over the phone or cell-phone. Another extensive series of exchange activities centers on Karl’s mother who has taken ill and has recently been hospitalized. This takes place in another city and Karl uses the telephone to stay in touch with the hospital, his relatives, and with his cohabitant as he take a flight to visit his mother at the hospital. This series accounts for 13 exchanges, of which only two are actually with his mother. The other exchanges are with the hospital, with his brother and his family that he stays with when he visits his mother, and with a parking attendant at the hospital with which he has an argument. A third series of exchanges stems from Karl having his birthday at the end of the diary week. In relation to this he receives three emails to congratulate him, his younger son visits him and a larger family get-together takes place. A final, brief series of exchanges is with his older son. One time they speak on the phone about a medical examination the son has taken, and once again on the phone they speak about the son flying off to attend a game of soccer over Karl’s birthday. In addition to these series of exchanges there are six occurrences of single exchanges, one via email, and the rest were face to face interactions, at a dinner party, a reception and two meetings, respectively.

Karl exhibits a lively use of email as he uses it to keep in contact with the five grown up children he and his cohabitant have between them. The frequency of their emailing at home depends on whether
there is something going on at the moment, if the children are close by or far away in another country. Karl finds email to be a utility through its "pure contact, the question-answer quality. Our daughter was in Nairobi when a bomb exploded there, and within seconds we knew that she was okay." (Karl, 13). Karl receives email throughout the day at work and in evenings when he has brought the laptop home. The week of the diary he connected to the Internet 18 times at work, and at five of those he had private mailings, but he says that he did not make notes of every time he connected to the Internet. Like Eva, Karl wishes people would give more time and effort in composing the subject-line of email to make it easier on the receiver. When he is traveling he downloads email over his cell-phone. In addition to his family, he also exchanges personal mail with a few colleagues several times a week, and he has several foreign friends that he emails a few times every month: "As soon as N.N. got email, we resumed a contact that was practically gone. Now we have regular contact and he is coming here for Easter." (Karl, 68). The diary week, Karl received an email from this friend and he made a note of how much he appreciated it. In addition to these, there are people that come and go with which he has a communication that 'flickers and die' as he say. The private mailing he had during the study week were of him sending regards for a friend's birthday, a confirmation for an order on flowers to be sent to a relative, a letter from his good friend in a European country, and three emails congratulating him on his birthday. Karl is self-employed and considers his evenings and weekends to be protected from work. In order to maintain this demarcation he does not always check his email from home. However, if he strives to shield his privacy from work, he is more generous in letting his private life spill over to his professional life and uses email as one means of maintaining his social contacts during the days. In regard to the use of email in relation to regular mail as forms of communication, Karl says: "As a child I had pen-pals and it was a great joy to open these letters. These are gone now but, on the other, hand it there are now more letters." (Karl, 13). He still writes letters to his mother, and he often seeks out a quiet corner when he’s away at a conference or something to write 8-10 post cards.

Karl has the same strategy as Eva does in using email to maintain contacts that he does not feel he has the energy to keep over the telephone, but fears that he actually uses email to avoid social contact that he should take for his own sake and for the sake of his children, which he feels are those subjected to his behavior. Like Eva, Karl feels
that email is a complement to the telephone: "I keep a casual contact with people I would never just call and ask ‘How are you doing?’ I just wouldn’t. /.../ You never speak only five words on the telephone” (Karl, 13). With email he can, and does, and he says that his social contacts have improved through it. Karl says email has lowered his threshold for initiating a contact. If he were to lose access to his email, he would also lose several contacts, as he would not substitute them for letters or telephone calls. As he gets to this conclusion he gets increasingly frustrated: "My contacts would be fewer. Shit! At the end of the day we’re people, and we live by our social relations” (Karl 72). But he says email is too limited to make for true communication. ‘Real’ communication, he feels, is constituted by a ‘meeting,’ and that cannot take place with email. Whenever he is traveling, he and his cohabitant telephone each other quite often, and although they could email each other, since he checks his email with the laptop and a cell phone, they would never substitute the telephone conversations for that. Finally, when using email the telephone is occupied: "People go nuts when they can’t reach you for 1.5 hours” (Karl, 30) he laments.

Lotta

The exchange activities that Lotta notes in her diary are all face to face interactions, except for an added note of “four telephone calls during the evening.” (Lotta, Diary). Mainly these interactions are with one or more of the five other members of her household. With a large household of four children with several extra curricular activities, and a management position at work, interacting with the family appears to be a project in itself from the planning that is required. During the week, Lotta meets the family for breakfast when she is not out of town or leaves the house before the others are awake. A few specific inter-household exchange activities take place twice: talking with the children and putting them to bed; attending parents meetings at the children’s schools; having dinner with the family; and spending time with her cohabitant. Once, she attends a theater performance at two of the children’s schools, where she also meets with two of the grandparents. On one evening they have a friend visiting for a short while. At Lotta’s workplace there are no private exchanges distinguishable from the diary. Although there are a few notes of her participating in surprising colleagues with flowers, those occasions may well be seen as part of her managerial duties rather than being of a personal and private
nature. On one of those occasions, Lotta notes in her diary what fun it was and how she misses having a group of workmates that she can casually join for a beer.

In general, the most frequent exchanges of email she has are with her partner Lotta says. They are still at quite an early stage in their relation and have recently moved in together and brought two children each (who also mail her), so they have a lot to speak about she says, and they email several times every day although she made no notes of this in her diary. Then there is Lotta’s brother, who she emails once a week, and her other siblings and parents who she mails about once every three weeks. She has her best friend in another city, another friend in yet another city and a third friend living abroad, and she expects she emails each of them about once a month. Lotta says she gets noticeably less telephone calls since she has email, but it is mainly at work. Privately she feels she does not depend that much on email, and she keeps much of her social contacts via telephone, especially over a cell phone while driving. Once, during the diary week she had forgotten the cell phone at work and enjoyed the commute without the phone and listened to music instead. When she wants to make sure she can reach someone, she feels that email is a better alternative than the telephone.

Maria

Maria’s exchange activities indicate an extensive personal network. During her diary week she has 40 exchanges that centers on several individuals and involving many others, as some exchanges are meetings with groups of friends. These exchanges take place over telephone, cell phone, answering machine, email and regular face to face interactions. Most face to face meetings take place outside of her apartment. With two exceptions, these meetings are prearranged through telephone calls to or from Maria. The exceptions are one occasion when she accidentally bumps into a friend on the street and another when she goes to dinner with colleagues from work. Maria gets together and spends the day with a friend and the friend’s daughter and husband that are visiting from abroad. It begins with a message on Maria’s answering machine after which Maria calls her up. Maria and her friend meet in the city and are later joined by another friend for coffee. Later, Maria and her friend go to see the friend’s husband participate in a marathon. After the race, they separate and meet up
later the same evening together with several other friends for dinner. Maria has more exchanges with this friend later in the week, once on the phone and once when she gets an email from her.

"To me it's a matter of survival." Maria says about email (Maria, 14). She came to Sweden several years ago and has no relatives here. She feels that email is her lifeline to family and friends that live in several other countries. With her parents in South America, she emails once every week. She also has contact once a week via email with her sister who lives in Asia. Maria's oldest and dearest friend lives in Northern Europe and they too exchange emails every week. She exchange emails with a few other friends living in different countries a few times every month. She has more frequent contact with friends in her own city, which occurs several times every week, and she appreciates the quick contact: "...to say 'hi' and to know where these people are." (Maria, 48). Although she sometimes get emails from her friends in Sweden with multiple recipients, she prefers not to send email to multiple recipients herself as she does not want everybody to know who else she speaks with. Maria prefers email to the phone to communicate with her Swedish friends when she is working. The telephone can be used for more urgent messages such as to change arrangements to meet, but she feels they have all the time in the world to speak with each other more thoroughly in the evenings instead. The contacts with her foreign friends and her family are not often made on the telephone as it is costly, but she says the conversation would be better over telephone. She has four different email addresses that she uses to email and the only private messages she gets at work are from friends living in her own city. During her diary week, Maria made few notes of her private communications at work and she says that her private messages exchanged at work are kept short and are regularly a matter of organizing activities for the evening. She checked her email at home every other evening, right before going to bed and she received 12 and sent 6 messages, all were exchanges with friends abroad.

Maria used to enjoy sitting in a café with a cup of tea, contemplating and composing long letters for her friends and family, telling about her thoughts and her life in the place where she was at the moment. With email, this has stopped. Instead, she writes shorter letters, although more frequently and with another content: "It's more of an ongoing dialogue. You send a question or a comment. Less narration and analyzing." (Maria, 62). It was tiresome to wait for a letter in return. She forgot about what she had written about by the time she got
the response, and as a student it was expensive. Her sister got a digital camera and started sending photos of her life, which Maria found to be such a great idea that she too got such a camera. Maria once received an email from her mother and father, originally written for her sister, without pictures in it but with reference to an email her sister had sent to their parents saying how nice the pictures were. Maria then bought a digital camera and started taking pictures to send to her parents, her sister and to friends in other countries. Maria says it is very much appreciated that people can see what she is doing. She also gets pictures from her sister and she likes it very much to be able to see the things and people that she is writing about. It take her a while to download the pictures since she has a slow modem, but when she does, she only sends a few at the time and she does not feel she has to sit by the computer waiting for it to be done. Now, she finds herself with a new opportunity to describe her life and where she is at the moment, this time with pictures to lend 'presence’ to her letters instead of many words. She still writes letters to her family and friends abroad, but to a much lesser extent. She thinks the letter has an advantage in some aspects, such as when you receive a letter it is tangible and you remember where it is. With email, the message has a tendency to be forgotten if it is not attended to immediately, and it is lost in the masses of stacked up messages in the mailbox. She misses aspects of writing letters, narrating and being creative.

Sven

The exchange activities during Sven’s diary week are many and diverse, much like Maria’s. But there is a notable difference between Sven and Maria’s exchange habits as they appear in their diaries. While Maria’s exchanges often take place face to face, Sven’s dominant modes of exchanges are mediated. One evening Sven gets together with six friends for an annual go-cart race between them. He also has face to face exchanges with his parents as he visit them one day and again over the weekend. The mediated exchanges he has are predominantly with his girlfriend over the telephone (she calls him twice), by email (he sends her two, she sends him one), and on ICQ (once). If one would describe Sven’s use of chat and ICQ as a series of exchanges, it is a series of 12 occasions. That means he connects to the Internet for the purpose of engaging in exchange activities (among other reasons) every day, except for when he visits his parents. And he
does so between one and four times every night, generally after nine o'clock. During these sessions Sven has exchanges with eight named individuals including his girlfriend. He has exchanges with these individuals on several occasions, all of which are women, (person A five times, person B four times, person C three times, persons D and E twice, persons F, G and his girlfriend once each). The chat-sessions with which these ICQ-exchanges are intermixed appear on four occasions. The people with which he chats are not named but referred to as “five people”, “four people”, “two people”, and “several”. There are also two exchange activities with public and private functions. Once, as Sven visits the post office to cast his vote in the government election and to pick up a packet containing a book, and once as he purchases a cell phone, which he later tries out by making a call to his mother.

While Sven has not used email from home for more than a year at the time of this research, it quickly became an important means for social exchange to him. Immediately when he got his leasing-PC, he started to chat. In the chat-room he frequents he has met friends and above all, his girlfriend. She lives in another city in the same apartment as her former boyfriend, which tends to complicate the means by which she and Sven communicate. Sven says he cannot ‘conveniently’ call her, so much of their communication is still mediated and they email often as well as meet in a chat-room and on ICQ. Sven also has regular exchanges with a cousin in another city about once a week and a former colleague, now a friend, who he emails about meetings to play tennis. As he is still active in a chat-room, and practices ICQ, he communicates with people he has only met through email, in short bursts; some more regularly and others less often. During the diary week, Sven made careful notes but there was no private email at work. In the evenings he checked his email several times. First, when he came home from work, then after dinner and again late at night. He does not expect to get that much regular email. From the diary, 5 messages looks to be the average number of email messages. If Sven could be connected to the Internet all evening he says that he would. Then his parents would not be able to call him and they, along with others, have complained about him being connected and occupying his phone line. He deliberately adapts his time online according to whether he expects someone to call him. And as a remedy, he got the cell phone. "Being without email would be like having the telephone shut down" (Sven, 47).
Since Sven got his leasing-PC, it has happened that chat turned to email and then to telephone conversations. Overall, he expects to speak less on the telephone now, as he has lost contact with some people he used to speak with on the phone, but he has made a net gain from the chat-room. The usual sequence of events is that Sven meets someone on chat for the first time. After a number of exchanges on chat they connect on ICQ. Sometimes the communications get funneled to email and then to a conversation on the telephone. Twice, Sven has met with people who he first met on chat and one of them eventually became his girlfriend. Sven notes that the content of communication is different on the different channels:

- We had spoken on the phone. You tell each other different kinds of things on the net than what you do in real life and on the phone. It’s obvious that they are different worlds of communicating.

- You talk about different things?

- Yes, you talk, we’ve talked more seriously on the chat line than we’ve done when we meet. Then it’s more like ‘where should we go and eat?’ (Sven 62-64)

Sven finds it a bit surprising that he has gotten the most serious exchanges on a medium where he would expect them to be the least serious, and that on it he has experienced powerful emotions and even love (Sven, 86).

Leo

Leo never completed his diary so data on his exchanges, or indeed any other information activity over a week of his everyday life, is not at hand. All data about him is from one interview.

Like Karl, Leo sometimes brings home his job-Laptop in the evenings. And like Karl, this means that most of his private email is received during the day while at work. The most frequent contact he has is with his best friend and his brother who lives in another European country. When he sends something to his best friend, he often also sends the same message to another friend, many times a pointer to a web page. He finds this to be a means of economizing with messages. After these three people there follows about five others with which his contact is less frequent. With one of them he only emails and never meets at all, nor do they speak on the phone. They have emailed about getting together for a drink, but as Leo says, their "relation hasn’t
become that deep.” (Leo, 73). With two other people of this group he has a quite one-sided relation, that is he emails them as he is mailing the same stuff to others, but they rarely mail back. Sometimes he refrains from mailing them if the files are too large since he is aware of their slow modems, or if he knows they really will not appreciate what he is sending out. He assesses that half of all the messages he sends are directed to more than one person, often to a group of friends. He also receives mail from mailing-lists and he used to contribute to them by sending them email.

Leo assumes that people who prefer to discuss things from their personal positions would rather dislike email as a means of exchange. He has no such feeling as Karl and Kent, that he avoids personal contact by using email, as he feels that he uses email for its purposes and the telephone for its purposes. “There are very few people on my list that I would call on the telephone and say ‘now I’m going to read you a funny story.’” (Leo, 75). The people that he has the most frequent exchange of emails he also meets and speaks with on the telephone regularly, and email is often used for messages that require only the more ‘lightweight’ communication. But, he says that in his work he uses email as a ‘heavy’ media as well, discussing different matters in long letters, as he likes to have things in writing and have a ‘traceability’ of conversations held on email, which is not afforded by the telephone.

7.6.2 Exchanges using email

Many respondents think of email as a special form of communication. In stories they spontaneously compare it with the telephone but when asked how they make sense of it, they hesitate to make that comparison.

I think it’s more fun to speak with a person. It’s another kind of relation. If you write, "I’m really happy" in a letter it doesn’t really get through. /.../ It’s another type of information, a complement. (Eva 72, 84)

This is not to say whether email or the telephone is the better media. It depends, of course, on the purpose. The respondents relate email to other channels that are more familiar, such as ‘cheaper than regular mail’ (Kent), ‘lacking the nuances of regular mail or of the telephone’ (Eva), less intrusive than the telephone’ (Lotta) ‘more light-weight
communication than with the telephone’ (Leo). Karl on the other hand, refuses to compare it with anything, his view of it is that "we have gotten one more gadget and it’s different” (Karl, 76). Efforts are also made by others not to compare email with anything, but to assess it from its own qualities.

To Karl, email has functions that he could not get from anything else. He values the effortless possibilities to be able to send out a question to someone anytime he feels like it and get a response when it suits the counterpart to write it. He thinks of it as a non-committing way of exchanging information, although its qualities separate it from those of a meeting, and thus email, to him, does not quite qualify as communication. To Kent, email is a means of communication he could not exchange for something else. He thinks the transfer of information is more ‘precise’ than with other channels. Agneta’s son Fredrik thinks of email as ‘Fun.’ Ester considers it to be a good means of keeping contact. Eva’s understanding of email is of something with which she can show, tell, ask and narrate. To Johan, email represents a freedom similar to that of Karl’s, to be able to send messages when he chooses to. Johan focuses on its ease of use and availability, although the messages lack an emotional charge. Lotta appreciates the ability to decide for herself whether or not to accept a message. As opposed to using a telephone, she is in charge of when and what to do. As a means to get information it represents less of an effort than the telephone, to her. This is also Leo’s argument in favor of email, that it is the receiver’s privilege to decide what to do with a message, read it, act upon it or not read it and throw it away. Leo has been using email since the mid-80’s. He used to visit the University each evening to search the mail: "Because it was fun. There was a small chance that I would get anything but it was like having a new little mailbox.” (Leo, 25)

Maria and Leo, both with a lively exchange of email, sometimes receive messages from friends where they are only one of a few recipients. Leo found this to be a means of economizing with messages and he practices it when sending messages as well. Maria prefers not to send to multiple recipients herself as she does not want everybody to know who else she speaks with. One of the purposes to which this is used is to organize meetings for later the same day, or in a near future. Other respondents use email for the same purpose, but in their cases they arrange to meet one person at the time. While Maria and Leo both are young and have groups of friends that they meet, several of the
others socialize with fewer people at a time, or with couples, making it unnecessary to communicate with many in organizing the meetings.

There are, however, some occasions where respondents have expressed a wish to be able to do this. When organizing activities for their children in sports and at school, they wish they could have this opportunity because, as parents, they would not have to rely on the information they receive through their children. As Eva put it: "Even when the kids get a note in their hands to bring home, it never reaches the parents. It just disappears" (Eva, 149). Eva, Johan, and Agneta have expressed this wish, but it falls on the fact that not everybody has access to email at home, and so, notes and the telephone are used instead.

The respondents show both complementarity and substitution of email and regular mail. Several have started to use the computer for paying their bills, reducing their regular mail, and to order things on the WWW, and in this way are increasing their mail in another aspect (see section 7.8).

It is striking how the respondents relate to getting email as a pleasurable activity when they talk about it. It is also striking that many respondents are quite eager to check their mailboxes for new mail. Much like Leo described his early experiences with email, one is eager to check the mail even when there is only a very small probability that there would be any.

### 7.7 Dressing

There are few notes of information dressing that stems from the everyday life aspect of the diaries. There are more examples of such activities in the professional aspect, such as making reports and delivering speeches and presentations. The few examples from the diaries are introduced first. There are, however, reasoning and talk by the respondents about what is referred to here as dressing activities in the interviews. This material is introduced in the second section.

#### 7.7.1 Information Dressing in the diaries

The three instances that do appear in the diaries, all from Karl’s diary, relate to activities that later become exchange activities. What makes them qualify as dressing activities is that the notes are about how he engages in an activity to express something.
On one occasion, Karl writes a note and leaves it on the car, saying "Getting change" (Karl, diary) intended for the parking attendant. As he returns to the car, two hours later, the attendant is there and asks him how long it takes to get change for the meter. Another case is from after he has visited his mother at the hospital and he calls his cohabitant to "get it off my chest" (Karl, diary). The third case from Karl is an instance where he is formulating a poem for a gift together with his cohabitant, just before going off to a party.

There are notes about dressing activities such as talking and writing, but such notes in the diaries are in relation to an exchange activity, with clear measures of reciprocity in the communication, and there is no particular case, other than the above three cases from Karl’s, where the actual dressing activity is noted without reciprocity.

### 7.7.2 Information Dressing in everyday life

The few instances on information dressing that appear in interviews are generic remarks in relation to other information-activities. There are exceptions though, such as by Johan:

> I’d like to have a design program (on the computer). When I’m going to make something, build a deck (for the house) or... I make plans so I’ll know how to make it. I made a plan for the cage for my daughter’s bunny rabbit. I want to prepare myself. I’d like a design program so I could make plans to scale. (Sven, 315)

Another example is from Kent. When he is using his ham radio to make contact with all kinds of different people all over the world he always makes an entry of it in a log that he keeps. The log is a database that he has had for several years. I asked him if he by chance had communicated with anyone in New Zealand, and he immediately pulled up all the contacts he had had with people in New Zealand, which covered at least the full page on the screen that I could see (Kent 78).

Information Dressing is also an activity, which encompasses taking pictures, something several respondents discuss in relation to email (see section 7.5).

Information dressing is not discussed explicitly in interviews, nor has it a clear presence in the notes from the diaries. One reason might be that it is such an un-thought-of activity that it takes place largely unnoticed. That it is not much visible in the data does not belittle the
fact that it does take place in everyday life. Information dressing is present, indeed has to be present, in other information-activities, at the very least in searching-, exchanging-, instructing-, and publishing activities.

Q&A

Writing a query for a search engine is not a matter of stringing together long lines of thought. And even as one writes single words for a search they are not intended to be saved. Nevertheless, producing a search query is, to some extent, an information dressing activity. It was discussed at length in section 7.2.

Channel affordance

In the previous section "Exchanges using email", the respondents' thoughts on using email and other channels for exchange activities is discussed as a matter of how they can express themselves through them. While some show appreciation of email as a means for casual and timely reciprocity, others emphasize their personal need to describe, narrate and be precise in their dressing of thoughts. In line with this, it has been discussed how the respondents resort to different channels for different exchange purposes, e.g. email for brief exchanges of notes and to send things you just would not call someone to tell, letters to older relatives and pen-pals, the telephone for chit-chat, and face to face interaction for serious and 'thicker' exchanges. But there are also stories of how a conventional view of different channels are subverted by the respondents, e.g. using digitized pictures to add thickness to email, which is yet another means of dressing information.

7.8 Instructing

It may be said that practically any information activity that takes place on an automated information system such as the web are information instruct-activities. Performing a search with a search engine on the web is, in principle, an instruct-activity as one sends a request to perform a search on a database and is presented the result. Equally so are a click on a hypertext or a web-button a request to show the linked web page. Even sending and receiving email may be seen as information instructing. Such requisitions are present throughout this study as matters
of search-activities, browse-activities and so forth, and they are discussed here only briefly in relation to how the respondents express their trust and distrust in such information giving. This has already been discussed to some extent in the section “Fearing the Internet Boogie Man”.

Information instruct-activities that appear as type cases in diaries and interviews are voting in the parliamentary elections that took place at the time, and participating in competitions and raffles by answering quizzes and by gambling on horses. Sven cast his vote at the post office when he had an errand there a few days ahead of time as he was planning to visit his parents on Election Day. Maria did go to vote on the Sunday of the election. (Other respondents did not make entries in their diaries the week of the election.)

A lot of other information instructing-activities can be distinguished as shopping; making reservations, making requisitions for free stuff, and managing household-business. A general matter of trust in the means, through which the activities are performed, is an essential feature of some of the voluntary information that is emitted in instructing activities.

7.8.1 Shopping, requisitions, reservations, and the issue of trust

Instructing activities, which may be described as shopping, are a matter of both shopping in face to face interactions in a store or a market, and shopping that takes place by mail order, email, or at web sites. Over the diary weeks, almost all respondents noted some shopping. The predominant shopping that took place were stopping by the grocery store on the way home, filling up the car with gas in and visiting the liquor store or pharmacy. The only out of the ordinary shopping was Sven’s purchase of a cell phone. One single instance of shopping online was made by Karl, as he made a last minute order for flowers through the Internet. Karl was also the only one to note any reservations. On the morning that he heard about his mother having taken ill, he decided to fly and visit her, and made reservations for a flight and a rental car by phone. On another occasion he made reservations for a ‘nice’ restaurant for a farewell dinner with an old friend who was leaving town. That too he made over the phone, and he became annoyed when he didn’t find a decent and available restaurant until his fifth attempt. Although there were no other cases of online shopping in
the diaries, all respondents had some experience with it that they shared in interviews.

Typically, when the respondents relate experiences of, or feelings about, shopping online, they talk about risks involved in giving sensitive information such as their credit card information. Only two respondents would not hesitate to use their credit cards online. Agneta say she has never bought anything on the Internet, but the other day she ordered some catalogues. Agneta’s son interjects that it’s easy to be conned on the Internet (Agneta, 73), but Agneta herself has not thought much about it. She tells of how well it worked for some colleagues of hers that recently bought something on the Internet (Agneta, 74). Leo too has no doubts about using his card online, but for very different reasons. He says that he is aware of the Internet’s weaknesses and has installed cryptographic software to better control the risk. As far as disclosing his credit card number, he feels he can do it based on his knowledge of what the rules are when there is a fraud. He knows that legally, no transaction is valid unless there is a written signature from the buyer, and if he were to be conned he would not lose any money as long as he refutes the purchase to the card company. He feels he can live with such administrative problems as long as he can conveniently make online purchases.

While the other respondents have experience in shopping and ordering things on line, only Kent and Lotta have used their credit cards for it. The week before one of the interviews with Kent, he had bought a microphone for his ham radio. He has “done a lot of shopping on the Internet” (Kent, 271), sometimes using his credit card: “but it... you’re a little anxious about it.” (Kent, 271). Lotta has been shopping for food from a distance for a very long time. Before the Internet came along with its web stores, she used to fax her requests. For payment, she has given her credit information on the side. She finds it very helpful to do her grocery shopping online, but she still feels it’s not working in an optimal way. As it is now, she may order something but will not know whether it can be delivered or not. She thinks the grocer should expand their assortment, and offer things like bedspreads and flower seeds too. She has also made travel arrangements for a trip abroad over the web, and in so doing she believes she paid for it online, “but I don’t believe that it’s safe” (Lotta, 32). She prefers to pay c.o.d. (Cash on delivery) as she does when she buys books. Lotta thinks she is inconsequent in her reasoning with her credit card, as she would never hesitate to leave it out of sight when purchasing something over a counter.
The closest Ester has ever came to shopping online was when she decided to buy a camcorder she found on the web, but the costs for shipping turned out to be too high and she never went through with the purchase. But she would not have used her credit card, and she tells of how she recently read somewhere of someone who had done that and had gotten his or her account emptied (Ester, 8, 10). She has made requests for free stuff, though. The other day she ordered timetables, maps and other tourist information for a trip that she is planning together with friends (Ester, 28). Eva has also requested travel catalogues, and she has done some shopping of CDs, which she paid for c.o.d. Like Ester, Eva tells that she has read about how people who use their credit cards online have had their accounts robbed (Eva, 125). Not even in shopping over the counter, would she accept someone disappearing out of view with her card. In a pub, for instance, she would have them move the machine to her so that she could see what they are doing with it (Eva, 125).

Johan has bought CDs and a catalogue on the web. He would like to do some of the grocery shopping online, but it’s still too expensive to be an interesting option. He has never used his credit card online and when he shops it is c.o.d. Karl has ordered concert tickets, and brochures and he frequently make his travel-arrangements online, but it’s C.O.D., and with the travels he has given his credit information to the travel agency on the side. Karl does not feel that this mean a restriction to him, and while others may think that he is silly, he refuses to use his card until he can feel absolutely safe about it (Karl, 99).

Maria also shops for books and CDs online, paying C.O.D. and refusing to give her credit information online:

- No, that’s a thing that I… I don’t want to.
- Why not?
- I’m not totally convinced that it’s safe, because it isn’t. /…/ On the other hand, just about anything could be a risk. Every time I pay with my credit card. So if something were to happen it could anyway. As long as there is the opportunity to pay c.o.d. (for books), then it doesn’t’ matter. (Maria, 77, 197)

Maria would not go through the trouble of connecting to the Internet just to make reservations for the movies. Sven would and he has. He has also made travel arrangements on the web, but not bought books or
CDs as he feels unsure about “how the payment routine works” (Sven, 132)

Some respondents relate similar feelings of distrust when it comes to email. They either suspect or claim to know that the information they emit as they send addressed emails are available not only for the eyes of the addressee. Eva would never send classified information or anything derogatory via email, as she feels that what you write is available for others to read. At work she has no doubts about the security, but she believes that while people in general believe their personal mailboxes to be their private domains, there are those with access to them who can scan messages for information. Leo is also careful in what he sends by email, but for different reasons. He believes that it is so easy to make a forward on a message and that he is not sure everybody would respect a comment made in private to stay private, but would forward the comment to someone who is not intended to see it, perhaps even accidentally. When it comes to the general security of email, he claims to be aware of its weaknesses and to have installed cryptographic software to better manage the risk.

7.8.2 Private Business

During the diary week, there were a few notes about managing the household finances. Agneta drew money from an ATM, and terminated a lease for her apartment. Ester managed problems with her ISP, her gasoline company and canceled a subscription, all done over the phone and by email. Karl registered a bill on his online bank account. Sven handled some bills and bank papers that arrived in the daily mail.

While most respondents hesitate or refuse to give sensitive information in a purchase on the web, there are few such reports when it comes to managing their business over the Internet. Most respondents, but not all, have bank accounts available on the web and use it to pay their bills and balance their accounts.

Ester says she does not hesitate to use her bank account online, although she “hears about banks having poor security” (Ester, 50). Eva feels her use of an online bank frees time for her to do other things. With it, she can decide by herself when she wants to manage her business and it’s not up to the bank. Karl and his cohabitant manage all of their business from their online account. The simplicity of using the online account, together with an inheritance, made them start working with their stock portfolio. Having the account online has
provided them with a better overview and control of their money than they used to have. And they can register a bill when as it arrives in the mail: “What you used to have to do on the 26th of every month, such a pain, you don’t have to any more. You just register it, say when you want it to be paid and forget about it.” (Karl, 93). Kent, who manages all his businesses as well as his mother’s, is equally happy with his online account. He registers the bills as they arrive and then forgets about them (Kent, 56). Sven has an account, and Leo has two accounts online, on which he manages his business. Maria also has an online account and she ranks it to be of most utility of all he use of the Internet (Lotta, 75).

Agneta does not have an online account. Not that she doesn’t trust the bank or feel that it’s inconvenient to have to connect to the Internet:

-No we don’t.
-It’s nothing that appeals to you?
-Maybe. No, but I think it’s working well as it is.
-Do you have the opportunity to do it over the phone?
-Yes. Right now I feel I don’t have a great need for it. I don’t know, I guess I think it’s a nice to sit down with the bills once a month. Fiddling with paper, filling in the forms and such. I think it gives me a grip on my bills somehow. But sometime in the future I guess I’m going to pay my bills on the Internet.

-Does it feels more real to pencil in the amounts and...
-Yes and lick envelopes. It feels as if... I don’t know. (Agneta, 151-153)

Johan manages the business of his household by regular mail and over the telephone, “But if it wasn’t possible to transfer money over the phone, I’d get it (an account available on the web), because I want to be able to do it from home, moving money around.” (Johan, 83). Lotta doesn’t yet have an online account, but she says she is going to get one, although she is still a little insecure about the security (Lotta, 32, 199).
7.9 Publishing

No information publishing activities appeared in the diaries. In interviews, on the other hand, examples of information publishing activities occurred in talk about personal websites on the web. Of the ten households studied, four have some form of presence on a web page and three more think they soon will. Five households have knowledge to make and post websites, and three more say they want to have the knowledge.

7.9.1 Personal Websites

Ester has a personal website with pictures of a summerhouse. There is also a collection of images of planets, moons and stars of the universe that she has found on the web and posted on her own website. The images are accompanied by informative texts. She says that her main reason for making the website was to advertise the summer home for sale. Ester says she is restrictive in handing out the address for her website. Kent also has a personal website. On it are pictures of himself, his house, the ham radio equipment and the antennas that go with it. There is a little text on his website and some links to ham radio related resources. Kent has made an effort to make his website possible to find by search engines for the benefit of the ham radio community. Like all ham radio users, Kent has a unique CQ-identity (which reads 'seek you' and is not the same as the Internet ICQ), which he has made searchable on the Internet.

Ester and Kent are the only two respondents with active websites at the time when this study is conducted. Leo has a website that he has not updated for two years. Karl has a website, which is very much active, but used only for professional purposes, which means it is not to be seen as a personal website as much as a professional one. During his diary week, he updates his website with new text on one occasion.

Agneta and her son do not yet have a website, nor would they know how to make one. Her son would like to have one where he would post stuff about sports that interests him. He would like to have links to make the page interesting for others as well. Lotta expects her cohabitant’s children will eventually make a website for her household. She would not mind being on a website, but as she thinks about it, she mentions threats by activist groups against the company she’s working at. She has not really thought about what it would mean to be visible
on a website, and decides to consider it before posting one. Sven has made printouts of how to produce and post a personal website. When he got his leasing PC and the web account, the ISP provided space for websites:

Early on I thought about making a website but I never did. I haven’t gotten around to it. The plan is there but I haven’t done it. /.../ It said that everybody was allotted a website, so I tried to find it, but of course I couldn’t. You have to make it first. But it’s there, everybody that took the offer has got a space for a website with their address. But you’ve got to open it somehow. Activate it. (Sven, 391, 397)

Johan too has thought about making a website but he probably won’t:

I’ve thought about it, but as long as I don’t have the time to surf around on other people’s websites, there’s even less time to make one. But I’ve checked out a little of what you can do with lines and patterns. I wouldn’t mind making a website. /.../ So why would I make a website? "I don’t want to exploit my family on the net," my wife says. So I think, no, perhaps not, why should I? It would be different if I had something to offer, or if I really wanted to get in touch with other people. But I don’t have that need. (Johan, 251, 253)

Maria has no personal website and she has not thought about making one: "A website only has some kind of purpose if you keep it alive, otherwise it’s extremely boring. And I wouldn’t have the time or the energy to update it each and every day." (Maria, 181). The company she’s working for is having all the employees write something about themselves to put up on a web page, which she will do "but I’d never make my own website" (Maria, 181). Eva feels pretty much the same about personal websites as Maria:

I’d never put in an ad about my little family in a morning paper (either). I don’t think people are aware of how visible it makes them. I think people believe it’s only the closest ones that are watching, not that anybody can get to it. (Eva, 127).

She does have the knowledge of how to make a website if she’d like to, as she has produced web pages at work and is quite pleased with the result.
7.10 Summary & Findings

In this chapter empirical data on how the respondents engage in information-activities have been reported. In relation to that I have presented data about assessments of relevance and choices among different information systems for different purposes.

# 7:1 To the respondents, the Internet is a resource to information that is used when a more convenient information system does not resolve the problem at hand, and when it is considered to be the most convenient information system.

The Internet is made use of in all forms of information behavior, i.e. seeking, gathering, communicating, and giving information. Occasionally it is a unique source that cannot be substituted, but more often it is a complement or substitute for other sources. It is turned to a) when a more convenient information system does not resolve the problem at hand or is unavailable, and b) when it is considered to be the most convenient information system. Previous research has also shown that access to the Internet in everyday life makes information available that otherwise would not be available or that respondents would not bother trying to acquire (Haddon 1999).

# 7:2 The respondents' search & retrieve-activities for reference information are in response to immediate needs that are resolved (satisficed) at the time of the search. For this purpose the WWW is a complementary source for information.

The respondents' search & retrieve-activities for market information relates to deferred needs in line with a change-project that are not resolved at the time of the search. The WWW is often a first instance of search but is followed by searches in other sources before the problem is resolved; i.e. a decision is made or an action is taken.

Other findings suggest that the information search process is often a matter of using different information systems at several different events (Kuhlthau 1991). The activities of the respondents support this notion when they are searching for market information as they pursue the search at different times and on different information systems. However, when they are searching for reference information they may turn to different sources within a short time frame, but they do not report returning to perform reference-searches again and again at dif-
ferent times. Even when there is not an optimal resolution to the problem they appear to settle for whatever information they have acquired.

When the respondents are confronted with a problem, immediate or deferred, the most convenient information system has been found to be used to search for information (Taylor 1968; Faibisoff & Ely 1976; Hardy 1982), which is supported by the results of this research (see also # 7:1). In terms of search & retrieve-activities, the respondents do not consider the WWW to be the most convenient source to reference information, although it is sometimes the only one available. They do consider it the most convenient source for market information, although it is not considered as a sufficient source as they often return to the search and use other sources before a decision is made and the problem resolved.

Overall, the respondents show a markedly positive attitude towards the search & retrieve-activities in which they engage. A reason for this might be the positive emotions connected to a formulation stage of searching for information (Kuhlthau 1993). The respondents' objective is clear, and there is a sense of direction and personal development. Results from this study also indicate that social participation has a role in the attitude to the activity, see immediately below.

# 7:3 All search & retrieve-activities of which the respondents report have social connotations.

Searches for reference information and market information alike are performed as responses to problems of maintenance of social relations. It may be out of concern for someone else (e.g. getting medical information), the need to give or get social support (e.g. to establish unknown or disputed facts), or to get behavioral orientation in decisions that affect other members of the household (e.g. planning vacation trips or acquiring goods and services). Search & retrieve-activities without social connotations are conceivable (and indeed might be expected) and reasons for their absence in this research may be that social actions are easier to remember and report, in interview recollections as well as in diaries, than private activities that have not been verbalized. A discussion about the maintenance of social relationships is taken up in chapter 8 Outcomes & Change.

# 7:4 The mode of 'Browsing with a purpose' is primarily performed as a means for the respondents to encounter information
and secondly as a means to familiarize the respondent with the environment. The mode of 'Browsing to look around' is primarily a familiarizing activity and secondly a means to encounter information.

The browse-activities of the respondents have been defined as activities that are performed in order to familiarize oneself with an environment with some expectation of encounters with valued resources. The empirical support concerns the environments of the WWW and TV, but as a concept, it could possibly be used on any information system, and perhaps physical environments as well. In the browsing by the respondents, the priorities of familiarization and encounters with information differs from a seeking and a gathering behavior.

# 7:5 All respondents engage in browsing as looking around, whether they are seasoned users of the WWW or have less experience with it, but those more experienced do it less and with more sense of direction.

This can be understood in a way that all browsing leads to a finer granularity to the understanding of an environment. And when someone meets with an information system for the first time, such as the WWW, the familiarization is more superficial than for a seasoned user of the information system. 'New' users of the WWW are therefore likely to perform less directed and more superficial browsing, only to leave it as a developmental stage and become more directed and particular in their browsing. A reason being that browsing without a clear purpose adds to confusion and potential stress (Kuhlthau 1993).

# 7:6 Respondents that are less experienced users of the WWW adopt a 'browsing with a purpose' mode of searching, and it is a source of stress.

'New' users of the WWW does not have enough knowledge to perform successful searches and instead they adopt a 'browsing with a purpose' mode of searching. As it is an information-seeking behavior with some perception of a want for particular information behind the activity, and as there is no guarantee that the valued information will be encountered, this activity can be stressful and frustrating. It can be compared to the confusing stage of exploration in the information search process (Kuhlthau 1993), and it is not unusual that the search is abandoned and
the respondent concludes that there is no information to be found or that they are unable to find it.

# 7:7 When the respondents encounter information as they are browsing they often postpone taking part of it by printing, bookmarking or downloading, as a strategy to manage stress.

The respondents are motivated to browse in order to encounter valued information and to take part in the information that they find to be of relevance, but the time and effort it takes to take part in the information leads to a situation where it has to yield to other activities. To postpone the actual taking part of the encountered information reduces the immediate stress, but the printouts, bookmarks and downloads may increase stress further ahead.

# 7:8 The respondents have a few familiarized sources that they habitually monitor in a project of staying up-to-date.

Some monitoring is habitual and some is incidental. The respondents have a set of information systems and services to which they regularly return as a means to stay up-to-date with developments in general and in particular fields of interest. The activity can be considered a habit for several reasons: It is an activity that is performed routinely without much variation from day to day and relates to the same circumstances. When it is not possible to perform the activity, respondents report a sense of dislocation. The activity not only provides encounters with information but also reaffirms the normality of the situation from the ontological security that is offered from the generally trustworthy, unchanging and predictable format and content (Giddens 1984:122-126; Silverstone 1994:5-7). Occasionally, monitoring appear to be mainly ceremonial, where information is not the issue as much as the recurrent performance of a physical activity in relation to other activities.

The reports of the respondents’ forms of monitoring different sources over the course of a day imply a relation between the type and source of monitoring, where they are physically and what time of day it is. This begs the question of which constitutes what: To what extent do the activities of every day life constitute what and when to monitor, and to what extent does the monitoring constitute the shapes of other activities of every day life?
Incidental monitoring, i.e. browsing a familiar source as it is encountered or irregularly purchased, looks to have some elements of habit to it as well. Several respondents report reading an evening paper or some magazine only at special occasions, e.g. when traveling, on holidays or weekends, or when something extraordinary has happened in the world.

# 7:9 When the respondents modify a habitual monitoring it is as a change-project.

Most of the information systems that are habitually monitored are "subscribed" to by arrangements for the system to deliver at a given time, location and/or circumstance, e.g. setting the radio alarm for wake-up, subscribing for a morning paper, having a mailbox, email, and an answering machine. Habitual monitoring also has a symbiotic relation to other activities of everyday life, e.g. monitoring the morning paper for breakfast, checking the mailbox when coming home from work, having dinner in front of the TV-news. These relations 'freeze' the habits of monitoring, and changes are not taken lightly by the respondents. In order to modify the habits, some intellectual effort and attention needs to be given (Johansson 1988:75). With the terminology used here it is argued that a change-project is required in order to alter a habit where it is consciously assessed and modified in relation to other activities that it is related to. The habits of everyday life are thus understandable as a fine-tuned system of activities that relate to each other. A change in one regular activity often affects other activities as well. As habits are sedimented, its connected whole takes part in resisting change: If a particular information system is lifted out of an individual's life, say the computer or the TV-set, the opportunity for engaging in several information-activities does not come to an end, furthermore; other activities that used to take place in relation to those information-activities on that particular information system are dislocated and in a functional limbo. Finally, there are slots in the time-space of everyday life that used to be filled by uses of the information system that are now empty. The point with all this; as habits of monitoring (and indeed other habitual information behavior) are interlocked in other activities, time of day and physical location, it ascribes for a general inertia in information behavior.
The respondents report that they want to take part in information that they consider being relevant for them. This entails a double problem of knowing what to consider as relevant and locating such relevant information. The problem of knowing what they would find to be relevant is coupled with a presupposition by the respondents that there are a lot of things that are relevant for them 'out there' and that it is not always possible to anticipate what would be found to be relevant. The presupposition is likely to be strengthened by experiences of serendipitous encounters with relevant information in earlier information-activities. There is something out there that they would like to take part in, but they do not know what it is or where to find it, thus it is not possible to frame as a question in a search & retrieve-activity. Some of the respondents express this as a sense of stress from not getting enough (relevant) information. I label this as 'pull-stress,' which is to be understood as the sense of stress that is not necessarily physically experienced but as a feeling of being obliged to take part in information that is relevant (see also #7:7).

The other side of the problem, i.e. the problem of locating the relevant information, is coupled with the grim reality that information that would be relevant for a respondent is hidden in an abundance of non-relevant information. To locate the pieces that are relevant they also have to take part in other pieces in the information-glut, at least on a superficial level such as from email subject headings, book-blurbs, web and newspaper headlines, in order to make initial assessments of relevance. This implies a corresponding sense of 'push-stress,' i.e. a sense of stress experienced from there being an abundance of non-relevant information that one has to assess in order to locate relevant information.

In light of this, monitoring is a satisficing activity. The first problem is accommodated by reviewing as many sources as possible, and the second problem by reviewing sources that are as to the point as possible. Respondents that monitor a wide assortment of information systems and services report that they experience pull-stress but not push-stress. They do not think that there is 'too much' information (Ester, Johan, Karl, Leo, Lotta, Maria) or that it is a source of stress to
frequently encounter non-relevant information. Respondents with a narrower scope of systems and services in their make up of what to monitor, report feeling a push-stress rather than a pull-stress.

# 7:11 Some respondents occasionally monitor on behalf of people that they know (and are committed to), and offer relevant information in everyday conversations and as information-gifts, acting as agents that intelligently discriminate (filters) information for the service of someone else.

The respondents assess relevance in terms of personal and social concerns. In effect they also monitor on behalf of other people on occasion.

Several of the respondents report that when they encounter information that they know or believe another person would consider relevant, they pass the information on to them. All of the respondents report that they receive such tips via email, often as pointers to web sites or web pages. Often such tips lead the respondent to browse. In this sense monitoring is also a social behavior. I will return to this when relevance is discussed in detail (See also # 7:18 and 7:19, and sub-section 4.4.2.).

# 7:12 The respondents exhibit a Paradox of Unfolding Preference in that they value unfolding more than monitoring, but it has to yield to all the monitoring to be done in order to find relevant information to unfold.

Whereas the monitor-activity (and indeed browse-, and search & retrieve-activity), to a large extent, is engaged in order to encounter information, the unfold-activity is the actual taking part of the information and as an activity it is considered by the respondents to be of greater value. Monitoring is instrumental to encountering the valued information to unfold (and monitoring do indeed often lead to unfolding) and several respondents (Leo, Maria, Kent, Karl, Johan) report dissatisfaction from monitoring too much and unfolding too little. I understand this as a paradox of unfolding preference: The respondents would prefer unfolding but it has to yield to all the monitoring to be done in order to find relevant information to unfold. Or stated in a more general definition: When much information is offered in a given time-space, unfolding yields to monitoring. The more time and energy
spent on monitoring, the less time and energy is left for unfolding (See also # 7:7).

# 7:13 The respondents value active unfolding more than passive unfolding.

The respondents turn to television for passive unfolding, and to the WWW and print for active unfolding.

Passive unfolding is understood as an activity where the respondents allow for something to unfold in a continuous flow before them. It is afforded by television, radio and unmediated communication in circumstances where only a limited level of participation is required by the respondent for the unfolding to occur. Active unfolding is understood as an activity where the respondents are responsible for the flow of unfolding, and although it can take place on any information system, it is a necessary condition in order to take part in a text. Perhaps the greater effort required in taking part of texts partially explains why it is a more valued activity.

Related to this is another aspect of the active-passive modes of unfolding. Passive unfolding, disregarding for a moment the information system, is associated with an information format that is endowed with features of release, relaxation, escapism and arousal. Active unfolding, on the other hand, is related to features of some intellectual effort, perspective, learning and personal development. Whereas passive unfolding requires the respondents willing suspension of disbelief (Coleridge), active unfolding has degrees of interpretation and analysis. (It is thus possible to actively unfold a passive unfolding e.g. analyzing an episode of "The Little House on the Prairie."). Of all the unfolding that the respondents report in their diaries, passive unfolding of television is the largest in terms of frequency and time, and it is a pursuit that is 'taken in doses' and valued for the release they experience from the activity. Obviously this does not hold up as a very important finding since passive unfolding implies the users' altogether uncritical acceptance of whatever information they are offered. It does not work that way as they need to make assessments of relevance in order to make sense of all messages, even the trivial ones. Nevertheless, if active-passive is accepted as a matter of degree and not absolute values, it remains an interesting result from the implications it may have: Respondents that report watching less TV as their use of the WWW increases appear to substitute monitoring and unfolding from
the TV to the web. Passive unfolding, on the other hand is continually sought from the TV. If this would be a general trend, the web would be taking over 'good and useful' TV watching (that requires the viewers active unfolding), leaving the TV strictly for entertainment.

# 7:14 Unfolding is to some extent performed habitually by the respondents.

Some of the respondents’ unfolding takes place regularly and in relation to other everyday life activities. Examples are reading books and documents at bedtime or in transit, and watching TV after dinner. As it often takes place in relation to monitor activities, it relates to the same circumstances (see also # 7:8).

# 7:15 The respondents engage in exchanging in order to create, sustain and develop social relations in a generic project of maintenance of social relations, and as a response to particular everyday problems of specific projects.

Much as information gathering activities may or may not provide encounters with information but at least offer a moment of release, routine exchanges may or may not provide encounters with information that relate to a specific problem, but at least offer to reestablish the social relationship. Exchanges with people that the respondents have some social relationship to (intimates, vicinities, acquaintances and remotes) seem to be framed by the maintenance of social relationships as a generic project. As such, the exchange offers to sustain and develop the relationship, a confirmation of normality of the situation and a valued pastime. Embedded in the routine exchanges are other specific projects and particular problems, of which the most notable is the organization of shared contexts, e.g. issues of the shared household or plans to get together.

Probing this a little further, and as a note of observation, the respondents make a difference between 'light' and 'heavy' exchanges. Much of exchanges in everyday life of the respondents concern the organization of shared activities and maintenance of social relations—which often is a matter of keeping each other up to date on developments. Both these forms of exchanges concern things to do, in the past-, present-, or future tense. More precisely it concerns life-activities, i.e. movements in space and time with meetings of people, places, objects
and events. Such exchanges are very descriptive by their nature. Take such exchanges away, and what remains are the few exchanges that have less to do with 'doing' and more to do with 'thinking' and 'feeling'; less description and more analysis; less organizing and more sharing. Might that be a relevant explanation for the differences between the respondents' 'light' and 'heavy' exchanges?

#7:16 Whereas online banking is largely accepted, the respondents show that purchases with credit cards on the Internet is socially questioned.

Online banking and online payments have more commonalties than differences and yet the respondents have very different attitudes to them as instructing activities. Most of the respondents report that they would not make payments with their credit cards on the Internet, and at the same time they treasure the opportunity to manage the business of their households on their on-line bank accounts. Disregarding the horror stories of hackers getting into their personal accounts, there are only two substantial differences between online banking and online payments. The first difference is that when managing the bank accounts, the counterpart is always one and the same, and the second difference is that there is a special security system functioning for the transactions with the bank. From the perspective of the respondent and what is relevant to them, this difference should not need to be significant. In online transactions the intermediary is liable in cases of fraud. The bank makes sure that they will not be exposed to fraud by requiring the stronger security system while the credit card-companies in general do not. A possible reason to why the respondents trust the bank but not their credit cards can possibly be found in the change-project of installing the security system from the bank: In addition to the actual enhancement of security, the change-project offers an opportunity for utilizing information about the bank-customer relationship and changing the attitude towards the activity of conducting online business with them. Again, the bigger difference, from the point of view of the respondent, is not found in the actual security but in the change of attitude. If a credit card company offers the same opportunity for a change-project, a similar change of attitude could occur. 68

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68 Actually, this is precisely what American Express is doing as this is written. They offer a special credit card, "Amexblue," with "Online fraud protection
Making websites on the WWW (as a publish-activity) is to the respondents a step in becoming a proficient user of the WWW.

Respondents with short experience of the WWW have not made websites but say they would like to. Respondents with longer experience of the WWW have some experience of making and posting web pages. Respondents that have and maintain websites have projects or problems that are furthered by them. This indicates that making web pages is understandable as a step in becoming a proficient user of the WWW, but that only when there is some utility with it, will they maintain it.

The respondents assess the degree of relevance in messages from the extent to which information can be found to relate to their problems and projects.

Information that is relevant to a respondent is such that is found to concern some project or problem that is part in making up their everyday life. Information that concerns generic projects can be predicted to be of relevance, namely information that concerns the care for oneself; the care for others to whom one is committed; care for the household (and the neighborhood) and their possessions; favorite reflective and recreational pursuits; transportation in progress; the food they eat and; their job. Within the frames of generic information-related projects, the respondents will find information relevant that concerns the people in their personal network with which they have social relations; their mastering of the information use environment and; their choice of areas where they like to stay up-to-date.

More specifically, they find relevance in information that relates directly to a particular problematic situation, immediate or deferred, within any one of these generic projects, and in specific projects oriented to change or pursuit of the order of their everyday life. Being familiar with the details of a respondent's everyday life is, by and large, to be able to predict what information they would find relevant and what would not be relevant. Systematic knowledge of what a respondent prefers to unfold, which is the 'gold-medal' of information, and to habitually monitor, which is the 'silver-medal,' would ideally reveal the respondents' 'taste' for information. Alas, the particularities guarantee.” The marketing of this credit card is with emphasis on how 'smart' and 'secure' it is for payments on the Internet (www.americanexpress.com).
of this 'taste' is not possible to know, for one reason because the as­sessments of what information to unfold and what to skip (in a news­paper for instance) is not only made from relevance judgment but from other situated variables, such as urgency and other priorities. Not even the respondents themselves can know before they have taken part (superficially) of the information whether it is relevant or not. As they do want relevant information, they satisfice by monitoring as many sources as possible that are and as to the point as possible, and some distinctions of 'taste' can be seen in what they report to look for in the sources that they monitor, such as the morning paper.

# 7:19 Some respondents assess information that is found to con­cern problems and projects owned by someone that they know, as relevant.

This statement is a more explicit expression of social assessments of relevance that have already been touched upon in # 7:11 and 7:18, and that paves the way for discussions of finding # 7:20.

Not all respondents make relevance assessments with other people in their mind, whereas others do it systematically. Those that do, reveal it by sending tips and pointers over email. Those that do not send such tips over email may very well do it in other ways that are not apparent in this research. Agneta, Johan, Kent and Lotta do not offer tips on email. Sven and Maria do it rarely and would consider doing it if they came across information that they are sure someone else would take a special interest in, such as concerning the obscure hobby of a relative. Eva, Ester, Karl and Leo systematically exchange such pointers. There seems to be some systematic differences in these groups. The first group uses email privately to a very limited extent and none of them have very active email users in their personal networks. The last group have individuals within their networks who mostly communicate by email.

Another possible explanation is that individuals have different pre­dispositions in making social assessments of relevance. It may be that some individuals only make the association or acts upon it when there is a very vivid connection between the information and a person they know, while others act on more ambiguous connections.

The social behavior of assessing relevance on behalf of other pe­ople, and in effect to monitor on the behalf of others and offer infor­mation in personal exchanges, have overall positive effects. As perso­
nal communication comes with a tacit guarantee of relevance (Greisdorf, 2000). All respondents are likely to look at such pointers (Ester, Eva, Karl, Leo, Lotta, Maria, Sven). And although they report that they appreciate the tips (most often as pointers to web-sites), and that they monitor most of it and unfold some of it, they are rarely considered to be of very high relevance. The outcome of the tip is therefore mainly of maintenance of social relationships and secondarily as encounters with valued information. The behavior can be likened to exchanges in face-to-face communication where information is offered on the grounds that the counterpart can be expected to take an interest in it, perhaps phrased in sentences beginning like "Did you know that...?" or "Have you heard...?". It appears that the tip-giving that occurs via email only concerns information that has been encountered on the web or from mailing lists. The respondents do not appear to offer pointers to information that does not have any connection to the information system that it is being delivered on.

Might there be reason to speak of this as a 'collocation' of medium and content (this discussion is not so much a finding as it is my interpretation of # 7:19)? As a rule of thumb, to understand how messages are spread by personal recommendation such a 'collocation-rule' would suggest that 'what has been told face-to-face is most likely to be offered to others in face-to-face exchanges.' And 'what has been encountered on the Internet (i.e. WWW or email) is most likely to be offered to others by means of the Internet.' A more general, although tentative, statement of the collocation-rule state that: 'Information that is found or encountered on a given information system or information service, and that is passed on, referred to, or talked about, is likely to be so by using the very same information system or information service, or the most adjacent and convenient information system or information service.

In theory, resources that are required in order to monitor or unfold are time and attention (among others). Both of which are scarce resources as time is limited and attention only can be directed on one thing at any given point in time. Thus it is not possible to monitor the mass of sources that would be necessary in order to strike upon all the information that a respondent would consider being relevant. A respondent only has so much time at her or his disposal to search for relevant information and to take part in it, and in the mass of available information there are only a few golden pieces that made it worth their while. However, as they are doing this they encounter information that they
may know or believe to be relevant to someone that they know, based on their knowledge of their interests. What’s garbage to the respondent is golden to someone else and sometimes they know which is which. While they are plowing through the mass they can be certain that there are others plowing through other masses, looking for their golden pieces and in the process encountering information that are golden to the respondent. When more people practice generosity with information by readily giving it away, monitoring is distributed to more people and everybody’s limited resources of time and attention actually increase. This is obviously taking place on different levels already: Mass-media offer information that is expected to be relevant for a mass-audience; More specialized information is offered in magazines, journals, web-sites, and news-groups to particular communities of people sharing the same interests; Even individualized information is systematically shared in personal exchanges, making the personal network a valuable source to information. The new addition of email is that the personal network of emailers participate in the filtering of information that has individual relevance, not only the generic relevance of public issues, or special relevance of a community of peers, but personal and timely relevance. As emailing and other forms of digitized exchanges are further diffused throughout society, this practice could possibly increase and evolve.

# 7:20 Some information systems and -services mainly provide personal information, and their tacit guarantee of relevance gives them priority over systems and services that do not.

It seems there is an order of priority between different information systems. As personal communication implies relevance to the receiver (Greisdorf 2000), personal information systems (e.g. face-to-face exchanges, much of the physical mail and email, telephone, fax, cellphone and pagers) will be given priority over non-personal systems (e.g. newspapers, books, television and radio) when there is an option to choose between them. Intermediary media’s (e.g. the WWW, books, magazines and public cultural performances) may be placed somewhere in between. A more precise analysis of priority needs to consider particular information services rather than the actual systems. A taxonomy of relevance might look something like Figure 7:1, where relevance level 1 is of the highest relevance:
Among the most pervasive monitor-activities of the respondents was to go through the mail and check the electronic mailbox. Both these sources can be said to be of high concern for them since a letter or another personal message is likely to relate to a personal project. Other sources monitored, which are mainly mass media sources, have less of a presupposed relevance but some sources are found to be more relevant than others as they concern daily events (e.g. news).

This concludes the findings from the information-activities part of the model and they will be referred to in chapters 8 and 9. I turn now to the final chapter where I present empirical data; Outcomes & Changes.
8 Outcomes & Changes

8.1 Introduction

So far, the empirical descriptions have been studied with manifestations of the process as they have related specifically to the Environment, to the ICT-Setting and to the Information-Activities. In these descriptions allusions have been made as to how assessments are made and some of the outcomes they have led to. Here is a more concerted effort to bind together the process involving environment, technology and activity by offering data that is less fragmentary and of such quality of dimension that it is possible to discuss in terms of all parts of the model.

While chapters 5 through 7 are written with the ambition to be true to the data and only offer analysis in their summary sections, this final section of presenting data does provide careful analysis as the empirical material from the diaries is presented with inferences of problems and projects.

In section 8.2 each separate category of information-activity is discussed in terms of which outcomes they tend to deliver and to which problematic situation in a project they pertain. In section 8.3, outcomes are discussed in terms of how they are outcomes of projects, rather than of separate information-activities. As projects involve several information-activities, here, such projects that have appeared throughout section 8.2 are discussed in concert. In section 8.4, it is briefly discussed how outcomes impinge on everyday life and make for a change of it in some more pregnant respect. Predictably so, outcomes of change-oriented projects take center stage. Finally, in section 8.5 a summary and short discussion of findings are offered.

8.2 Outcomes of Information-Activities: Transient Feelings, Thoughts and Actions

As the information-activities are described and related in chapter 7, features appear that present emotional and other outcomes as they
relate to each specific activity. Here, they are discussed again, ordered around each form of activity. Not all reports of information-activities are complete enough to allow for a comprehensive discussion on their outcomes, which is why not every single instance is repeated here. Whereas detailed reports about information giving behaviors, i.e. the activities dressing, instructing and publishing, are scarce, other categories of information-activities are more common among the respondents and reports are richer.

8.2.1 Search & Retrieve

Information-Activities such as searching for reference information (section 7.2), as they appear in this research, are responses to problematic situations as they appear in the course of everyday life (see Appendix 7, Table 8:1). In some of the events it is possible to attribute the problematic situation to a category of life-activities, e.g. the category of caring for others (see Table 4:1) as the problem domain for events of aiding children, resolving a domestic dispute, and getting medical information relating to the condition of a relative.

The respondents perceive of the outcomes in these cases as getting knowledge about something that they knew they lacked knowledge about (that’s why they searched for it), which is a cognitive outcome. But the outcomes are also emotional to the extent that it is not possible to know which is more important: acquiring a fact or resolving an emotional dis-equilibrium. To repeat once again the example where Agneta and her son are looking up a fact, first in an encyclopedia, then on the Internet; it is known that the answer was not complete enough to be considered ‘correct’ but it resolved the dispute that initiated it. The consequential event in that case, was not the acquisition of knowledge as such, but the resolution of the family dispute, which makes the project to which it pertains understandable as one of ‘maintenance of social relations’. Significant social outcomes are also present in the other events reported here, which could be regarded as surprising given that the activities are quite straightforward questions & answers, which imply that the more significant outcomes should be cognitive and perhaps more oriented to the self. But the importance of social issues leads to the belief that the activity of search & Retrieve for reference information, in these cases, are done out of social concerns and are carried out in response to problems in a project of maintenance of
social relationships, which relates to life-activities of caring for others and caring for oneself (see also # 7:15).

Another example of an event with a predominantly social outcome is Kent’s looking up an English word in a dictionary. Taken at face value, an event of looking up a word can be the response to a problem that arose in any life-activity and pertains to any project. In order to know which category of life-activities it is attributable to, it is necessary to know how it became a problematic situation in the first place. As he relates the incident, he was communicating in English on his ham radio. English is not his primary language but he enjoys speaking it and the opportunity to do so is one of the reasons why he enjoys the radio. Kent intended to communicate to his counterpart in Canada that he lives on a small farm but has another job as his primary occupation. He worded it, with a direct translation of a Swedish idiom, as being a "moonshine farmer" (Kent, 88), whereupon the counterpart broke out in a laugh. Before they could resolve the misunderstanding, static made them lose contact and Kent was left, feeling misunderstood and laughed at. He later looked up 'moonshine' in a dictionary of English idioms and the reference to illegal distillation of alcohol made him immediately get the unintentional joke. Knowing this, the event becomes understandable as a problem that arose in the pursuit of Kent’s hobby, which makes it a reflection & recreation form of life-activity. (The fact that the activity that forgoes the search & retrieve activity is an Exchange activity is not without importance either.) Among the outcomes of the search & retrieve activity is not only a resolution of the problem, i.e. cognitive understanding of why he was laughed at, but also a positive sense of release and companionship from being able to laugh with the Canadian. ‘Getting’ the unintentional joke, is a social support-outcome, although somewhat late.

These examples do not mean to say that the most important outcomes of search & retrieve activities generally are social, but that sometimes they apparently are. Instances of performing the activity for egoistic purposes, with outcomes that are predominantly self-oriented, are also reported, although not in such rich detail. Karl, for instance, speaks in general terms about his sudden surges of curiosity that often impel him to look things up. Perhaps such examples are more difficult to remember and relate than examples that already imply a social relation?

Leaving now the area of reference information and looking to search & retrieve market information. A difference is that they are not so
much part of problematic instances relating to singular events and life-activities but take place in projects that involve several life-, and information-activities. In Table 8:2 (Appendix 7) some of the instances from section 7.2 are summarized. In the example of Agneta, the problem that induced her search on the web was that she needed to finance the purchase of an apartment. While this may be a ‘normal’ problem, it is not ‘normal’ to each and every respondent. When it appears it is a problem, which together with other activities relating to several categories of life-activities, make for a project with a beginning and discernible end. Eva’s example is from a search for a spring-program at a restaurant she was going to visit for a salsa dance party. Her search for the restaurant was not successful and instead she ended up at the website of a singer in a dance band. Being at work while she did this, and being positively repulsed by the music the artist is connected with, she found the searching experience to be ”embarrassing” (Eva, 190), as well as unsuccessful. The outcome she had wished for would have provided her with behavioral orientation, but instead she relates it as a risk of being associated with something she does not like.

There seem to be a few differences in outcomes between search & retrieve for reference and for market information. One difference is whereas reference information relates to a problem of a life-activity, market information is related to projects to a greater extent (see also # 7:2). Moreover, these projects appear to be change-, rather than pursuit-projects, as the objective is to acquire a commodity or a service that is not already at hand. Another difference is that whereas reference information is geared towards managing social relationships, market information is geared towards providing a basis to act upon. The consequential events of market information are surely of significance for others other than the respondent, such as other members of the household, but the consequence, the main leverage, is not on social relations per se but on the acquisition of guidance to act with physical reality and acquire a commodity or a service. A third difference is that activities relating to reference information are resolved at the moment of the activity, while market information is rather in a process to resolution, where the activities related here provide added orientation in the area where a decision eventually will be made. The actual decision, if it is ever made, will be influenced by these search-activities but it will be impossible in most cases to describe how each separate information-activity matters to the final decision. (Knowing the final sum on a
receipt from a grocery store does not mean that each item on the shopping receipt can be deduced from it.)

**8.2.2 Browse**

Some outcomes of browsing are already suggested at the outset as they are implicit to the definition of browsing: 'browsing is undertaken as a strategy to maybe find something of value, and surely getting familiar with the environment' (see sub-section 4.4.1). With such a definition, expected outcomes are serendipitous encounters with valuable information and familiarization with the environment browsed. The data supports these hypotheses, whether the 'environment' happens to be a web-domain, a book, or what is broadcast on the TV at the moment (see section 8.4). As consequential events, these kinds of outcomes can either be regarded as general orientation or of a particular knowledge, which are both cognitive outcomes, although the emotional aspects of familiarization are important (see Appendix 7, Table 8:3). There are also other consequential events in the reports from the respondents. Agneta and Johan report that they are frequently sidetracked when they are using the WWW, and more seasoned users of the Internet have been shown to browse more efficiently than those respondents that are less experienced with it. Regardless of the focus and approach to the browsing, whether they are 'browsing with a purpose' or just 'looking around', all respondents report some instances when they do it and they all report that they find some pleasure in it, which is a positive emotional outcome. Those less experienced look to appreciate the emotional release, while the more experienced appreciate the broadening of the mind they get from browsing. When browsing to look around, the emotional satisfaction from being engaged in a valuable pursuit is thus more predominant than the secondary cognitive outcome in the chance of striking upon valuable information. When browsing with a purpose as a searching strategy, the situation is the opposite.

As the respondents browse the WWW, familiarizing themselves with it and broadening their understanding of what the WWW 'is' and how they can make sense of it, they are initially struck by how 'vast' it is and how poor the 'order' of it is, properties that are inherent to the WWW. This seems to contribute to stress on the respondents, both as a push-stress (see section 7.4) stemming from the need to assess the relevance of large amounts of information, and pull-stress in that they
feel they need to follow everything that is of relevance to them. These are both negative emotional outcomes. Comparing this with Kuhlthau’s stages of searching for information, an initial stage of unfocused searching for information is accompanied by a general feeling of confusion and disorientation (see sub-section 4.4.2, and # 7:10). As the browsing becomes more focused, leaving the frustration-filled initiation/exploration stage, one could expect that the perception of stress on the respondents would be lower as a goal becomes clearer, a task is formulated and one is 'browsing with a purpose.' There is also another source to negative emotional outcomes of browsing the web and zapping on the TV. While the individual that is engaged in the browsing appreciates the pursuit, other individuals may be quite disturbed by it as they do not share the appreciation of it as valuable, but only experience the different aspects of exclusion. The browser is excluded from participating in other activities; the TV or computer is excluded from other use; and the second party is excluded from the user’s attention.

As a strategy to manage the encountered information that appears to be of value to the respondent, the respondents frequently bookmark, print, and download stuff to deal with later. Often their collection of bookmarks and downloads are stored without organization, never to be returned to again. Printouts also need to be stored somewhere, but the physical palpability of the prints is a reminder that they have things to read. In terms of consequential events, these are action outcomes, and although they may be the result of a strategy to manage stress (in some instances), they may further add to the appreciation of stress (in any instance) that there are now postponed assessments of relevance still to be made.

In terms of how the browsing activity relates to a life-activity, each separate instance needs to be judged on its own merits. Purposeful browsing may relate to any life-activity depending on the intentions of the search. Discovering browsing or 'looking around', both on the WWW and zapping among TV-channels, often seems to be a combination of an enjoyable pastime, attributable to the Reflection & recreation life-activity, and a general interest in making personal sense of the WWW, rather like a “Making Sense of the WWW-Project.” Or so it would seem. It may be better described as a project of making sense of the information-use environment, whether it is the WWW, the television-broadcast at the moment, a magazine that one is confronted with, or any other information system that is part of ones ICT-setting. To be
able to choose among options one needs to familiarize oneself with the available options and browsing, as looking around may be an information-activity that responds to that project.

### 8.2.3 Monitoring

Monitoring activities can roughly be divided into habitual and opportunistic monitoring. Habitual monitoring is connected to time, e.g. morning, work time, evening and weekend. It is also connected to place, e.g. work, the car, home or more particular, the bedroom or kitchen. Other structuring factors are the life-activities and the social company that are connected to the place and time. Much like the case of Browsing activities, each monitoring activity needs to be considered as situated in order to understand to which life-activity it pertains. There are, however, habitual monitoring reports in the diaries that the respondents have in common, with predictable life-activities to which they are attributable, and with predictable outcomes, e.g. waking up from the radio-alarm, skimming the morning paper during breakfast and watching the news on TV at night (see Appendix 7, Table 8:4). As activities, these instances could either be understood as belonging to specific life-activities, or, as the different monitoring activities span several life-activities, as a generic project of ‘Staying Up-to-date’ (see also # 7:10).

In terms of outcomes, I argue that a positive emotional outcome is the most significant. The reason being that monitoring confirms and reaffirms that the world still looks the same, and that the news is within the realm of what makes sense. It also reestablishes the behavior of the respondent as the habitual behavior of monitoring is coupled with other habitual behavior where the one constitutes the other and confirms the normality, security and familiarity of the situation. A sense that the order of everyday life is upset may stem from disturbances of life-activities or information-activities alike, such as the monitoring activity. A highly procedural monitoring bordering to the compulsive may even be difficult to distinguish as either a life-activity, where the important act is to physically manipulate the paper and its pages, or as an information-activity, where the important act is to appreciate the potential information. It is not straightforward, which is more important in such an example: to ‘do’ as one always does, or to get informed. Monitoring also functions as a companion at times, either the only one available or the preferred companion as it offers a moment of peace.
and quiet when the person who is monitoring is excluded from other activities and the company of others. As a valued pastime monitoring may also bring a sense of release. Putting these as the most significant outcomes is because these are the surest outcomes of any monitoring activity. The monitoring activity is intentional. The respondents makes choices of what sources to monitor and when, and their reports of how valued it is as an activity speaks against the likelihood that they would engage in habitual monitoring if the outcome would be emotionally disturbing or neutral.

In additions to being intentional, monitoring is also incidental in that it allows valued information to be encountered. Second in rank are, therefore, potential cognitive outcomes in the guise of encountered information. This is a less salient outcome since there is no guarantee that there actually will be anything of interest in the monitored source.

A third outcome is one of social outreach. As was discussed in section 7.4, the respondents assess the relevance of information they encounter not only as a matter of personal concern but also whether it is of concern to someone else, and then in some cases by communicating it to that person by forwarding messages. Aside from providing the basis for communication, monitoring also leads to making one aware of public affairs. Taking part in news can be regarded as a civil participation even if one is not actively contributing to a debate. Some respondents mentions how it is important to share the same context as their work mates, for instance in order to follow a discussion.

**8.2.4 Unfolding**

A seek-, browse- or monitor activity, all of which are behaviors to approach information, are often followed by an unfolding activity that is the actual taking part in the information that has been approached and deemed relevant enough to take part in more thoroughly. As the respondents often volunteer in their reports that they 'want a lot of information,' they value the unfolding more than browsing and monitoring, which are considered, on the one hand, to be superficial, and on the other to be instrumental in finding valued information. This makes for the paradox of unfolding preference (see # 7:12): Reading books, preferably classics, and watching good and useful things on television instead of being a 'couch potato,' are of high value. Alas, unfolding takes time and frequently has to yield for all the monitoring to be done and other everyday activities of spending time with family and friends.
Not being able to unfold as much as one would like, is a negative emotional outcome related to stress.

As an information-activity, unfolding implies a very private and personal act of taking in text, images and sounds and making sense of it. In the reports of the respondents there is, however, a strong presence of social features in unfolding activities. Watching TV and reading books are sometimes done together with other members of the household and the shared social context looks in those instances to be the valued outcome. But mostly unfolding is a solitary activity that sometimes even excludes the possibility for social participation, such as when reading in a paper, a book, on the WWW or when listening to music. The social aspect can thus be either positive or negative depending on the information system and the unfolding event.

The most predominant outcomes, though, are emotional. All respondents appreciate the television and the VCR for entertainment. Most reports of watching TV is on how they use it to empty their minds and relax, and their enjoying the fact that they don’t have to perform anything on their own accord. The TV is used consciously to get this release, sometimes together with other members of the household. Lacking the company of others, the TV is sometimes used as substitute company, which is also a positive emotional outcome. There are but few reports of negative emotional outcomes from watching TV. Excessive watching leaves some with a feeling of regret, wishing they had done something more useful instead. It also happens that regular watching excludes activities that other members of the household value differently. As has been shown, Kent has taken an active stance not to overdose on mind numbing relaxation but use the TV moderately for release and as a means to get information (Kent, 222).

Besides providing entertainment, the TV is also used to experience interesting and engaging topics that are perceived as informing. The opportunity to encounter information is a cognitive outcome, and although the respondents report preferring programs that provide this outcome, it represents only a small part of their overall watching time.

In terms of what life-activity the television watching pertains to, the category of reflection & recreation lists it as one of its sub-activities. Depending on the situation, however, it is possible to infer it to the activity of caring for others, e.g. when one is watching together with someone else for the benefit of the company. The watching can also be part of a project of ”staying up-to-date” or in the pursuit of a particular subject of interest, e.g. sports, cooking, popular science or anything
else. This also goes for the unfolding of all other information systems. Like the monitoring activity, some unfolding is habitually connected to a time and a place. Unfolding a few articles in the morning paper during breakfast, watching television in the evening after putting the children to bed, and reading a few pages in a book before going to sleep are common among several respondents.

Common among the respondents' unfolding of the different information systems is that they are used primarily for entertainment and secondly as an opportunity to encounter information. Unfolding the morning paper stands out as providing encounters with information as the more important factor. Participating in church services have, in the reports, provided social participation as the most significant consequential event.

Action outcomes are a common result of unfolding on the WWW as the respondents report downloading materials to read off-line and printing them to read later. Unfolding books produce, in a sense, 'unfolded books,' which perhaps could be regarded as an action outcome. Eva reported on how she never stopped reading a book until it was finished, and that she never re-reads any books. Still she also liked to own the books and to have them in her shelves. In this sense, her reading a book produces something like a trophy, a conquered book. When one has read a book there is something to show for it: the read book. It can be pointed to and talked about in a way that a program on television that has been unfolded cannot. Might this be a reason as to why 'all' book reading is considered more valuable than 'any' TV watching?

The matter of interest and measures of relevance is salient when it comes to unfolding. Unfolding is a measure of taste in this respect, but there are also distinctions to be made between different unfolding activities. While one may at one time unfold a mind numbing TV-sitcom or a disengaging book or article, one may at another time unfold a newspaper editorial or a TV-broadcasted political debate. In the first instance the problem may be a need for release, and in the others it is more a matter of pursuing something deemed to be interesting. The different instances are associated with information with different traits (see also # 7:13). The passive unfolding is associated with an information format with features of release, although elements of 'wisdom' in a social aspect may trickle through, i.e. people are supposedly learning from watching soaps. Active unfolding, on the other hand, has features of learning and perhaps even wisdom.
8.2.5 Exchange

The most frequent exchanges that the respondents report are with other household members and friends and family outside of the household (see Tables 7:1 and 7:2). While all everyday life exchanges pertain to some problematic situation that prompts the exchange, all data is not on such level of detail that each instance of communication can be discussed in terms of its content and to, which problem, and thus which life-activity, it pertains. It is clear, though, that exchange activities with one and the same person, as they appear over the diary week, entail several problematic situations pertaining to several life-activities (see Appendix 7, Table 8:5). For instance, Eva’s exchanges with her daughters are not only a matter of caring for others, but centers on household care, reflection & recreation, transportation and procuring and preparing food. Eva’s exchange activities with her daughters are rather a continuous project of coordinating life-activities that they share, rather than separate problematic events. The project could be labeled ‘Childrearing,’ or to emphasize the mutual relation and the giving and taking in their relation, ‘Social Maintenance’ is a better label. Each exchange instance produces distinguishable outcomes, but as they are not discussed in detail, the particular outcomes are less interesting. The outcome of the project is in this sense more relevant, and the consequential event could generally be labeled as a continuous maintenance of their particular social relation. This example of exchanges with a member of the household is representative to all other respondents’ exchanges with household members and with partners that are not cohabitating. The problems and the consequential events are of course different if the other party is a spouse or a child, but the maintenance of social relationships is still the content of the project.

Much as passive unfolding of a television program may or may not provide encounters with information, but at least offer a moment of release, routine exchanges may or may not provide encounters with information that relate to a specific problem but at least offer to reestablish the social relationship. With that said, exchanges are sometimes not so routine but do relate to a specific problem. Whereas generic projects such as ‘maintenance of social relationships’ produce generic outcomes such as ‘reestablishing the social relationship’, more specific projects produce more specific outcomes. To give an example: As Agneta is pursuing her project of buying and moving to a new apartment, she speaks on the phone with her brother and tells him the good
news. The topic of the exchange concerns the move, although the exchange is also a general maintenance of social relationships. In order to deepen the understanding of such exchanges and understand it as something more than the quite trivial ‘maintenance of social relationships’, this and other exchanges can be discussed in terms of how they relate to a project (see section 8.4).

Exchanges with proximally close friends and family outside of the household is different as they do not share the environment and flow of everyday life with the respondent but still have an ongoing social relation that they pursue face to face and through different information systems. This category of exchanges covers the second largest group of exchanges within this study. The exchanges are mainly understood to reestablish social relationships and provide coordination of activities that they plan to share, especially relating to reflection & recreation life-activities when the exchange is a mutual entertainment and relaxation. But whereas advice, opinions, and support are exchanged that may relate to any and all categories of life-activities, rather than relating each instance of exchange to a problematic situation in any of those to life-activities, here too it is better described as a project of maintaining the overall social relationship.

The third group concerns exchanges with Acquaintances: People that are not traditionally regarded as friends as much as they are co-members of a shared context like work or some network of hobbyists. In the respondents’ reports there are instances of exchanges with colleagues in circumstances that are not strictly relating to work, such as parties, and instances of work related exchanges on evenings and weekends. The outcomes of these exchanges are less a matter of furthering a social relationship, offering serendipitous encounters with information, and more of coordinating work-activities and exchanging facts and instructs. The majority of exchange instances with acquaintances is from Sven’s exchanges on ICQ and chat with people that he has only met on the Internet. Regardless of whether he considers some of those people as friends, they are, in a more formal sense, members of a community. Outcomes of these exchanges are more like the outcomes with other kith and kin, except that there is no coordination of other shared activities. Exchanges on chat and ICQ may well develop into friendships and meetings in real life, but those coordinating exchanges are made by other information systems and the partner in exchange is likely to have been upgraded from acquaintance to remote.
The fourth group is exchanges with Functions. These exchanges are practically always relating to specific problems, e.g. casting a vote in an election, seeing a bank-clerk for information, requesting information from an authority, making reservations for a trip. There is no social relationship to maintain and the consequential event is, when successful, an effectuation that resolves the problem at hand.

The final and smallest group in frequency is with the Remotes: the physically distant family and friends. Such relations among the respondents are less frequent and fewer. The relationship is not as rich as that with more proximal friends and family. It is less often geared towards organizing shared activities, and when there is, it is before meeting them.

**8.2.6 Dressing**

Dressing activities do not appear a lot in the reports of the respondents (see Appendix 7, Table 8:6). From the little that does appear it is possible to see quite a few distinct outcomes. Karl writes a note for a parking attendant and a poem for a gift and Kent keeps a log file of his ham radio contacts. These examples are of a group of outcomes that are predominantly action oriented, as the result is a recording. What is dressed is intended to be stored as personal notes or to communicate something to someone else, making it an enlightening outcome for them.

Another group of dressing activities has a predominantly emotional outcome. Karl is telling his wife about a visit at the hospital "to get it off his chest", Maria writing long letters at some café and going out in the park to take pictures when she was feeling a bit blue are examples of dressing with the purpose to express an emotion or state of mind, providing emotional release as an outcome.

In these examples of dressing, except for the cases of Kent and Johan, there is also an outcome of social participation as the dressing is followed by exchange activities, where the dressed content is shared with others.

**8.2.7 Instructing**

The instructing activities are quite instrumental and emotionally disengaged. It is not to be confused with a learning situation, which is rather a matter of exchange. An instruct is a matter of making ones wishes or
intentions known. A general outcome is effectuation of the instruct and the relevance of the outcome depends on how well it matches expectations. On one end of a continuum the instructing activity is performed without the direct involvement of people other than the respondents, e.g. performing a search on an information system where the outcome is whatever search result the system pulls up. On the other end the activity is performed with people in an order-giving situation, and the outcome is whatever the other person performs in response to the order. In between, the respondents are casting votes, participating in competitions, shopping and taking care of the business of the household. While there is seldom any real social relation with a counterpart in instructing activities, social relationships within the household is still at play in this category.

Many instruct activities in everyday life are quite unproblematic. Shopping at the grocery store, drawing money from a money machine, making requests for stuff on the Internet that are gratis, voting and gambling are often made successfully with desired outcomes. There is no need to list such instances and it suffices to say that their outcomes are predominantly action oriented, and mildly emotional as successful instructs are in fact reaffirming and may offer some satisfaction. Sometimes, though, the expectations are not met, which produces emotional outcomes such as frustration and disappointment, and /or cognitive outcomes, such as confusion or problem understanding.

Another form of dysfunctional instruct is found in the socially contested instructing activity of making payments with credit cards on the Internet. Agneta and Leo are the only respondents that do not hesitate making individual payments on-line, although for quite different reasons. Agneta has not yet purchased anything online but is oblivious to any involved risks and would not hesitate doing it. Leo shops quite a lot on line, taking his chances knowing that the card-companies are liable in case of fraud. Kent and Lotta have used their cards for shopping, but hesitatingly and feeling "...a little anxious about it." (Kent, 271). They have done this when there have been few other alternatives, and although none of them report any fraud or other problems with the activities, the additional outcome of emotional distress prompts them to look for alternative methods of payment. The other respondents have not succumbed to using their cards for online payments. Either they pay cash on delivery, or have made instructions for payment separately. The reasons that they offer are in all cases quite the same. They do not know how the payment routine works, neither do they
know whether it is 'safe' or not, but they tend to believe it is 'not safe.' The only precision they offer to their distrust are stories about fraud and problems that they have read or heard about.

All except Agneta, Johan and Lotta use the Internet to pay bills and manage their bank accounts. Agneta prefers the more palpable manipulation of slips and envelopes. Johan and Lotta would not mind doing it, but Lotta is a little insecure about whether it is 'safe.' Ester is also somewhat insecure but uses it anyway. The outcomes are in this case still, but less, accompanied by an uneasy feeling of doubt. A few respondents report a great relief in using online accounts for managing their business. Maria ranks it to be the greatest utility of all her Internet use. Kent and Karl both report being happy not to have to deal with bills all at once every month but do it as the bills come in. Karl also started working his stock portfolio when he could do it online. This positive emotional outcome stands in stark contrast to activities of making payments with others than banks. One reason is that there are special security arrangements made when communicating with one's bank, but when making payments, the security of the communication is not known and understood by the users. While that appears to be an obvious reason, it is not necessarily the most important one.

8.2.8 Publishing

Publishing activities, like instructing activities, generally have effectuating results. When the publishing is completed, something has been published. Of what little publishing activities appear in this research, setting up websites is the major activity. Ester and Kent are the only ones with active personal websites. Ester has information about a house that she has for sale on the market, in addition to pictures and text that are more hobby-related. Kent posts personal information on his home page for the benefit of the ham radio community of which he is a member. In both these cases, the publishing activity relates directly to life-activities. In Ester's case the problem is one of household management, i.e. taking care of business relating to owning and caring for property. Outcomes besides actually having the information posted has yet to appear, as she has not sold the house at the time of this research. It is, however, a resource that she has this information to which she can direct interested buyers. Kent too is advertising on his website as he has an antenna for sale. His home page has generated a thin stream of
email contacts with other ham radio enthusiasts. Outcomes are in this sense physical, to the extent that a website is stored.

On another level one can see other kinds of outcomes of making, posting and keeping a personal website. These outcomes are cognitive by the understanding and learning it takes to produce the website. With personal experience of making a website, one may better understand something of the WWW in general. It may also provide a positive emotional outcome from the satisfaction of having been able to produce a website. These are not pure speculations as evidence of such outcomes appear in reports on how other respondents reason about websites. Agneta’s son, and Johan, would both like to make a website without quite knowing what to put on it and with no intended utility with it. Leo made such a ‘useless’ website a few years ago, not quite knowing how to find it any more. Karl and Eva have both made web-pages at work, but have no intention of making personal websites. The only ones without experience of making web pages and without any interest in doing so, are Maria and Lotta, who consider websites as something for children and a waste of time.

It seems that making a personal website is something of a steppingstone to becoming a proficient WWW user; a phase one enters with gusto and leaves as ‘simple’ after a while, much like the phase of undirected browsing on the web. The life-activity it relates to is Reflection & recreation as a problem, or a generic project of making sense of the WWW. Only if the publishing activity connects to some other project or problematic situation in a life-activity (such as Kent and Ester found), is there any extended utility with the website.

8.3 Outcomes of Projects: Everyday Life in the Making

The concept of ‘projects’ has been defined in section 4.2 as an objective of a respondent, that is possible to label, that constitutes a domain where the carrying out of a (perhaps vague) plan imparts several problematic situations. These projects appear as several activities that are related to each other but scattered in the chain of events that make up everyday life.

This means that a set of several information-activities that relate to one and the same objective is to be considered a project. Projects are also suggested to have different orientations where a change-project
aims at managing transitions in life, and a pursuit-project is more part of the order of everyday life. It is also argued in section 4.4, that change-projects are likely to present immediate information needs, require a certain level of attention to the activity and some conscious strategy, whereas pursuit-projects imply deferred information needs and minimally conscious practices in the goings about of everyday life.

There are five individual pursuit oriented projects that have been identified from the diaries and reported in the foregoing section. Of those, three are reported as common to all: Social Maintenance, Making Sense of the Information-Use Environment, and Staying Up-to-date. The other two are specific projects pursued by individual respondents: Karl, Sick Mother, and Kent, Ham radio. I begin to discuss the outcomes of the individual projects.

8.3.1 Specific Pursuit-Projects

It was mentioned already in section 6.2 that Karl’s mother suddenly took ill and Karl went to visit her at a hospital in another city during the diary week. Information-Activities that related to this problematic situation in his diary appeared mainly as 13 Exchange-activities, of which only two was actually with his mother and the others were with his brother, representatives at the hospital, and people that were instrumental for him to make the trip to the hospital. The project also related dress-, unfold-, and instruct activities. Disregarding the outcomes of the individual information-activities in terms of thoughts, feelings and actions, the outcomes can be considered at face value in how the activities are reported in the diary. The problematic situation made Karl communicate with his mother and brother among others. It made him make reservations for a flight and a rental car and make a physical visit to the hospital. It made him spend a night with his brother and his family, and they got time to socialize and view a family video together. Another outcome that reasonably can be inferred from the project was managing his concern for his mother, which also was present in the diary, and to be at hand for her in a time of worry. Beyond this, outcomes become speculative. As a project, it was not initiated by Karl, but was, for him, a natural response to a problematic situation in his relation with his mother. As such, the activities furthered a project that was already present and, which continued after Karl came back to Bigtown.
The project that Kent displayed in his diary is quite different from that of Karl, as it is one that is initiated by him in response to a strong personal interest. It appears only twice in his diary: Early one morning he is using his Ham radio and has exchanges with "Someone in Wisconsin" (Kent, Diary). And one evening he is hosting a monthly meeting for members of a ham radio club on his small farm. It is possible to see some preparations for the get-together as Kent is arranging garden furniture and mowing his lawn on the evenings before the meeting. Aside from the outcomes at face value—using his Ham radio and hosting the meeting—what remains are the memories of yet another use of the radio, as an entry to the database, and the hosting of yet another meeting: His Ham radio project has been pursued.

The above reports are only from projects as they appear in the diaries. In interviews there are several other projects discernable, as well as there are other events and activities that are anecdotally reported and that related to the project in the diaries.

From both of the above examples it has not been made clear how they relate to projects of life-activities. It may already seem obvious that Karl’s project easily can be attributable to a generic project of caring-for-others, and Kent’s to reflection & recreation. This is a justifiable observation that I, however, do not maintain to be the most relevant description of their respective projects. I develop this a little further in the following section, and then again in more general terms in section 8.5 where I will clarify my view of the relationship between projects and activities.

As projects appear with activities scattered over the course of a diary week, it seems that the only significant outcomes of pursuit-projects that appeared in the diaries are their general addition to the everyday life of the respondent. Such projects are not very dramatic, but of course, are important to the individual, and they reveal something about the respondent and the make up of their everyday life.

8.3.2 Are there Generic Pursuit-Projects?

There are three pursuit-projects that all respondents were shown to have engaged in and it seems to imply that they are generic projects of information-activities by being domains of problematic situations that are common for all, much like the seven life-activities (section 4.2) are generic projects in terms of corporeal activities. Or so it would seem. There are several other possible explanations for these projects rather
than as generic, e.g. 1) they are coincidences, which one can make a very strong case for in a study with only ten respondents. 2) The labeling of the projects is capricious and conceals more valid objectives. 3) It is a misrepresentation of existing explanations, such as it would be if any of the three is already explainable as one of the seven life-activities.

'Social Maintenance' appears to be a project to which the social concerns that induce some search & retrieve activities pertain. It also appears to be the project to which much of the exchange activities relate (and in one instance to an exchange-related dress activity). The reasoning behind the choice of label has been that whereas each specific activity are induced by unique problems, the objective with the activity, in addition to resolving the immediate problem, appears to be to further an already established social relationship. An important caveat is that whereas almost all exchange-activities have been described as relating to a Social Maintenance-project, it needs to be said that it may be part of those exchange-activities, and that other projects may well have another part of them. This does not belittle the validity of Social Maintenance as a generic project, but it should be understood that it is not the only one. Much like the outcomes from the individual projects in the section above should be taken at face value, so too should the outcomes of Social Maintenance. The project of 'maintenance of social relations' should not, in my view, be mistaken as synonymous with the life-activity caring-for-others, as that implies a rather one-dimensional relation. In 'maintenance of social relationships' there are aspects of giving and taking, and of emotional values that would make it comparable to a combination of caring-for-others, caring-for-self, and reflection & recreation. The importance of the sociality in 'maintenance of social relations', and its absence in caring-for-others and caring-for-self, makes it reasonable as a stand-alone project.

'Making Sense of the Information-Use Environment' appears to be a project that covers much of the browsing-with-a-purpose activity. From the reports of the respondents it appears that such browsing sessions often take a starting point in links that they receive in email or find in papers, and that they value the pursuit from the orientation it provides. It also appears that it is mainly the less experienced users of the WWW that engage in this activity but that it is common to all to zap on the TV. This familiarization aspect of the pursuit implies something of a learning outcome, but I do not wish to venture into such a speculation. Again, I concede that the outcome should only be taken at
face value from the instance that it occurs. Other outcomes are not available for inclusion here.

The make up of the project of ‘Staying Up-to-date’ may be what guides the individual as to what topics and sources to monitor. While each instance of monitoring relates to some place and time and often to problematic situations embedded in the place and time, they can deserve to be understood as instances of a project of ‘Staying Up-to-date.’ An outcome of the project that is more general than the outcomes of each separate monitoring instance is that the individual is kept up-to-date in choice contexts. Considering the apparent importance of being informed; the efforts of making assessments of what to unfold; the time it takes to unfold; and the cost of the sources, staying abreast could be understood as the project that are designed to satisfice the paradox of unfolding preference (see section 7.4 Interest and Relevance and sub-section 8.2.4 Unfold).

These three projects appear to be generic and are placed rather in parallel to the seven life-activities, which can equally be seen as generic projects. The specific pursuit-oriented projects that were mentioned in the two examples in the previous section are thus to be understood as being on another ‘level’ than the generic projects. Again, this is returned to in section 8.5, but first remains to sort out ‘change’.

8.4 Change: Shift for Everyday Life

A description of change becomes a description of the full process of engaging in information-activities; with relevant underlying problems or project as it pertains to the environment; the utilization of some information system and engagement in a form of information-activity with associated assessments that are made; churning out a shift in the everyday life of the individual. It is in the nature of this research that it is not possible to simply ask the respondent of any recent changes in their lives. The means to acquire such data is to grab hold of such instances as they appear in reports of daily events or of previous events and to unwind what relates to the instance in terms of how it relates to environment, information system, the activity and what role it subsequently had in altering any states of the respondents’ realities.

The outcomes of pursuit-oriented projects were discussed in the previous section, and while there certainly are outcomes of such projects, and of the information-activities that are made use of in those pursuits, it does not make for any pregnant changes in the sense that is
intended here. An obvious change in the state of reality is to acquire something new to the household. This leaves a permanent mark from the activity, and since there has been much data accumulated on acquisitions of computers and Internet connections, such in-model changes would be handy to offer although there are very few examples present in the diaries.

From the diaries there are six comprehensive change-oriented projects reported in section 8.3. All six appeared in Search & Retrieve activities as the respondents were looking for market information on objects and services to purchase. Here, I limit the discussion to the two projects that have the richest reports, Agneta’s project, Moving, and Johan’s project, The Pool.

Agneta’s moving Project started well before the diary week. As it appeared over the week, the project was drawing to its conclusion. She searches the web on two occasions for information about loans and insurance and she had five exchanges concerning the move, including meetings to terminate the old lease and to sign the contract for the new apartment. Until the move actually takes place, five weeks after the last interview, the outcome is mainly a pursuit of the overall objective to complete the move. As the move has taken place, the change is there and the project is reaching closure. It is reasonable to assume that the project will linger on for a while, as many associated activities are not concluded by the move, e.g. organizing the new home to a ‘finished’ state, and starting to consider the project as being closed. Outcomes of the specific information-activities have already been discussed, and there is no need to dwell upon them any further. Neither is it recommendable to make contra-factual history writing and guess how the project would have developed would Agneta have engaged in other information-activities. Not even the respondents can know this, but Agneta guesses that if she would not have had access to the Internet, she would have asked people at work on how to go about things when one wants to take out a loan for an apartment, or walk unprepared in to the bank: "I would surely get a pile of brochures that I would have to plow through, like when you want to look at a vacation trip. I would have felt more insecure when I was there." (Agneta, 211). As the new home becomes part of a new established order, the change-project will gradually become a life-activity of household care.

Johan and his wife had a swimming pool installed in their backyard shortly before his diary week. The activities relating to the pool that were present over the week were primarily life-activities, as they were
adjusting the chlorine level in the pool water and playing in it with the kids. Johan reported on how the acquisition of the pool had taken place and the information-activities that preceded in the project that were now drawing to a close. Initially he thought a pool was just a dream his wife had, and even after browsing the web for information and requesting the catalogue, he did not really expect that they would be able to get a pool. Only when they got a second catalogue that they usually order clothes from for the kids, and struck upon a pool in it, did it really become feasible to get one. From what they had learned by the search & retrieve activity, they knew the price was right for that particular type of pool (Johan, 331). One can make two assertions from this. First, that it is not possible to know whether they would have bought the pool without the preparatory information. Second, that when they made the search & retrieve activity they did not encounter the offer that they eventually found in another catalogue. Now that the pool is installed and they are finishing organizing all the facilities that are part of its 'system', the objective is reached and the change-project is being concluded. The pool has become part of a new established order, and the new order imparts new chores in their everyday life as the pool needs to be maintained and thus it can be understood as either a new pursuit-project, or as part of the life-activity of household care.

8.5 Summary & Findings

In this chapter I have reported the outcomes of each of the eight forms of information-activities. Several separate information-activities are also bundled together by a common objective, which is framed as projects of certain sorts. And I have reported also on outcomes of different forms of such projects. Some of those projects are oriented to make for a change in the everyday life of a respondent and these have also been reported and discussed. From these reports, a few findings may be drawn.

# 8:1 'Maintenance of social relations,' 'making sense of the IUE,' and 'staying up-to-date,' can be understood as generic projects with pertinent problematic situations that incite information-activities in a process to resolution. These generic projects are additions to the seven life-activities.
Up to this point it has not been made clear how the different forms of projects relate to each other. It appears, though, that several information-activities appear in bundles that relate to one and the same objective, making it a project. Furthermore three of these projects are common to several respondents, which imply that they are generic rather than specific to individuals and their particular make-up of everyday life. These three generic projects have been found not to be understood as one of the seven life-activities that also are generic projects, but rather are comprised of, or relate to, several such life-activities.

# 8:2 Specific pursuit- and change-oriented projects are not generic but owned by some individual or a community of individuals such as a household or a network of hobbyists. They consist of elements of generic projects in any number and combination.

Projects that appear to be gatherings of several information-activities with a common objective—and that are not generic, i.e. neither being life-activities, nor any of the three new suggestions for generic projects (see # 8:1)—can be described as specific projects that are oriented to change or the pursuit of certain objectives. These specific projects consist of elements of generic projects but are found on a level of greater detail. The projects can be owned by an individual or they can be a project common to a group of individuals. It is also conceivable that there are specific projects that are common to the greater part of a society. An individual will only relate to such a specific project in as much as they are committed to it, which can be deduced from their taking actions within it.

With this, all the empirical data has been presented and discussed. In the following chapter, the final one, I will offer a critical discussion of the methods that I have made use of; I will also relate this research to other ways of thinking than the ones I have related to throughout, 'more established ways' someone might say; I will also return to the purpose of this undertaking and bring together the many different strands that have been developed. As all this has been done, bringing closure to the model that I have developed, and to the empirical findings that have been offered by applying it, I will offer some further research that points to the way forward.
9 What’s the Use? Revisited

9.1 Introduction

At the outset of this project I asserted that the established ways of thinking about users and uses of information systems in everyday life are less than adequate. Thus far I have developed a model that suggests a new direction for this kind of socially motivated user research. To be sure, the model is not complete and conclusive. Nevertheless, I contend that it offers a way forward in user research in order to describe uses, and eventually usefulness (see section 1.3), and over the course of this concluding chapter I shall, by way of four sections, show how this is possible.

The first section (9.2) contains a self-critical review of the methods I have used, which led to the concepts and categories presented in chapter 4.

Following that is a section (9.3) where issues of information behavior in everyday life are brought to light by how my chosen approach is related to media and mass communications research.

In a third section (9.4) I return to the research questions from chapter 1 and discuss them in conjunction with the overall purpose.

In a fourth and concluding section (9.5) is a brief discussion about where all this is heading by suggestions for further empirical research.

9.2 A Self-Critical Review of the Method

9.2.1 Quality of Empirical Data

Diaries

People do not necessarily manifest a ‘natural’ behavior when there is a researcher present. There is always the chance that the respondent will adjust the answers to please the researcher, or to impress or obstruct. This ‘self-presentation’ (Silverman 1994:97) is particularly relevant in initial contacts when researcher and respondent are getting to know
each other. But as this study has included a prolonged involvement with the respondent through several meetings, and different means of collecting data through interviews and diaries, I believe it has made it increasingly difficult for a respondent to try and stage a behavior or manage the impression they give to the researcher. There is some empirical evidence to this. The example below relates a discussion about how the respondent where thinking as the diary was to be started:

Respondent: [When] I speak with you about a Ph.D. research I want to come across as a bit more organized than I really am. But maybe you don’t have any use for that, so I thought, “Never mind.” I don’t know what you have use of, but anyway I have not acted any different from who I am.

Interviewer: No? Well, I’m speaking with you because you are you.

Respondent: Exactly. But somewhere I thought that perhaps you wanted something that was ‘good’ as well.

Interviewer: Yes?

Respondent: Sure! It crossed my mind. Of course it did. Like “what’s his expectations from me?”

Interviewer: Yes?

Respondent: …and then when I was making out the diary I decided that “No, no. Forget that.” So you could see the shortcomings as well.

As this implies, I tend to consider the quality of the diaries as unproblematic in terms of the validity of the entries but somewhat of a problem in regard to the reliability of the entries, i.e. there is less reason to believe that entries in the diaries are ‘untrue’ than there is to believe that they really report all events that took place. But in this research that is not very important since the major difference between a diary that is kept in great detail and using due diligence and one with sketchy and brief jots is primarily a matter of the information-richness of the data. As will be discussed in sub-section 9.2.2, cases are not studied primarily for representativity, and differences found in cross-case analysis are much less telling than the similarities.
Interviews

In performing the interviews I have strived for a balance between keeping the interview going freely as the respondent develops an issue and establishes “intersubjective depth” (Silverman 1993:95), and making sure to cover all issues of the preset interview guide (appendices 3, 5, 6). A better account of the reliability of these accounts would be given if I had made observations in conjunction with the interviews and diaries. But it should not automatically be assumed that such data would be more neutral, unbiased and representative (Silverman 1993:106).

Concerning the truth-value of interview data, it is important to understand such accounts not as 'true or false' reports on reality, but rather as 'displays' of perspectives (Silverman 1993:107). As an example, take the accounts by the respondents on their activities—which I subsequently have categorized as information-activities. Whether the respondents exaggerate or downplay certain activities is not very important, as there are no quantitatively oriented conclusions drawn. What is more important in this study are their accounts of the circumstances of the activities—which are validated by accounts from their diaries—and the understanding that can be made from their accounts about how this or that activity relates to information systems, to other activities, and to their particular meanings and the assessments that are drawn from them. For one thing, such data is not available by any other means other than by asking them about it. But more important is that the truth-values of such reports need to be judged as "informed statement(s) by the person(s) whose experiences are under investigation" (Silverman 1993:107 quoting Brown and Sime 1981:160).

I consider these accounts as displays that elucidate not simply their assertions at face value, but also as what they consider to be morally adequate and desirable. As an example, take the following account by Eva about using credit cards for online purchases (For this analysis I follow Silverman’s analysis of ‘moral tales’ (1993:108-114):

I don’t use my card on the Net. At work I can send millions without a second thought, I know it’s working there, but at home you don’t know. Anyone can go in and watch. You could do that at work also but it takes... Then you would have to have a real purpose behind it. Here anyone can... Someone at the (soccer club) experienced how their computer was taken over by someone. There was a virus they
couldn’t manage and they just turned off their computer. Later (the telephone operator) called them and said they had been messing with other people’s accounts. So they reformatted the computer. (Eva, 253)

Notice how Eva claims not to use her credit card on the net. Should this apparently clear account be trusted? She also offers a tale of what might happen if she would use her credit card on the Internet, here as a specific account experienced by ‘someone’ at her daughter’s soccer club. In other examples on the same topic, respondents relate such accounts as common wisdom of how hackers can snatch your money on the Internet (section 6.3). Given Eva’s moral account, that using credit cards on the Internet is not desirable and wrong: If this is the moral practice that she considers to be desirable, her strong assertion of complying with it should probably not be taken at face value. In spite of what she says there might be exceptions to her non-use practice that she refrains to account for because it would be an anomaly in her moral practice, not only to this quote but also to other things she may have said (or may believe she could have said) that rests on this moral assertion. Her account is thus not assessed as a matter of being ‘true’ or ‘not true’ but as a ‘morally adequate’ account. Thus, the only conclusion that can be drawn from the tales about using credit cards on the Internet, by Eva as well as by other respondents taking a similar moral stance, is that it is a socially questioned practice (see # 7:16).

Much of the analytical work that has been done is not present in the text as clearly as exemplified above. One reason is that it would become much more extensive and another that it is not comprehensively registered on paper but performed continually as the research is written.69 It would be of benefit to this research, perhaps, if more details of the analytical work were included. Especially to further elucidate the stability of categories in the model by reporting on criteria for including certain activities or practices to certain categories. As it stands, that information is found partly in the definition of categories and

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69 This is of course not to say that the process of analysis and translation is not at all documented, which is important in order to maintain the stability of categories and translations of empirical data to analytical categories—as well as for overall reliability (Silverman 1993:146-149). In addition to the tapes and transcribed interviews, the work of coding and performing analysis is documented by nudist-transcripts, notes, matrixes and early versions of the final text, in a plastic file for every single category.
partly in the empirical material under the relevant category heading, but the translation from the one to the other is largely lacking.

I maintain, however, that it is possible to assess reliability and the stability in the use of categories. As mentioned in section 2.4, the use of Nudist aids the researcher in the coding process and any mistakes in the coding are likely to be disclosed as the research is written down. This depends of course on the laxness of the categories. And my main argument for reliability is that the model, as well as each individual category, is so detailed and extensive that it leaves a very limited degree of freedom to make capricious translations from practice to category without being disclosed by its incomprehensiveness. The congruence and transparency in the translations is thus available for all to assess, even if it is not spelled out.

9.2.2 Claims to Validity in Qualitative Case Study Research

What means are there to assess the worth of the findings in this research—of the model as well as of other empirical uniformities? At the end of the day, whether it is of good quality is a matter for the scientific community to assess—which is one of several criteria for validity in qualitative research.70 For case study research specifically, it is possible to make generalizations to theoretical propositions rather than to populations of which cases are a sample (Silverman 1993:22, 169; Platt 1988:12; Stake 1993:237). The matters of validity are thus two separate issues: the quality of theoretical propositions and the representativity of empirical findings.

Statistical Inference

To begin with the latter, ‘representativity’ is in this case not a question of statistical inference:

It is curious how often criticism of case studies as a basis for ‘generalization’ use ideas of representative sampling, appropriate only for estimating the prevalence of characteristics on a population, to

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70 For overviews on validity in qualitative research in general, see Larsson (1993) and Silverman (1993): for qualitative case study research in particular, see Platt (1988), Stake (1993), and Patton (1990).
dismiss their adequacy for making contributions to theoretical explanations. (Platt 1988:17)

Platt specifies by saying "the process of inference to general propositions is always 'logical' rather than 'statistical'. Statistical inference, which requires numbers of cases, is merely about 'the concomitant variation of two characteristics.'" (Platt 1988:18, drawing on Mitchell 1983:198-200). The means by which it is possible to infer findings to a larger population, according to Silverman, are three: 1) comparing the case to information about relevant aspects of the population of cases. 2) Making surveys on a random sample of cases. 3) Coordinating several ethnographic studies (Silverman 1993:160). Aside from of a cross-case analysis from the ten cases, and from drawing on theoretical findings that themselves are based on empirical research 71 (see chapter 3), I have not met with Silverman's requests for inference. Neither am I offering any findings that speak of the 'prevalence of characteristics of a population'.

**Quality of Analysis**

The findings that I have suggested are all theoretical propositions about the phenomenon, and their merit lies in the quality of the analysis rather than in the sampling of cases (Silverman 1993:169), or in the words of Stake:

> The purpose of the case study is not to represent the world but to represent the case. Criteria for conducting the kind of research that leads to valid generalizations need modification to fit the search for effective particularization. (Stake 1993:245)

The argument is that the generalization of single cases "should be couched in terms of ... theoretical propositions rather than to populations or universes" (Silverman 1993:22. Quoting Mitchell 1983). This is accomplished as "theoretical generalizeability arises as results from qualitative investigations exemplifies systemacy and patterns and that knowledge of these have applicability that goes beyond the studied cases" (Nissen 1993:27, drawing on Daun 1981:20). To paraphrase Silverman's quote of Bryman (1988:91) 'the issue of whether the

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71 Of cases that are, to be sure, not the 'same' as mine but that are, arguably, similar in the respect that they concern specific aspects of information behavior.
particular (individuals) studied is 'typical' is not the critical issue; what is important is whether the experiences of (users) are typical of the broad class of phenomena...to which the theory refers. Subsequent research would then focus on the validity of the propositions in other milieus.' (Silverman 1993:160). Platt goes even further and claims that:

Where complete uniformity (of nature) is not assumed, cases may still be treated (with more or less plausibility) as representative of the population to which findings are generalized. (Platt 1988:13)

Since nature in the social sciences is generally not considered to be uniform, this would be an applicable argument, although it is quite strong. She reviews a study of two cases that are in the same business but 'different in a variety of ways' and asserts a logic of diversity, rather than representativity, for making generalizations:

it... rests on the... argument that if such diverse cases can be encompassed by the same general propositions, it must follow that those with other (perhaps less extreme) values on the same variables are also covered by it” (Platt 1988:16).

And she goes on to say:

As soon as it is recognized that there are degrees of plausibility or confirmation, not just simple right or wrong, many difficulties vanish, since these are plainly affected by the character of the cases /.../ whatever is true of one instance should also be true of other instances of the same sort. /.../ The difficulty lies in establishing which instances are of the same sort in relevant respects. /.../ All a representative sample can add is some assurance that the cases studied have not omitted types occurring often enough to appear in it; the problem of defining the population from which the sample is to be drawn still remains. (Platt 1988:17-18)

The role for case study research in discussions of representativity is rather to establish what limits there are to generalizeability as; "a single case as negative example can establish limits to grand generalization" (Stake 1993:245). A single example can thus tilt any such claims. This sensitizes the researcher in the construction of theoretical assumptions and put high demands on the thoroughness required in the analysis. It also means that generalizations from differences between two cases are less credible than generalizations from one, since any two cases can differ in so many ways (Stake 1993:242).
Triangulation

I have found the use of diaries and interviews to be a very good combination of methods that complement each other rather than offer two separate modes of collecting data. Silverman warns about drawing too much from triangulation as a means to establish validity because it cannot be assumed that the use of several methods will produce a complete picture or 'true' account of an event (Silverman 1993:157). The problem is that it counterpoises different contexts and thereby ignores situational aspects (Silverman 1993:158). He does not mean, however, that triangulation is not of value to analysis, as several methods in combination help to make better sense of each other (Silverman 1993:158). Relating to this, Stake says that "acknowledging that no observation or interpretations are perfectly repeatable, triangulation serves...to clarify meaning by identifying different ways the phenomenon is being seen." (Stake 1993:241).

Respondent Validation

Another contested means to establishing credibility and plausibility of evidence is by respondent validation, i.e. refining the work by collecting the respondents' reactions on tentative results (Silverman 1993:159). The problem with this is that the text will be written for an audience of social scientists and that the analysis may not be compatible with the respondents' self-images, while no less valid. This is not to say that respondent validation would not further the analysis, but it is likely to do so merely by offering more data (Silverman 1993:159), and at some point it is necessary to stop. For these reasons I have not performed a respondent validation program.

9.2.3 A Critical Review of the Model and Other Findings

What is learned from this research that was not known before are two things. The first thing is a model of uses of information systems in everyday life, which on reasonable grounds can be expected to be descriptive of the phenomenon in other circumstances. The second thing is several hypotheses about the phenomenon of information behavior that are submitted for further investigation.
The strength of the model is that it is 'true' in all ten cases as there are no negative examples to a proposition (or it would not have been made). The model contains categories that are not present in all ten cases (e.g. dressing), or even in the diaries (e.g. publishing), but even in those instances there is no evidence in the cases that are lacking the category that would refute the proposed category. As I have, to some extent, repeated aspects of other studies and found their conception of categories to be consistent with what I have found, it also implies some level of reliability as far as those other empirical studies on which the given categories are built, are suitable to cross-case analysis. Even if this model is new, the majority of its ingredients are well known and it is easier to point to the few neologisms that I have suggested, than to the many established concepts. What is new with this model is that it offers a common framework for all these concepts, new and old, and treats, in concert, what previously has been treated separately.

The strength of the empirical findings (marked by a '#' in the summary sections of chapters 5-8) rests on a different foundation. Findings that extend prior empirical results are understood to be applicable on similar instances where the phenomenon is found. Findings that are new have a weaker empirical support and rest mainly on their plausibility, the comprehensiveness of the analysis, the completeness of the empirical evidence and the lack of negative examples in a cross-case analysis. The fact that the cases are sampled for variation as opposed to representativity works to further support the very last argument (Platt 1988:16).

To offer a specific example: # 7:3 is a finding that is new in the sense that it rests on this empirical material and is not supported by other empirical material, and that it is conceived as a consequence of making systematic use of the model. My analysis states that 'Search & retrieve-activities without social connotations, are conceivable (and indeed might be expected) and the reasons for their absence in this research may be that social actions are easier to remember and report in interview recollections as well as in diaries, than private activities that have not been verbalized.' This does not, however, speak against the findings of social connotations as a valid result.

But let's return to the model, which I believe to be the primary finding and result of this research. How well are the categories of the model working? Would another researcher have found the same categories by their definitions, if not by the choice of label? Perhaps a more convincing rendering of the model would have been accompli-
shed if I had made use of a categorization apparatus such as Sacks’s concept of ’membership categorization’ (Silverman 1993:80-89).

That apparatus suggests, among other things, that there are ’category bound activities’ (CBA), i.e. activities that are common-sensically associated with certain categories: The activity ’crying’ is associated with the category ’baby’, making ’crying’ a CBA. Sacks also suggests that activities may be predicted by the same logic, i.e. a ’baby’ can be predicted to ’cry’. The properties of this apparatus are already, I believe, to a large extent, represented in the model. The CBAs are suggested in the definitions of categories but it could probably have been made more clearly. Neither are the categories and their relations in the model all equally razor-sharp. Sacks suggest for this apparatus the use of ’membership categorization devices’ (MCD), which are categories that subsume other categories that are mutually exclusive.

By this reasoning, the MCD ’information-activities’ consist of the eight specific forms of activities that have been suggested. Are they mutually exclusive? Not perfectly. The information-activity ’dressing’ has the least empirical support of all, and no support in prior research. Don’t be mistaken, I do believe it is justified in part by the service it does to the few instances that are available, and in part by symmetry and logic. But the category is ambiguous in terms of how it is delineated to other categories of information giving. Sacks’s apparatus might be helpful in instances such as this, and, for example, in further elucidating the concept of ’projects’ and the relations between ’life-activities’ and ’information-activities’. But these are all specifics and I don’t expect that systematic use of his apparatus would make that much difference to the basics that have been suggested. To a large extent I believe these questions are a matter for further research, which I will discuss in section 9.5.

There are no definitive answers to the question of general applicability. The model, which is the primary result, is a system of theoretical propositions about information behavior in everyday life, and, as such, it is valid to the phenomenon as it exists beyond the examples of the ten cases. The model is argued to be congruent and strong, with categories that are stable and have good support in prior research as well as in new empirical data. The empirical uniformities, which are secondary results, basically draw their validity from the same arguments as the model, but they do not represent a cohesive system of theoretical propositions, as much as they are a collection of statements based on the model. I leave that question open only to say that I think it unwise to
make very strong claims to the generalization of the empirical findings, and unfair to make no claims at all. As much other social scientific research, the claims to validity of the propositions that I have made rests on the quality of the work that has led up to them, their plausibility, and, most importantly, the lack of negative examples among the cases and from other research.

This work has been explorative on a path that has not been explored thoroughly before. It is an early attempt to theorize on a wide and commonplace phenomenon. The model is my way of organizing the data and I realize it is not exhaustive or final. Nevertheless, I have made it quite clear how this new phenomenon can be studied and interpreted. My reports are made with confidence rather than certainty, and I believe further investigations will improve it.

9.3 Relating to Media & Mass Communications Research

The work that has been done here takes place in an intersecting space where (potentially) all socially motivated user research criss-crosses. The forms of empirical findings that have been reported in summary sections of chapters 5-8, are similar to empirical findings that are spread over several such approaches. It is not reasonable to relate this work to all of them, not even to several. Nor am I competent to relate it theoretically in any more significant way than I already have done in chapter 4. Also, these findings have already been related to relevant empirical evidence, particularly from the tradition of Information Studies. What I shall do now is to inscribe findings beyond what has already been done, to relevant empirical research reported by a few authors in a bordering, and yet un-commented, field of research. It is hardly prudent to speak this much about uses of information systems in everyday life without a mention of media and mass communication research, and so that tradition of research is to what I shall relate.

This section serves the purpose of comparison and is introduced as three sections of increasing specificity. Approaches relates some recent developments in media and mass communication research. Comparative notes consists of a few issues that are central to the research conducted here and that appear in media and mass communication as well. Empirical evidence reports and provides snippets of established knowledge in media and mass communications research that are rele-
vant to the empirical uniformities that have been found in this research.\(^{72}\)

### 9.3.1 Approaches

Media and mass communication theory that is relevant for comparison here is often labeled audience research, which is different from traditions of studying media from perspectives of structure and organization or of media content. Furthermore, different traditions of audience research can be understood as being 'structural,' 'behavioral' or 'social-cultural' (McQuail 2000:366). The structural perspective is one of statistical analysis and surveys of audiences. It is as old as mass media itself and has been used as an instrument to demonstrate the existence of an audience (Moores 2000:23) and criticized for providing a 'statistical fiction' (Sorlin 1994:148) for the business rather than social-scientific insights. The behavioral and social-cultural traditions are both more oriented to qualitative analysis and can be exemplified by the 'uses & gratification' approach and by the 'reception' approach respectively, where the trend is a move towards the more situated and ethnographically oriented reception approach (Moores 2000:148; Crowley & Mitchell 1994:2; McQuail 2000:365).

As a note of observation, there are two remarks that immediately can be made for comparisons of media and mass communication research and the kinds of socially motivated user research that has been discussed in chapter 1. The first is that user research on ICTs can learn from media and mass communication research with a structural approach: The creation of a mass media audience by the prediction of ratings figures could be compared to the studies of diffusion of computers and other ICTs and access to the Internet. As noted by Pierre Sorlin:

> Data collected by the media to 'photograph' their public are not relevant for sociological research, not because they are wrong but because they are meant to answer commercial, not sociological

\(^{72}\) The choices of texts and authors that I have reviewed obviously makes this presentation somewhat biased. Since they are quite few and thus the bias is all the stronger, it is probably wise to warn the reader of it. Some texts that have been used were already familiar (McQuail 2000; Silverstone 1994; Beniger 1988) and others were found by personal recommendation (Sorlin 1994), by browsing shelves in a library (Moores 2000), and chaining backwards from quotes (Thompson 1994; Crowley & Mitchell 1994).
queries. /.../ [A]udiences cannot be reached through statistics but are given only through their practices. (Sorlin 1994:43)

If Sorlin's comment is accepted, this is a lesson to also be learned for socially motivated user research: In order to understand the consequences of the computerization and informatization of society, counting eyeballs is not the way forward.

The second and more profound observation is that a 'turn to everyday life' seems to be a common theme for research. In media and mass communication research the turn to everyday life might be said to have begun with a move from the perspective of the media communicator towards that of the receiver by means of the uses and gratification theory, and then onwards to a more situational perspective of reception analysis. The research that I have reported has some affinity with both the uses and gratification approach and the reception analysis, and I begin with a closer look at the former.

As a school of thinking, uses and gratification research dates back to the 1940s, and it went through revisions in the 1960s and 1970s. The similarities with this research are basically in the core questions of why and for what purposes people use certain media, and in the assumption that uses can be explained (and indeed predicted) by the expected ends of use (gratification) that meet with initial needs. Among the reasons to why the uses and gratification approach has suffered serious critique for its behaviorist and functionalist leanings (McQuail 2000:387-389), is due to difficulties of measurement and that media use is highly circumstantial and weakly motivated (McQuail 2000:389).

Important differences in my own research is that I do not make use of the ambiguous concepts 'motives' and 'needs' but instead look for empirical evidence of 'projects' of everyday life that elicit 'problematic situations'. It is also important to point to the fact that the best uses of the uses & gratification approach has been in areas of media use where there are specific types of content and presence of motivation (McQuail 2000:389). As an example, generic TV viewing has been less successfully studied with the uses and gratification approach and it is also among the information-activities in this research that is the most difficult to detail (see # 7:13). But several other information-activities are less ambiguous as to how they relate to projects and problematic situations, not necessarily involving TV-viewing but other information systems (see chapter 8). Nevertheless, it would surely be interesting to
see the uses and gratification approach applied on the full scope of media use that appears in everyday life.

The affinity between this research and the uses and gratification approach is, however, no stronger than the affinity between the uses and gratification approach and reception analysis. The uses and gratification approach can be argued as not strictly behavioral:

...since its main emphasis is on the social origins of media gratification and on the wider social functions of media, for instance in facilitating social contact and interaction or in reducing tension and anxiety. (McQuail 2000:367).

Thus, the difference in regard to reception analysis may rather be one of degree than of kind. The degree of difference to reception analysis is found in the emphasis on the social, where the audiences are seen as 'interpretive communities' and the media use is in itself a significant aspect of everyday life (McQuail 2000:367). In reception analysis the significance of the individual's outlook and prejudice, and the everyday life situation has a strong influence as to how use should be understood (McQuail 2000:453). With origins in critical theory, semiology and discourse analysis, and more specifically in the encoding/decoding model by Stuart Hall, the reception approach offers the preferential right of construing meaning from media products to the receiver (McQuail 2000:56, 454). This is also a view of the workings of information and communication that I have set out: Meaning is not transferred in communication like parcels in the mail but rather in the individual confronting the message forming an individual meaning from it and assessing its relevance. As an epistemological stance it conditions the view of what the individual possibly can make sense from, i.e. there has to be a social agreement about what the constituent signs of the message refers to and it has to be known by the receiver (one may or may not understand spoken Greek or written music), and it conditions the view of how the individual interprets the message communicated (one may or may not accept as 'the truth' a political statement at election time). This is important as it puts in focus the matter of making assessments of relevance of media products and make it an integral part of the overall information behavior that is both individual and social. I will return to this in a comparative note on 'relevance' in my research and in reception analysis.

As an example of a call for reception analysis, let me quote a text from 1994:
By focusing attention on the shifting boundaries between globalized media products and localized conditions of appropriation, and by examining in detail, by means of hermeneutically informed ethnographic inquiry, the ways in which individuals situated in different circumstances make sense of media products and interpret them into their lives, we can avoid shortcomings of many of the traditional social-theoretical approaches to the media. /.../ [This] is not to suggest, however, that a social theory of the media should abandon the concepts and problems with which social theorists have traditionally been concerned. (Thompson 1994:45).

The quote reveals a connection in reception analysis to cultural studies that was also observed by Denis McQuail (2000:367), which is interesting. But the more important point here is its focus on contingency and the local and that media and mass communication theory is increasingly beginning to "open the black box of mundane reality" (Crowley & Mitchell 1994:3). I will return in the conclusion to contrast this turn to everyday life with the contributions from my own research.

9.3.2 Comparative Notes

_Inclusiveness of Approach_

Among the things noted in reception research is that much media research tends to focus on particular media technologies and products and "give insufficient attention to the ways in which these technologies are interwoven with other aspects of social organization and social change." (Thompson 1994:30). In the year 2000 it is still noted that it is "unusual" for several types of information technologies "and other types of communication to be grouped together in a single domain of investigation." (Moores 2000:135-6). And in that observation a traditional boundary between the categories of mass and interpersonal communication is suspected to be an obstruction (Moores 2000:136). Here, I have made that grouping of several types of information systems as they appear in everyday life, and it may prove instructive to research with a reception approach although they already know that new media overlap old media rather than rival them (Sorlin 1994:54). While I have included in the model points of social influence on individual behavior (with relevant results in # 7:3, # 7:11, # 7:15, # 7:19, #7:20), I have not given very strong attention to how uses of informa-
tion systems are localized in a cultural domain of social organization and social change, which is work that remains to be done.

More particularly, a reception analysis would not only look at the "routine activities of everyday life into which media products are incorporated by recipients" but also to "the information and symbolic content produced and transmitted by the media industries." (Thompson 1994:44). Such a cultural analysis is beyond the scope of this research.

Assessments of Relevance

The more important note of comparison between reception analysis and the work reported here is, as mentioned earlier, the turn to everyday life and the placing of individual assessments of relevance as central to all information behavior:

In pursuing their objectives, individuals draw on the resources available to them; these resources are the means which enable them to pursue their aims and interests effectively /.../ [which] include the technical means of fixing and transmitting information or symbolic content, as well as the skill and forms of knowledge employed in producing, transmitting and receiving it. /.../ Individuals are constantly involved in adapting the contents of media products to the conditions of their own lives and in reconciling, or simply holding in an uneasy balance, messages which conflict with one another and with the values, practices and circumstances of their lives. (Thompson 1994:31, 32, 45)

This explication of incorporating media products in everyday life reads very well with how theories in Information Studies consider assessments of relevance to be an ongoing sense-making process, and that I have argued to be part of all forms of information behavior (mainly in sub-section 4.4.2. See also # 7:18). Furthermore there is support for the notion that relevance is higher when there is a stronger commitment to a personal project:

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73 But there are studies by others in user research that have tendencies to this direction: Placing uses of information systems in a cultural context is attempted by network sociologists, notably by Berry Wellman and his colleagues (Wellman 1999; 2000; Wellman & Gulia 1996; Wellman et.al. 1996). And placing such uses in the local culture of the household is done by Silverstone and colleagues (Silverstone & Hirsh 1992).
While reading or watching, users do not stop producing hypotheses, which are tested in the text for confirmation or disconfirmation. As a process it provides for a gradual construction of meaning, which consents to interpret and include in a narrative syntax every motive or incident. /.../ [A] hypotheses is that messages are all the more complex when they are less related to the addressees' immediate concerns. (Sorlin 1994:25, 26)

As I have argued, relevance is judged on the merit of to what the individual may relate it (# 7:18). When there are more personal experience to relate it to, the relevance is greater. And when there is a relation to a personal project rather than to a public project, the relevance is still greater. It is also noted in media and mass communications research that people prefer to read about local and familiar issues rather than public issues in the paper when given the option (Sorlin 1994:62) (see also section 7.5), and that they are happy to share such information that they are well familiar with, such as pet care and gardening (Sorlin 1994:64) (see # 7:19).

Even in areas where people are happy to take part in information that has no apparent connection to a personal project and thus imply that it would not be of relevance to the individual, media and mass communications research has effectively shown that it is, in fact, of concern to the individual and I may infer by way of such evidence that it is quite possible to relate to a personal project, such as in the case of newscasts:

> Most of the time, the media transcend our daily reality while maintaining a close connection to problems associated with our daily concerns. They tell us about people or regions which do not belong to our immediate surroundings but are likely to modify our situation. What is reported fulfills our longing for more news and may turn out to be useful or at least instructive.” (Sorlin 1994:69)

Another case in point is the concept of 'emotional realism' (Ang 1985) introduced to make sense of the lure of television soaps (Moores 2000:30-31).

I have not found any explicit discussions about social assessments of 'relevance', i.e. the sense that is made from messages not from the concerns of the recipient but from the expected concerns of someone to which they are committed (see # 7:19). This is not to say that there is no such discussion in media and mass communication research, only that I have not seen it. An area that tangent such a discussion, and
where I suspect it could be found, is in studies of talk about media products outside of the media itself.

**Information vs. Entertainment**

The meaning of the concept 'information' that I have used here and that which is commonly inferred in media and mass communications research is different in a way that makes cross-readings complex and confused. I have tried to maintain a straight line of using 'information' as a label of the symbolic content of messages out of which an individual construes meaning, and that the outcomes of information-activities, where such messages are interacted with, can be predominantly cognitive, emotional or behavioral (see section 4.5).

In media and mass communication research, on the other hand, 'information' is often used in opposition to 'entertainment' where information is understood as reports of real events and entertainment as products of fiction. That which falls in-between (or in both?) has been referred to as 'infotainment'. For most practical purposes it is a convenient categorization of media products. A problem from a point of view of this research, however, is an implied normative distinction between information and entertainment, where the former is associated with words such as facts, empowerment and knowledge, and the latter with fiction, escape and fantasy. My suspicion is that such a distinction stems from a critical approach of media studies where entertainment and pleasure are seen as strategies of political domination intended to "divert us from serious issues" (Sorlin 1994:82). While I do not expect that any useful model can be value-neutral, I do believe that such polarization would obscure the understanding of information behavior. From a discussion of the quote below, where this oppositional stance comes to light, I shall try and be a bit more precise.

Unlike information, entertainment can be advertised; conversely, advertisements become, at times entertainment. This implies that customers are more active when selecting entertainment than when getting information. (Sorlin 1994:90)

This quote is problematic when juxtaposed to my own research as it assumes an information behavior that is not plausible within the frames of the model that I have suggested. My argument to resolve this problem will be that Sorlin’s suspicion is not valid due to the conception of 'information' and 'entertainment'. 
In the quote lies the rather narrow definition of information as something akin to facts and implying something useful. The view of information that I have made use of would rather see entertainment as a special case of information, or rather as a label of several positive emotional outcomes of information behavior. With such a view, the paragraph can be read quite differently: 'Unlike information that relates to a specific problem, information designed to offer emotional outcomes can be advertised.' It could be useful to leave for a moment the oppositional stance and look instead to how information behavior offers outcomes that are predominantly cognitive, emotional or behavioral. This would even strengthen the point that I believe Sorlin is making in his first paragraph; that information (Sorlin’s use of it) is contingent and cannot be advertised in advance. When the TV is turned on, or the newspaper opened, we cannot be sure to encounter information that is valuable in the respect that it relates to a specific problematic situation of a project, except for the special case where positive emotional outcomes are sought, such as release and confirmation (see # 7:2, 7:4, 7:8, 7:10, 7:12, 7:13, 7:15).

The second part of Sorlin’s paragraph where he states that it implies that customers are more active in choosing entertainment than information, can be understood as matter-of-factual when it comes to the forms of media in question: television and newspapers. There is rarely the option to look actively for information that solves specific problems from mass media as one can never be sure that such information will be offered. If one chooses to study the looking for such information in everyday life in a context of other forms of media it is obvious that people turn elsewhere for it, not to the TV or the press, and that people are likely to be at least as active in doing that as when they select entertainment, which Sorlin also argues elsewhere (1994:61).

I suggest the mass media should not be blamed for what it cannot be expected to deliver. The problem as I have referred to it here is twofold. First, information-on-demand to resolve specific problems is better catered to by personal forms of information systems than by mass media. That goes for 'deferred needs' for information in general, and for 'immediate needs' especially. Second, a chance encounter from

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74 Sorlin can be understood to argue that these affordances of mass media are used as a strategy to divert the attention from serious issues. Whereas I do not ascribe to such a conspiratory interpretation, it may nevertheless be the emergent result.
mass media of information that is considered to be 'relevant' is more likely to relate to 'problematic situations' that are basically emotional rather than cognitive. For these reasons I consider Sorlin's argument in his second paragraph above to be invalid simply because there is less of an option to choose information than there is to choose entertainment from mass media.\footnote{It is odd that this long tradition of research should not make use of more precise terminology than that of 'information', 'entertainment' and 'infotainment'. Nevertheless, it has been noted that among the most cited works of inquiry into the—very central—concept of 'information', few originated in the communications disciplines (Beniger 1988).}

Sorlin’s comment in the quote above is important because it strikes at the heart of the nature of mass media. There is a concern in media and mass communications research that 'entertainment' is becoming more and more pervasive at the loss of 'information'. However, while mass media is good at offering public information and entertainment to the masses it is less appropriate for personalized and timely information that is relevant to most personal projects that people constantly have. In order to study how people acquire information from mass media, it is necessary to look at how they do so from other information systems as well. As I have done this it has become clear that while mass media play an important role in the overall information behavior of everyday life in terms of the time spent and level of habituation, my respondents mostly used it for browsing, monitoring and unfolding in relation to projects of staying up-to-date and of reflection & recreation (see # 7:4, 7:8, 7:14). There is no news in this statement, it is well known and more eloquently put by Sorlin himself:

The reception of the media is akin to situations, which we experience daily: moments of relaxation, of dispersed attention are interrupted by sudden moments of tensions. Except when they read or watch very seriously, people are content to pick up a few segments from a continuous flow. (Sorlin 1994:43)

It appears that most uses of mass media are like this: most often browsing and monitoring, never sure to encounter something really valuable but always quite confident to get something from the experience, such as a moment of relaxation, and sometimes unfolding more 'seriously'.
This opens up an exciting line for continued research: Mass media such as TV may be understood to be well adapted to offer emotional outcomes such as release, companionship and ontological security, whereas other information systems, notably the Internet, may be understood to be well adapted to offer cognitive and behavioral outcomes, such as enlightenment, orientation and a basis for decisions and other actions. There have also been indications from market research that increased use of the Internet is connected to a decrease in use of television.\textsuperscript{76} This can be framed in a question about what kinds of uses of television and the Internet are being substituted, as it implies that a personal information system such as the Internet is about ready to tackle the role of being the prime source for 'information' in the media and mass communications sense of the word, leaving television as the tool for 'entertainment' par excellence.\textsuperscript{77}

Related to the contingency of how informative nuggets are found from products of the mass media, and how other values are apparently pursued in-between those few nuggets, the situation appears to be the same in other flows of information, such as in exchanges:

Most social exchanges simply aim at creating contact. Questions are asked, answers are given, but no real information is being sought. Redundancy or noises fill up letters, telephone calls, encounters. (Sorlin 1994:42)

This comment is interesting as it offers support to a claim I have made; that in the case of personal exchanges, face-to-face or mediated by some information system, a lack of exchange of information that relates to personal projects indicates that other values are derived from the exchange. And I have suggested that 'maintenance of social relationships' is a generic project that is considered to be of such a value (see # 7:15).

\textsuperscript{76} More precisely it has been purported in the news that the Internet cannibalizes television-viewing time.

\textsuperscript{77} Roughly related to this is an undertaking by Kraut, et al. (1997) to contrast preferences for 'interpersonal communication' versus 'information and entertainment' as forms of uses of the Internet. They found communication to be the more important use as emailing was found to be driving all other uses. This study did not, however, look at uses of any mass media in conjunction with this, although television is discussed in it.
There are several instances of congruence between empirical findings from my research and what has previously been noted in media and mass communications research. One such finding is that uses of information systems in everyday life are structured to other activities in everyday life (see # 7:8, 7:9, 7:14). It has been already noted from early radio, and later from TV-programming, that schedules were made to ‘chime in’ to the rhythm of daily routines (Moores 2000:53, 97). Today, the relation is perhaps more complex and it is difficult to say what conditions what; is dinner taken when the favorite show is running on TV, or is that show run when people are likely to have their dinner? Even the purchase of a daily newspaper is taken to be instrumental to organizing daily practices (Sorlin 1994:39-40), and in this study it has been found that even if they are not bought on a daily basis the purchase does relate to other practices, such as ‘weekend’, ‘traveling’, or ‘holiday’ (see section 7.5).

Is it enough to say that many information systems are "part of the social fabric that goes to make up our routine daily experiences" (Moores 2000:12)? Perhaps. I would like to add only two things. First is that with a less systems oriented perspective, looking to types of information-activities in everyday life rather than to specific information systems, the relation between forms of activities could perhaps become clearer. ’Watching TV’ can only be understood as a physical activity as it says nothing more than that someone is looking at the screen of a TV. As an activity it can be given more precision if it is considered an information activity of ’unfolding’, ’monitoring’ or ’browsing’. The relations between watching TV as forms of information activities to other activities, such as having dinner, would perhaps clarify how the mutual relations are made up. The second thing I would like to add is that when looking at other forms of information systems other than mass media it becomes clear that coincidences between forms of activities persists for other information systems. Not only are there times and places for watching TV and looking at the newspaper, but also for opening the mail, checking the email, reading a book, talking on the phone, and browsing the web (see # 7:8). Information-Activities coincide with physical activities, and what is more, information-activities coincide with other information-activities (e.g. reading in front of the TV).
Obviously, the structure of the media-everyday-life fabric relates to habits, routines and rituals, which is a common theme in media and mass communication research and in my own. Buying a newspaper, for instance, is understood to be, in part, a personal habit (Sorlin 1994:39-40), and, in part, a social ritual (Sorlin 1994:39; Moores 2000:39). While I too see the connection to personal habits, I can only suspect its significance as a ceremony (see #7:8). In reception research there is greater emphasis on the social significances of media-practices than there is in my own research. Emphasis is put on shared experiences and the communality of audiences (Sorlin 1994:16-17, 79), and it is seen to be translatable to individual routines that are not fully individual but common to the society of which they are members (Sorlin 1994:41). I have not stretched my own research very far in this direction and any further investigation would definitely benefit from such a perspective.

Another theme of exploration is that the uses of information systems are not clear-cut activities but intermixed with other pursuits (Moores 2000:24), which in media and mass communications research has been found, to some extent, to be a gendered behavior, especially when it comes to domestic activities in combination with uses of television (Moores 2000:34). As I have looked mainly at forms of information-activities and have no reason to think that those are gendered, I have bracketed the gender issue in this research. This is not to say, of course, that the frequencies and circumstances of information-activities are not gendered. Applying the model developed here on a larger sample would motivate a search for differences and similarities in information behavior for different categories of users, such as by gender.

Other commonalties are findings from domestic practices of managing the technologies as such, and I wish to close this with four final points of comparison. 1) An assigned 'expert' in the household takes the lead in manipulating technologies (see #6:5), although it tends to be from an aspect of power relations (Sorlin 1994:37, 38; Moores 200:92). 2) Related to that are constraints imposed on children to manage their viewing time (Sorlin 1994:38-39), although I see most such restrictions more as strategies to manage fragile technologies than as expressions of power (see # 6:7). A difference, though, is that Sorlin discusses the aspect of power in relation to domestic practices of working-class families, which are not present in my study. 3) Technologies can be used in a strategy of exclusion, in order to be left alone for a
while (Moores 2000:32-33) (see #6:2). 4) The aging technologies of the household are 'given to the kids' illustrating the shifting position and function of a technology in the household (Moores 2000:67) (see # 6:7).

9.3.4 Conclusion

This has been a very cursory overview of the affinity between my own research and that in the media and mass communication tradition. But it does not take much more than a glance to notice that there have been calls for, and during the 1990s, some moves towards empirical studies of media and mass communication that transcend the boundaries of mass and interpersonal communication, that include more than one or more particular media technologies and cover several types of relations and social circumstances (Thompson 1994: Sorlin 1994: Crowley & Mitchell 1994: Moores 2000: McQuail 2000).

If the research that I have made here contributes with a turn to everyday life in Information Studies, it is from an opposite direction than the turn to everyday life in media and mass communication research. While the model that I have developed is more inclusive than most models in Information Studies, it is, however, micro-social (see section 2.2) since it does not take into account the interactions that concern many individuals in much the same way, such as the social dynamics of a community. In comparison with media and mass communication research, the image is very much the opposite: Macro-social studies of the culture of the media industry and its products are taking a turn towards the more particular events that concern individuals and their situated reality, rather than a community and a generalized reality. This means that the contribution that I have made is a move from the particular to the less particular, contrasted to the move in media and mass communication research from the general to the less general. In reception analysis, Moores notices how studies of the embedding of media technologies in everyday household life (especially Silverstone 1990) make the boundaries of the research tradition unstable (Moores 1994:35). While my own research is not derived from the tradition or explicit perspective of reception analysis, it can perhaps be said to have a place in those blurry boundaries.

I do not expect to have made any contributions to media and mass communication research. It is easier for me to see how my own research would benefit, as it has built-in limitations from a media and mass
communication way of looking at things. But there is one area in which I suspect reception research would benefit from my model, and that is the approach of looking at several forms of information systems in concert and in the circumstances of lived experience of everyday life. Needless to say, such a research initiative would preferably come from a researcher skilled in media and mass communication research, not only in order to make for good research but also to improve on the analytical model with input from that tradition. Better still would be to team up in a multidisciplinary group of social scientists from traditions of doing research in library and information studies, media and mass communication, network sociology, and consumer studies, in order to perform empirical research on everyday uses of information systems. Such a project would have a unique opportunity to answer questions that remain unanswered or that have yet to be expressed.

9.4 What’s the Use? Returning to the Questions

In this section I will return to the purpose that was set out in the very first chapter and hopefully bring closure to the research questions by pulling together the different strands of thought that have been developed. To begin with I restate the purpose and questions for the reader’s recollection.

The purpose was: To develop a theoretical and conceptual framework of information behavior in everyday life that offers description and categorization and relates it to information systems, with an outlook towards also describing the usefulness and objectives of information behavior.

The questions were: 1) To find appropriate terms and methods to categorize information behavior in everyday life—how to describe use. 2) To discover purposes and aims for the individual’s information behavior in everyday life—how to describe usefulness.

In chapter 4 I have developed a model for the intention of answering the first question. This model is developed from prior research, mainly from the tradition of Information Studies, and from the empirical material of ten cases. I have also presented the empirical material in order to offer the data from which the model has been partly developed. The logic of the model has been used to structure the presentations of the material, and by making use of its categories’ empirical
uniformities relating to the second research question have been found and suggested as brief statements.

In section 9.2 I have also made a critical review of the methods that I have used and of the quality of the model. I argue there that the quality rests on the comprehensiveness of individual categories and the explication of their relations, as much as on the corpus of prior research and the diligence of the analysis that I have made.

At this point, as the book is drawing to a close, what remains to be done is to finalize the analytical model, which I will do in sub-section 9.4.1 below, and to discuss what can be said about usefulness of the Internet and other information systems in everyday life, which I will do in sub-section 9.4.2. This means that some things that have already been said need to be repeated. Hopefully this will be more of a benefit than an annoyance as it is intended to bring together the parts of the model in a clear line of reasoning.

9.4.1 Categorizing Uses of the Internet and Other Information Systems in Everyday Life

Suggesting a Social Model of Information Behavior

In chapter 4, I have suggested the main parts of an analytical model to describe uses of the Internet against a backdrop of other information systems that may be found in the context of everyday life. The model is intended to describe uses in terms of how the respondents relate to an environment, to an ICT-setting, to the activities of behavior and to manifestations of the process in terms of outcomes. This part of the overall model is illustrated by Figure 4:1, and repeated in Figure 9.1 below. The specifics of respondents’ information behavior is elaborated further in section 4.4, and illustrated by Figure 4:3, and repeated below in Figure 9:2. Here, I wish to explicate on the workings of information behavior and submit a third illustration that brings together the two previous figures.

The reason for doing this is more substantive than only a pedagogical exercise. It is made in order to summarize all the different aspects of the model that have been discussed over the pages of this book, partly as categories and sub-categories developed in chapter 4, and partly as relationships between aspects of the model and properties of its workings that have been developed in chapters 5-8. Here, I put all
those aspects and relationships of the model in a comprehensive sys-
tem and thereby raise its precision without offering any assumptions
that have not already been discussed. This offers a view of information
behavior that takes into consideration the influence of other people;
uses of information systems; assessments of relevance; and the process
by which they are understood to operate. Let me also reassure those
who do not find these kinds of illustrations to be informative that eve-
rything that is represented in them is also available from the text.

The Figure that is suggested here (Figure 9:3, below) is intermedi-
ary in relation to the previous figures. The relationships between the
three figures are illustrated in Figure 9:4, below. Figure 9:3 subsumes
the information behavior and -activities illustrated here in Figure 9:2,
and it is subsumed by what is illustrated in Figure 9:1. This new illus-
tration offers a description of individual information behavior that takes
into account how micro-social relationships are a part of it.

**Figure 9:1. Model of Human Information Behavior**

![Figure 9:1. Model of Human Information Behavior](image)

**Figure 9:2. Relation of Behavior and Activity**

![Figure 9:2. Relation of Behavior and Activity](image)
>What's the Use? Revisited

Figure 9:3. A Social Model of Information Behavior

Anders Hektor © 2001
The social model (Figure 9.3) represents elements of information behavior (a) and elements that are understood to relate to information behavior (b, c, d) in a flowchart system with inputs (e, f), outputs (g), and feedback (h). The specific contents of this model have already been discussed but their relations to each other need to be explicated.

Information behavior is understood to take place in response to problematic situations in projects of everyday life. The information behavior is thus elicited by a problem pertaining to the individual input to the model (e) (which corresponds to the arrow 'c' of Figure 9.1). The problem may also belong to someone that the individual has some social relation to, giving input to the model from someone else’s environment and ICT-setting (f) (which corresponds to the arrow ‘c’ of other individuals’ Figure 9.1, as illustrated by three conjoining arrows in Figure 9.4).

The behavior can be described as one of four types of information behavior (a), and as more specific information-activities (i).

Carrying out an information-activity takes place in relation to other people or some information system (c), which consists of information technologies and information services that are part of the individual’s ICT-setting.

When the behavior is initiated by the individual the order of events is (e \(\rightarrow\) a \(\rightarrow\) i \(\rightarrow\) c). In cases where someone else is the initiating agent
Chapter Nine

, such as when someone calls for the individual’s attention on the telephone or face to face, the order of events is \( f \to b \to c \).

When the individual has interacted with an information system or another person, by his or her own initiative or by the doings of someone else, an event takes place \( d \). The event is a significant episode of finding or encountering something that is understood to be informing. It may also be that information is imposed by someone or something by suggestion. The event may be expected or unexpected, and it may be desired or unwanted. It may also be that the event is the individual emitting information with or without intention. (There are plenty of examples of information-related events in everyday life where the individual is not the immediate cause, e.g. the morning paper that arrives in the mailbox and someone in the household who calls for attention. To some extent we are, in fact, partly responsible for these events. Merely having a telephone is a subscription for information events, and the telephone is there due to the previous behavior of us or someone else in the household.)

As the event takes place, it is understood to be part of the information behavior to make assessments of relevance \( j \) in order to further deal with the information. The individual is understood to assess the information by searching for a set of beliefs that it relates to. The appreciation of relevance is understood to be influenced by the extent to which it relates to a personal project or problem, or to a project or problem belonging to someone that the individual is committed to.

When the assessment is made, the individual is faced with the options of how to proceed \( k \), which is also understood to be part of the information behavior. The process can be continued by another iteration through the model \( h \). Or it can be ended and the model left \( g \), rendering some outcome & changes (which corresponds to the arrow ‘C’ of Figure 9.1). The output is understood to be one of three results of an information behavior: By ‘deflecting’, the foregoing activity or event that occurred is left and not taken further notice of. (For instance as a strategy to cope with a flow of information that the individual does not care for.) ‘Postponing,’ is another option. Perhaps a search did not turn out favorably and it is decided to leave it and return at another time. Or a telephone call is interrupting and therefore is screened by the answering machine. Or an encountered piece of information is too extensive to experience at the time so it is printed, ripped out of a magazine, downloaded or bookmarked. There are many ways of postponing and it is a frequent part of several forms of information-activi-
ties. Once an activity is postponed, it may feed back into the model either as Preceding Behavior (f) or as a new behavior (e) at another time. ‘Accepting,’ is the final option to quit an information behavior. It is an instance that occurs where the individual is satisfied with the foregoing iterations and decides to leave with what they have. (This is often a satisficing practice, a coming to the conclusion that what has been gained is good enough.)

With this I believe that the model of information behavior have been brought together. In chapter 4 I have introduced and defined the terms and concepts of the model, some of which are already established concepts and others that are new concept that are necessary to understand the forms of behaviors in these types of settings. In chapters 5 through 8 I have shown the types of findings that this model can bring to day from empirical material. And here I have brought together and illustrated how the different parts of the model relate to each other.

**Suggesting a Relation Between Life-Activities, Information-Activities, and Projects**

One thing remains to be done in respect to the overall model: It has been argued here and in chapter 4 that an information-activity can always be related to some project and that there are different types of projects conceivable. How this relation can be established has been understood to be an empirical question, and from findings in chapter 7 and 8 it has become increasingly clear that it is possible to draw conclusions in this aspect. Here, I shall suggest how this relation might be understood, as it has been developed especially in chapter 8.

Finding the reasons as to why people engage in particular information behavior has been considered to be problematic. ‘Needs’ for information, by explanation, is difficult to use as ‘needs’ are not easily studied. I have suggested a pragmatic approach of connecting the concepts of ‘problematic situation’ (Belkin & Vickery 1985; Taylor 1991) and ‘project’ (Hägerstrand 1985; Ellegård 1993; Ellegård 2001). This coupling brings together projects that may be found in everyday life activities and the problematic situations that appear within them as projects are pursued. Furthermore, as projects may appear on many levels I have suggested that they can be distinguished as generic or specific, and that specific projects can be distinguished as oriented towards pursuit or change.
For the purpose of studying time-geography, seven top-level categories have in prior research been found to cover all activities in everyday life (Table 4:1, repeated below as Table 9:1). With the terminology that I have suggested here, these seven categories are understood as generic projects in the realm of life-activities. For the purpose of studying information-activities in everyday life these seven projects are useful as information-activities are pursued in relation to those life-activities. As an example, in the generic project of caring for oneself, problematic situations arise that call for action and/or information to be solved.

Table 9:1. Top two categories of Time Geographic matrix of activities in everyday life. These categories are developed within the framework of time-geography. They are credited to Kajsa Ellegård, personal communication, April, 2000.

<table>
<thead>
<tr>
<th>Level 1-categories</th>
<th>Level 2-categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caring for oneself</td>
<td>Eating / Sleeping / Personal hygiene / Go out-come home</td>
</tr>
<tr>
<td>Caring for others</td>
<td>Feed / Clothe / Hygienic care / Play / Bring together with others</td>
</tr>
<tr>
<td></td>
<td>/ Put to bed / Aid &amp; Raise</td>
</tr>
<tr>
<td>household care</td>
<td>Cleaning / Mending clothes / Mending things / Household administration / Purchases / Gardening / Construction work</td>
</tr>
<tr>
<td>Reflection and recreation</td>
<td>Social relaxation (e.g. entertaining guests, speaking on phone) /</td>
</tr>
<tr>
<td></td>
<td>Personal relaxation (e.g. reading, watching TV, listening to music,</td>
</tr>
<tr>
<td></td>
<td>pursue hobby)</td>
</tr>
<tr>
<td>Transportation</td>
<td>Transportation’s of self</td>
</tr>
<tr>
<td>Procure and prepare food</td>
<td>Acquiring / Preparing / After-work</td>
</tr>
<tr>
<td>Gainful employment</td>
<td>Work</td>
</tr>
</tbody>
</table>

However, in order to find explanative projects for all information-activities, these projects do not quite suffice since information-activities often fit in several such projects simultaneously. In those instances, other project labels are called for. I have suggested three project labels for information-activities that are understood to be common to all respondents of this study, implying that they are generic, and that they are not attributable to any of the already existing generic projects. These three generic projects do not relate to corporeal events in time-space but to mental, or immaterial events, and they are additions to the seven previous generic projects.

The projects that have been suggested are: ‘maintenance of social relations’, which is understood as a generic project to pursue social
relationships in exchange-activities and in other information-activities where the objective is directed to management, support or concern of kith and kin. Problematic situations within this project may pertain to any of the seven categories of life-activities and is thus not possible to be labeled by any one of them. ‘Making sense of the IUE’ is seen as a generic project of familiarizing oneself with an information system, and is likewise not possible to attribute to a single project of life-activities. When confronted with an information system there is a problematic situation within this project, which is solved by browsing (e.g. of the WWW, a magazine, a library, or among TV-channels) or other information-activities. ‘Staying up-to-date’ is understood as a generic project of keeping oneself informed in choice circumstances. There is a perpetual problematic situation of a wanting to obtain information that is relevant and it is pursued through monitoring activities. The make up of the ‘staying up-to-date-project’ is complex and contradictory, and the individual design of it is a satisficing compromise.

This is also possible to attribute to several life-activities rather than a single one.

In order to explicate on the relations between information-activities and life-activities, and the relations between the different forms of projects, which certainly can appear to be confusing, I wish to close this matter by offering a version of Table 4:1, and Figure 4:2, that brings a little more detail to the illustration. Figure 9:5, below, is a suggestion for a taxonomy of projects and activities. It should be remembered that this study specifically concerns Information-Activities and that the overall model is intended to cover those aspects of everyday life. For that purpose I present what has been studied here. The model is, however, possible to see as suitable to snap-on to a model where life-activities are studied as well. The elements of this illustration that have been developed in the analytical model are presented in black. The gray parts have been discussed but not specifically studied.
Projects and problems are understood to work in the following manner: Each and everyone is understood to have an identical set of generic projects (a) in their everyday life. In terms of life-activities they have been argued to be of seven forms that are useful explanators for many information-activities as well. Added to those are three generic projects that have been found necessary to explain all information-activities.

In addition to the generic projects, each and everyone is also thought to have a set of specific projects (b) that consists of any possible combination of generic projects. These specific projects can be of long or short duration, such as a lifelong interest or a brief fancy, and they can appear in any number. They are also possible to distinguish as oriented to changes or pursuits of desired orders of everyday life. Most importantly, specific projects are to a large extent individual and contingent. But any specific project can also be shared, as other people have the same objectives, making for a potential community. Such conceivable communities can exist as members of a household or of people sharing the same hobby. It can also be understood as communities of riders on a bus, spectators of an event, or of viewers of the same
televised sitcom. Remember though, that the concept of a project is rather vague to the individual and that they are likely to frame their actions as parts of projects only after the actions have been taken (Ellegård refers to this as ‘project circumstances’ (Ellegård 2001)). This is particularly salient to specific projects but I would maintain that some projects, notably the change-oriented ones, are more easily framed as projects by the individuals. Pursuit-oriented projects are probably more taken for granted, of longer duration and less available for the individual to see as a ‘project’ but rather as parts of their everyday lives and sense of identity.

As generic projects have formed a specific project, problematic situations arise (c). Certain problematic situations can be expected to go hand-in-hand with certain specific projects, whereas other problematic situations are quite unsuspected. A problematic situation is not what is normally considered to be a ‘problem’ but rather a gap between a want and a solution.

The actions that can be taken in order to resolve the problematic situation are either life-activities or information-activities, or both (d). The list of activities under the heading ‘life-activities’ is an abbreviation of the second order life-activities listed in Table 9:1. Possibly those can be seen as particular life-activities, but it is only a speculation and I do not suggest that they be understood as such. More certain, to my mind, are the eight forms of information-activities that have been found in this research and that are understood to cover all forms of information behavior in everyday life. It has also been discussed what sort of problematic situations to which they serve as a useful response. The eight information-activities do not have as clear a relation to the list of generic projects, as the lists of life-activities on different levels have.

The list of projects should, by all means, not be considered as exhaustive. It certainly needs to be developed further, although I do believe it to be a reasonable first approximation. The set of information-activities has a stronger footing in previous research and in new empirical material than that of projects, and I consider it to constitute a fairly complete list.
9.4.2 An Outlook to Usefulness in Everyday Life: Focus on the Internet

Regarding the usefulness of Information behavior, I have argued that behavior constitute responses to problematic situations, and thus the particular behavior is ‘useful’ in respect to their particular objectives. This is, however, a teleological explanation since the behavior is justified by an ad hoc conception of an objective. The only explanatory power of such a conclusion is that the information behavior is useful to achieve whatever was achieved. Not a very path-breaking remark. However, given the restrictions of what precision is possible, with the model at hand it is possible to make estimates beforehand of what the most useful information behavior would be for a project, and which information systems would be the most useful tool for it.

I have not passed judgment or taken a normative stance as to what ‘useful’ is. If any of the respondents had reported that they use the Internet to further their neo-nazi interest, the question of ‘good use’ would surely have beckoned such a discussion.

The secondary question with this research has been to discover purposes and aims for the individual’s information behavior in everyday life—how to describe usefulness. This question has been partly answered by the presentations of empirical material that underlie the development of the analytical model, by the suggested findings from them, and by the analytical model itself. Here, I draw together what utility the Internet has in the lives of these particular ten respondents, what leverage the Internet offers in their information behavior of everyday life.

The fact that these are summary and shallow renderings of ‘usefulness’ is only because all the details have already been given and there is no point in repeating them. I begin with a section on the machine-like aspects of computers, as they are, in fact, still playing a role in the everyday uses of some information systems, most notably the computer. After that, the rest of this section looks at the service aspects of the Internet, which is where the respondents find the substantial contribution, for seeking, gathering, communicating, and giving information.

Evident—But Not So Trivial—Benefits

Access to the Internet is necessary for access to the Internet. This may be a strange thing to say, but the respondents show that there are
intrinsic values in having access to the Internet in their homes that are
difficult to express differently. The very simplest reasons as to why the
respondents got access to the Internet is that it gives them a reason to
make use of a computer. With the access they may familiarize them­selves with the different applications of the Internet, particularly with
email and the WWW. This is valued as it brings along a sense of
keeping up with the times. It makes the respondents able to follow
discussions in the public debate and to contribute with their own expe­
riences in talk around the coffee table at work about an issue that was
very much of public concern at the turn of the millennium. Having
access to the Internet at home is in this sense not so much of a utility,
as it says nothing of the practical uses of it, as it is a benefit in and to
itself. Making the Internet useful in a more profound sense requires
that it is used in relation to projects of everyday life, other than a us­
ing-the-Internet-project.

Drawbacks with everyday access to the Internet have been discus­
sed as exclusion, restrictions and contingent problems, and it is prudent
to bear the negatives in mind as the positives are treated. It may be
interesting to note that the majority of the drawbacks relate to the
interactions with the artifacts that need to be operated and that the
advantages relate to the successful utilization of services.

**The Sociality of Information Seeking**

The respondents find the WWW to be useful for searching for infor­
mation when other sources are unavailable or prove unable to resolve
the problem. Questions that pop up in everyday life are not always
resolved by searching in dictionaries, lexicons, encyclopedias, atlases
or other reference sources. In such cases, the web is valued by the
respondents for search & retrieve-activities although it does not always
manage to offer a solution to the problem. While the web is considered
to be less convenient than books and other print sources, it is valued
for the depth and width of information that it offers, making it possible
for the respondents to further a particular interest even as there is no
specific question to be answered. From searching and browsing, the
respondents find information on obscure and specialized questions, act
on surges of curiosity, and orient themselves on markets of goods and
services. The Internet thus becomes a valued part of the reference­
collection of the household, and it plays a role in some decisions of
change-oriented projects. Although the information that they actually
show to take part in is not unique to the web (often it could in theory be acquired elsewhere), it is also obvious that without the Internet it would not be as readily available to them and many times probably not acquired. From their use of the Internet, the respondents have shown themselves to become empowered by the information that they acquire from it in their information-seeking behavior. In their goings about of everyday life they find information on the web that answers questions, resolves problems, and offers orientation and support. The utility that the Internet offers is not merely a private and cognitive affair. As the underlying problems are found to often entail a social base, the use reaches further as its advantage touches other individuals in addition to that of the acting respondent, and plays a role in their social relationships.

**Increasing Pressure From Information Gathering**

It is hardly possible to comprehend the variation of information that is available from the WWW. By browsing the web, the respondents familiarize themselves with the territory, gradually making sense of the web and of what they can expect from it. In so doing, they encounter bits and pieces of information that they believe to be useful to have at some point, if not immediately. But more often they turn and monitor sources that they have already become familiar with as they offer greater chances of encounters with valued information. In this respect, the Internet is a complement to other more established information systems such as newspapers. The perks that it offers to the make-up of the monitoring-activities of the respondent is free access to newspapers, journals and magazines and to specialized news on narrow topics in web sites and on email list servers. Most of the respondents’ monitoring is of sources other than those found on the Internet, and especially habitual monitoring, is hardly carried out at all on the Internet, except for checking in on the personal email inbox. One respondent reports having substituted news from the TV for news from the web. For the others, the Internet is an addition to their project of staying up-to-date; offering more specialized news to those of the respondents that has such interests.

As the respondents strike upon information on the web that they would like to take part in they often choose to print it. Among the reasons for doing this is that they want to continue their browsing or monitoring, and postpone unfolding it, and thus they need to make it
more permanently accessible either by downloading, bookmarking, or printing it. Another reason is that they sometimes like to have a more tangible representation of the information that they can store somewhere, or they want to take part in it at another time and in another place, e.g. on the bus or in bed. But most often they do this for a combination of reasons, which implies that the otherwise heralded drawback of reading directly off the screen is not the single most important reason. Flexibility is a key to understanding the information gathering behavior. But the imperative of flexible monitoring and unfolding is poorly supported by many information systems of everyday life. While books have their bookshelves, the respondents report of having problems in organizing the information systems of this day and age. Bookmarks, email inboxes, printouts and web-addresses torn out of papers and magazines lie in a shambles in, and somewhere close to, the computer. For a smarter everyday life, the respondents dearly need a support-system equivalent to a virtual bookshelf.

The information-gathering behaviors of the respondents show that the Internet plays a role in their non-habitual information-activities, it is an add-on to what was probably already performed in their pre-Internet age. This additional information system and the mass of information that it makes accessible, and the disarray that the use of it produces in the organization of the household’s collection of information sources, is felt by several respondents as a pressure to take part in more information, in competition with other information systems to keep up with.

**A Modest Role in Communicating Behavior**

Most of the respondents’ exchange-activities on the Internet are with email. One respondent also makes heavy use of chat and ICQ. These uses drive many other information-activities that take place on the Internet. In addition to the maintenance of social relationships, emails offer links to web sites that make for entrances to surfing sessions, monitoring and unfolding.

Much private emailing takes place at work. From the perspective of usefulness of internet-access at home, emailing at work is not relevant, even the private instances, as home-access makes little difference to it. Much day-to-day organization of shared activities takes place via email, but it is mainly at work as a daytime activity. In the evenings the respondents instead engage in exchange-activities face to face or on the
telephone. Home emailing among the respondents does not play a major role in their overall exchanges. The emailing that is taking place is that of getting mass-mails from news lists and the like, and to maintain social relationships on a physical as well as psychological distance in irregular exchanges. And yet they tend to monitor their mailboxes quite frequently, even when there is little chance that there will be any mail. The reason for this may be that email is considered a personal information system and as such it is given priority. Maintaining the contact with the email inbox is considered to be important.

While many messages are mass-mails, there are also private messages sent and received, often containing links to web sites and sometimes containing pictures. One respondent, with friends and family in another country, has found great use of sending pictures by email, and has substituted her letter writing for it. While most respondents consider email to spawn another kind of letter than the ones that are written by hand, they also find it to bring a traceability of exchanges that the letters do not, as it is searchable and they often leave a copy of the outgoing message. In this sense, they feel that email has taken over the role of letters, and has become a substitution for some postcards, some telephone calls and faxes. Email is seen to have found a special niche where it is rapidly becoming irreplaceable, but its role in everyday life is not very large to the respondents that do not have special needs for it. Nor does everybody have extensive personal networks of people with access to email. Nor does everybody have particular interests that generate streams of mass- or personal emails. Those that do, are avid users of email on their home computers. Those that don’t, use email at home very moderately, happy with what exchanges they have via email at work.

Privacy at Stake in Information Giving

The respondents’ information-giving behavior on the Internet is not very abundant but no less significant. Many respondents find good use in managing the business of their household, making instructs to pay bills, making reservations and purchases and playing the stock market. Paying bills is found to be a great relief and some report that they get a better overview of their finances from it. The requisitions and purchases that they make are such that they prefer not to spend time or energy in transactions over a real counter, or that such is not practically possible to do any other way as the real counter may be far away or, in
fact, non-existent outside of the web. Making payments is considered by most of the respondents not to be trusted and a change needs to take place either in attitude or in the handling of payments for them to engage in many more online purchases.

The two respondents that maintain personal websites on the web exemplify another form of information giving. There are other respondents as well that have made a website but only two maintain them. Among the reasons for doing this is only partly that they pursue it as a hobby in itself. Rather it is in response to specific situations in their everyday life. In both cases this refers to it as a means to advertise and put things on the market for sale. In one case there is an additional reason in exhibiting technical equipment and information for the benefit of a community of hobbyists.

9.5 Further Research

From the outline of user research in chapter 1, the research that has been made here should be labeled socially motivated user research. There is nothing to be found in this research that would have any practical implications for designs of ICT-artifacts. There may, however, be an opportunity for the design-oriented user researcher to draw conclusions and find guidance to innovation and design of services of relevance to everyday information behavior. The more important significance of this research is the contributions of describing and understanding the phenomenon of using information systems in everyday life. This is also what my suggestion for further research is about.

I can see three routes ahead that are of increasing generality: 1) Extend and develop research on the phenomenon by improving the model by multidisciplinary contributions to it. 2) Commit to hypotheses in order to investigate to what extent the assumptions of the model’s categories are researchable on samples of specific populations. 3) Investigate comprehensively a large sample of a population on their information behavior and the prevalence of behavioral characteristics (using some of my #’s as hypotheses).

9.5.1 Coupling the Model

The conceptual framework that has been developed here can surely be polished and developed further. A stronger devotion to a categorization apparatus (such as Sacks’s Membership Categorization Device
outlined in sub-section 9.1.3), and a joint effort with researchers from other fields could give a refined version of the model or a theoretical rendering of it. By reasoning and discussion alone, weak spots can be reinforced and wrinkles ironed out.

One such example concerns the list of generic projects and the relation between information-activities and life-activities, where several questions remain unanswered:

- Could the contributions in the list of life-activities and information-activities be pulled together and rewritten?
- A short-list of eight forms of information-activities that are reasonably complete and mutually exclusive has been suggested. Can the same be made of life-activities?
- The list of second level life-activities (Table 9:1 and Figure 9:5) is understandable as a list of specific projects, rather than as activities (or at least as intermediary between generic and specific projects). Can a similar listing be made from information-activities?

Coupling this research and time-geography would be of mutual benefit to work out problems such as these.

Similarly, the affinity with some work in media and mass communications research (see section 9.3) suggests a source for improvements to the conceptual framework. Among the areas that could be developed is the matter of a mutual shaping of media products and information-activities (see #7:8). But also less specific issues can be pursued to find synergies in these two approaches.

9.5.2 Commit to Hypotheses

The second route for further research is the means to really take this research one step further, not by polishing its rough edges but by committing to the conceptual framework and to the hypotheses that it suggests, and pursue them on a choice population. This can be done either from general and specific aspects of the model, or from the empirical uniformities that have been found. A joint project in a multidisciplinary group seems appropriate to this work, as well, but more limited and directed investigations of certain topics is also very much conceivable. Let me suggest a few such examples about choices of information systems for specific information-activities.

One aspect of the model suggests that assessments of the relevance of information is made, in part, from the understanding of how the information relates to a project (in general) or a problematic situation
(specifically) that is owned by the individual or by someone else, and, in part, from the priority that is given the information systems from which the information is offered (see # 7:20 and sub-section 9.3.1). A hypothesis can be developed from this, and empirically tested in order to shed light on what variables are significant for the weight that is given information systems and problem-ownership by individuals. Whether or not there is any significantly recurring pattern would be most elucidating as to what extent everyday information behavior are guided by systematic judgments of relevance and aspects that are situated in the particular circumstances.

Another example is from a comment in # 7:19. It concerns the choice of information system when relaying a message in exchange-activities. It is suggested there that a message that is passed on to someone else tends to be made on the same information systems from which it was encountered. I suggested a 'collocation-rule' that guides the choice of information system in such a direction. The suggested formulation to the collocation-rule, which also can be framed as a hypotheses and put to empirical tests, states that: 'Information that is found or encountered on a given information system or information service, and that is passed on, referred to, or talked about, is likely to be so by the very same information system or information service, or the most adjacent and convenient information system or information service.' An investigation to this would explicate what acceptable collocations of information-activities and information systems there are, and on what foundations such relation rest. Even if 'convenience' would turn out to be the dependent variable, it would be instructive for innovations of information services.

9.5.3 Usefulness Revisited

The third route of future research is to perform surveys of representative population samples on aspects of information behavior that are considered relevant. This does not have to result in 'statistical fictions' that are of interest only to market research, but can very well deal with genuinely social scientific problems.

This approach is a next step to comprehensive research on usefulness to discover the prevalence and variation of information behavior. The model that I have developed makes for a guide from which surveyable questions can be formulated.
The approach can be a large sample involving diaries as well as survey-interviews, and it would offer data from which conclusions can be drawn on the information habits of the general public, such as source-preferences, time-allocation, and aspects of content-preferences. Differences and similarities could be distinguished for categories of users defined by gender, geography, age, education, income, or any other relevant distinction. This relates back to the very first few sentences in the introductory chapter, and to the knowledge interest that has motivated this research: to paint a comprehensive picture of the overall effects that the Internet has as it is becoming part of everyday life.

Among the more important questions that can be probed from such data, I mention two examples below.

In # 7:13 I voiced a suspicion that a substitution of turning to the WWW instead of the TV might be taking place, and that the substitution is made of certain information-activities. Specifically, that the TV will continually be used for emotional and ‘entertaining’ purposes, and less for cognitive and ‘informing’ purposes. The data that I suggest to be collected would establish the prevalence of such an effect, and a longitudinal study would disclose any such a shift if it indeed is taking place. Considering the concern in media and mass communications research of a general leveling of media products, any such tendencies would obviously be valuable to know ahead of time.

Relating to the above is a more general question of the extent to which access to the Internet in everyday life empowers its users. With ‘empowering,’ I mean that it offers the means to acquire information necessary to make informed decisions, and the means to communicate with other individuals and public functions, as well as voicing opinions and making contributions to a general debate in a community or on a civil agora. If data can be collected on the prevalence and strategies to resolve projects and problems, and the relative roles of different information systems and face-to-face exchanges, there would be a foundation to start discussing such an issue. As long as this can be done without intrusions of privacy, it is motivated by a concern for a digital divide that is more profound than a mere matter of haves and have nots.
9.6 A Few Final Words

Whereas technology matters, it has been an intention with this research not to look at what specific technology is being used. It requires a constant reminder to stay platform independent in order to look for what forms of problematic situations and projects that permeate a household, and what activities are engaged in as responses to such situations.

The study is made in a specific time at the turn of the millennia, and in specific cultural settings, which is one large and one medium sized town in Sweden. Even though the ambition is to identify aspects of the phenomenon of using information systems in everyday life that are not totally anchored to this time and place, social practice changes as technology changes, which mean that the results of this study cannot be totally dislocated from its time and place. I do hope, however, that what is found here is a model of information behavior that is not so much bound to the specific artifacts as they are bound to the people and their wants, and to the culture of this time and place.

There are no definitive answers to the question of general applicability. The model is a system of theoretical propositions about information behavior in everyday life, and as such, it is applicable to the phenomenon as it exists beyond the examples of the ten cases.

I submit this model for further research directed to pursue the issue of usefulness. Using the model and the categories to guide the formulation of survey questions, it will be possible to study comprehensively the variations of information habits, which is greatly needed.

* * *

In general terms, the respondents make use of the Internet in ways that they see fit and that further the wants and interests that make up their everyday life. Many of them find great utility in managing the business of their household, maintenance of social relations over email with near and far away kith and kin, orienting themselves as consumers, making occasional reservations and purchases. In accordance with their personal interests, they find ways of maintaining and furthering their personal hobby, pastime, and curiosity. Not only does access to the Internet in everyday life change some of their habits and practices of information-activities, it also adds to them with new dimensions; They consider email as something new, it affords a type of sociality that is new and valued to them; the newly found access to such masses
of information is not compareable to anything they had before, and they continue to make sense of it and to exploit it at their discretion.

While the Internet plays a modest role in the lives of most of the respondents, it is only because it is made commonplace and is becoming an everyday thing. Access to the Internet and the uses of it gives them leverage, and whether or not this lever may eventually move the earth (see section 1.1), it does make a difference in their everyday lives.
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Glossary of Terminology

This list includes terms and neologisms that are central to this research. It is intended only to offer a recall of terms that are discussed in the text, not to add anything new.

 ACTIVITY / ACTIVITIES. Actions taken by an agent. The performance of some physical or mental process. Distinguished here as either life-activity, or information-activity.

 BEHAVIOR. ‘Behavior’ is used in this document as it is used in everyday life. It is taken to include, but is not limited to, individual subjectivity, emotions and cognitions as relevant aspect of interactions between a person and their surrounding environment; guided by conscious planning and strategies, or by habit and practice situated in particular circumstances. See also information behavior.

 BROWSE / BROWSING / BROWSE-ACTIVITY. An information-activity relating to seeking and gathering information behavior. Defined as an act of moving in a limited environment, with some level of perceived probability to encounter a resource of some value.

 CHANNEL. Sometimes used synonymously with information system. More particularly, channel refers to a technological means to communicate messages.

 DATA. From Latin, ‘datum’, meaning ‘the given’, or ‘gift’. It suggests that which is given off of that which is perceived. See also Information.

 DRESS / DRESSING / DRESS-ACTIVITY. An information-activity relating to communicating and giving information behavior. The suggested label for activities where information is expressed by an individual. The putting of thoughts, emotions and images in words, texts, pictures, images and music, to be exchanged or imparted.

 CIRCUMSTANCES / CONTEXT. ‘Context’ covers all ‘circumstances’ that are relevant to uses of information systems in everyday life. Four specific circumstances have been investigated here: Environment, ICT-Setting, Information-Activities, and Outcome & Change.
ENVIRONMENT. One of four circumstances to which the user is understood to relate. It encompasses the properties of a setting in which social and physical actions take place, and it includes the presence of other people, projects and problematic situations.

EVERYDAY LIFE. The type of context of the users that this research concerns. It extends outside of the household and includes every private and social aspect of an individual. It excludes work-related activities but not private activities performed at the time and place of work.

EXCHANGE / EXCHANGING / EXCHANGE-ACTIVITY. An information activity relating to a communicating information behavior. Represents the bi-directional acts of dressing and unfolding in an ongoing reciprocal process.

ICT-SETTING. One of four circumstances to which the user is understood to relate. It includes the computer, the telephone and the television, but also other information and communication technologies and artifacts that mediate information, e.g. books and papers. What are available in the ICT-setting are resources that may be of utility for subsequent information-activities.

INFORMATION.

Defined: The immaterial reference to which a material symbol or sign is connected by social convention, or 'symbolic content', for short. This definition draws on Bateson’s definition of information as 'a difference, which makes a difference'. It is understood that an individual construes information when 'a difference' (understood as data) 'makes a difference' (understood as having effects on knowledge). For the purposes of this research, I prefer to narrow the definition of 'information' to concern humans informing humans, mediated or not, by way of symbolic display. It is understood to include, as forms of expressions from which information can be construed, conventional text, talk and images, but also music, pictures, movies, the ringing of a telephone, mimicry or any other symbolic display. As information is construed it is understood that its effect can be cognitive, emotional, and behavioral.

Conventional use: Most often in the text (and indeed in everyday life) 'information' is used when talking about it and the roles that it plays, rather than about what it actually is. When information is treated as an object I understand it as an-object-carrying-signs-with-symbolic-content. When it is treated as knowl-
edge, I understand it as a set-of-symbolic-content-that-leadsomeone-to-a-set-of-beliefs. And when it is treated as process I understand it as exchanges-of-signs-with-symbolic-content.

INFORMATION-ACTIVITY. One of four circumstances to which the user is understood to relate. The performing of a predominantly mental process, which may include a physical process directed at manipulation of information. Interactions with abstracts (e.g. ideas, theories and messages), by the means of concretes (e.g. books, ICTs and telephones), and mental processes (e.g. self-consciousness, assessment and perceptions). Part of everyday life activities (see also life-activity). Appears in the categories search & retrieve, browsing, monitoring, unfolding, exchanging, dressing, instructing, publishing.

INFORMATION AND COMMUNICATION TECHNOLOGY (ICT). The technological artifacts that are used to create, store, manipulate and transfer sound, images and text, e.g. computers, modems, cables and peripheral equipment, telephones, cell phones, pagers and other electronic machines and devices. In a wider sense it encompasses artifacts such as pen and paper, books, documents, pictures, and television sets. Synonymous with information technology. Part of information system.

INFORMATION BEHAVIOR. Represents in a vocabulary common in Information Studies, human behaviors that are associated with information. It includes, but is not limited to, individual subjectivity, emotions and cognitions as relevant aspect of interactions between a person and their surrounding environment; guided by conscious planning and strategies, or by habit and practice situated in particular circumstances. Expressed as seeking, gathering, communicating, and giving information, and as more particular information-activities. See also project.

INFORMATION SERVICE. The organized use of rules and procedures (e.g. the conventions of writing and speaking and the protocols of the Internet and the WWW) that become a function of utility when given specific form (e.g. the contents of a newspaper or a web page, and a broadcast on radio or TV) and applied on an information technology. Part of information system.

INFORMATION SYSTEM. Represents the aggregate of information and communication technologies and information services. It encompasses both artifact and service-aspects. It is synonymous with source, medium, media.
INFORMATION TECHNOLOGY (IT). See *Information and communication technology*.

**INSTRUCT** / **INSTRUCTING** / **INSTRUCT-ACTIVITY.** An *information-activity* relating to giving *information behavior*. An activity of imparting *information* and making one’s wishes known to others or making statements. The giving is social but unidirectional from the individual to an anonymous or generalized counterpart, which may be an institution, a representative of an institution, or an automated *information system*.

**KNOWLEDGE.** The structure of beliefs about the world that someone holds. See also *information*.

**LIFE-ACTIVITY.** The performance of a predominantly physical process, which may include a mental process directed at corporeal movements in space and time and manipulation of physical reality. Part of everyday life activities (see also *information-activity*).

**MEDIA** / **MASS MEDIA** / **THE MEDIA.** Refers to the industry and products of mass-communication.

**MEDIUM** / **MEDIA’S.** Singular and plural synonyms with Information System as it presuppose both a technology and a mediating service.

**MONITOR** / **MONITORING** / **MONITOR-ACTIVITY.** An *information-activity* relating to gathering *information behavior*. Recurrent meetings with familiar *sources* and services, where the sources turned to are intentional, and the information gathered is incidental. The monitor-activity, in part, reaffirms the agent by providing a stable and predictable form, and in part, supplies valued *information*.

**OUTCOME & CHANGE.** One of four *circumstances* to which the *user* is understood to relate. Represents manifestations of the *information behavior*-process. Outcomes are the consequential events of *information-activities* that can be found as an individual’s feelings, thoughts and actions. Some outcomes are temporary and others more lasting. The more durable outcomes may induce changes that appear as modifications of behavior or of available *resources*.

**PROBLEM** / **PROBLEMATIC SITUATION.** Situations in *everyday life* that call for actions, either as *life-activity*, or as *information-activity*. Keyword for needs, wants, desires, requirements and demands for information, sociality or physical action. Problems are understood to relate to a *project*. When the attainment of some goal within a project requires input of action or *information*, there is a problematic situation that is resolved by such input. Or the other way around: Each singular action is in response to a problematic situa-
tion that pertains to some project. A problem may be owned by the individual or by someone else.

PROBLEM DOMAIN. Synonymous with project as that is the domain in which specific problems arise.

PROJECT. Understood as an objective of an individual, that is possible to label and that constitutes a domain where the carrying out of a (perhaps vague) plan imparts problematic situations. Each activity in the unbroken sequence of activities in everyday life relates to the circumstances of some project. Projects appear in activities that are related to each other but scattered in the chain of events that make up everyday life.

Generic project: Projects that are common to all individuals in everyday life (e.g. caring for others, staying up-to-date).

Specific project: Projects that are common to only one individual, or a sub-community of individuals, in everyday life. May pertain to a life-situation (e.g. childrearing), or interest (e.g. stamp-collecting).

Change oriented project: A form of project that is limited in time and directed to establishing a new order in everyday life.

Pursuit oriented project: A form of project that is not limited in time but is part of the order of everyday life.

PUBLISH / PUBLISHING / PUBLISH-ACTIVITY. An information-activity relating to giving information behavior. To announce or post formally or in public. It relates to some particular source and is directed to the public expected to encounter that source. The recipients of this information can be on any level, from an unspecified community to the general public.

RELEVANCE. The sense in which information has an effect on an individual. Individuals assess relevance on a continuous basis in a process of differentiating among sources and information encountered. When confronted with information the individual is understood to ask, ‘To what is this relevant?’ rather than ‘Is this relevant?’, and the individual seeks for a construct of beliefs (i.e. knowledge) to which that information has effect. The person will choose a construct that will maximize the relevance of the information. Thus, if the new information has any effect on a construct, it will be relevant for that construct. Relevance is understood to be judged as high when the affected construct relates to a project or problem.

Social relevance: The matter of assessing how information is relevant for someone else’s set of known projects or problems.
RESOURCE. Necessities that are instrumental to achieving purposes. An information system may be a required resource for an information-activity to be performed. Information may be a required resource for a decision to be made.

SEARCH & RETRIEVE / SEARCHING / SEARCH-ACTIVITY. An information-activity relating to seeking information behavior. It is an active and directed effort of recovering information or making it newly available, involving some searchable information system. It is normally not confined to one instance of concerted efforts, but as several successive searches at different points in time and on different information systems.

SIGN / SYMBOL. A symbolic display that represent something that is absent, its meaning being shared by social convention, and its content being construed by the perceiver. It is rendered and transferred physically (e.g. as written letters, spoken words, or digital codes).

SOCIAL. Besides of a generic and quite trivial use of the word ‘social’ it is occasionally used in a more precise meaning that reveals the extent to which other people are included in micro-social interactions. In such cases it is intended to denote a small group of people with direct contacts, rather than a larger group that may have indirect contacts, is less well defined and are relatively more anonymous.

SOURCE. Synonymous to information system and medium.

UNFOLD / UNFOLDING / UNFOLD-ACTIVITY. An information-activity relating to gathering and communicating information behavior. To reveal or be revealed, or to develop or expand or be developed and expanded. It denotes activities of continually directed attention towards information in order to take part in content. As an information-gathering behavior, the unfolding activity does not have to be extremely rich with information but can be a mainly pleasurable activity. As a communicating activity, unfolding is the part of communication where a narrative unfolds before the individual. Unfolding can also be understood to be active, in that the individual is performing the unfolding, or passive, in that someone else or something else is agent in developing something that unfolds before the individual.

USEFULNESS. Refers to the leverage or utility of a resource, e.g. an information system, in order to achieve a desired outcome.
USE / USER / USES. 'User' refers to a person who interacts with information systems to their purposes. 'Use' and 'uses' refer to a person's interactions with information systems.

Utility. The purposeful use that is made of a resource.
Hej!

Som du vet är jag doktorand på Linköpings universitet där jag skriver en avhandling om "Informationsvanor". Det handlar om hur människor hanterar informationsteknik och olika medier i vardagen.

Många människor hanterar varje vecka en mängd olika medier, som telefon, tv och Internet, men också tidningar, böcker och andra skrivna medier. Detta projekt går ut på att se på sammanhanget av alla dessa medier och hur vi använder dem i våra hem.

*Jag behöver hjälp*

Jag letar efter personer som vill delta i projektet.

Det kan inte vara någon som jag själv känner eftersom vänskap kan komma att påverka forskningen. Men det kan mycket väl vara någon som Du känner.

Det viktigaste kravet är att dessa personer har Internet i sitt hem (OBS:det räcker alltså inte att bara ha Internet på jobbet) och använder det åtminstone någon gång då och då.

Totalt söker jag cirka 15 personer som vill delta genom att ställa upp på intervjuer vid några tillfällen. Dessa personer kan vara gamla eller unga, män eller kvinnor, med lång eller kort utbildning, bo i en stad eller på landet och så vidare. Alla som har Internet hemma kan vara intressanta. Det finns ingen "fel" eller "olämplig" person för detta. (Den enda anledning till att inte komma ifråga skulle vara att de är alltför "lik" någon som redan är med i studien.)

*Känner du någon som har Internet hemma?*

Jag är mycket tacksam om du vill fråga dem om de kan tänka sig att delta i detta projekt.

Be dem kontakta mig, eller be mig kontakta dem, så berättar jag mer.

Tack på förhand!

Anders Hektor, andhe@tema.liu.se, telefon 08-466 96 77

PS: Om det här e-brevet skulle börja cirkulera i cyberrymden, så är det inte aktuellt längre än till och med mars 1999. DS
Appendix 2: Template for Screening Interview

Underlag, fas I

Beskriv syftet:
- Att beskriva exempel på användning av IT, särskilt Internet, så som det används i hemmet.
- Att studera vad det är som formar den användning man faktiskt har.
- Att rapportera detta i en bok, klar om ca 2,5 år.

Anonymitet: Bara jag har tillgång till materialet, och du får ett alias i texten.

Arbetets gång:
- Intervju i hemmet, ca 2 timmar.
- Dagbok över kommunikation med tidsanvändning.
- Intervju utifrån dagboken
- Alltså, några tillfällen under våren och eventuellt en uppföljning nästa vår.
- Börjar nu med några korta frågor, om du kan tänka dig att delta i detta?

Notera och fråga efter:
- kön
- ålder
- boende (adress) / storlek och typ / hushållets storlek
- yrke/arbetsuppgifter och arbetsplats
- formell utbildning och vidareutbildning

Till vad använder du:
- Internet / e-post / WWW
- hemma och på jobbet?
- ungefär hur ofta?

- Har du tillgång till / Brukar du:
  - Telefon / mobiltelefon / fax
  - Teve (antal)

  - Tidningar - dagliga - periodiska - prenumerationer
  - Böcker (i tid per vecka, månad)
  - Andra intressen

Boka tid för intervju
Appendix 3: Template for Interview No 1

Är det okej att använda bandspelare?

**Upprepa syftet**

**Fördjupliga vad jag menar med Internet**

Har Du några frågor innan vi börjar?

**Jag skulle vilja börja med att tala lite om Internet i allmänhet...**

Kan du berätta om när du först hörde talas om Internet

...först kom i kontakt med Internet / använde Internet

(sammanhang, när, var, fördjupa)

...och sedan skaffade du dator / Internet hemma...

(Sammanhang, när, vilka)

Kan du lista fem skäl till varför man skall ha Internet hemma?

...och fem skäl till varför man inte skall ha Internet hemma?

(Haka på, fördjupa, jämför, annu/lunda)

nu/då)

Hur kunnig anser du att du är på att hantera Internet?

(teknik / innehåll. Jämför med andra, skala)

...jämfört med andra som du känner?

Hur intresserad är du?

(techniskt eller annat intresse)

...jämfört med andra?

Varifran kommer intresset?

Om något inte fungerar, vad gör du då?

(teknik eller innehåll)

(vänder sig till vem, relation, support)

Kan du se att det är någon i din omgivning du använder som förebild?

(vem påverkar användningen, resursperson, stöd)

Skulle du säga att du har samma intressen, även på andra områden, som de människor du normalt umgås med?

(ex, du spelar golf men inte de, de seglar men inte du)

**För att gå över till e-post...**

Kan du rangordna de tio eller färre personer som du oftast e-postar med?

(lista på papper, vem, relation, ordning, hur ofta)

...vad för slags kommunikation har ni, och hur ofta?
Appendix Three: Template for Interview No 1

(vänskaplig, professionell, vardaglig, ensidig)
Om du skulle vara utan e-post under en längre tid, vad skulle du sakna?
...skulle någon kontakt dö ut?
...hur skulle kontakterna ersättas?
...är det annorlunda med andra, som inte är med på denna listan

relation mm)

Skickar du vad som helts på e-post, även ”känsliga” saker?
(kontonummer, skvaller. fördjupa tillit)

Har det hänt att du fått e-post från någon du inte känner?
...skickat till?
Kan du ge något exempel på när du haft verklig ”nytta” av e-post?
(blivit irriterad, glad, frustrerad)
Kan du se att livet i ditt hushåll har förändrats av e-post?
(arbeta mer, spar tid, kan vara hemma)
Om du skulle jämföra e-post med något annat, vad skulle det vara?
(brev, telefon...)

När de gäller webben...

Händer det att du får eller ger webb-adresser?
(vem, hur ofta, sammanhang, betydelser)
...håller du utkik efter ”tipps” åt någon, eller någon åt dig?
...funkar det på samma sätt med andra saker, t.ex tidningsartiklar?

Hur kunnig / intresserad tycker du att du är på att hitta det du vill?
(ev upprepning, jämför, skala osv.)
...jämfört med dem du känner?
...skulle du vilja vara mer kunnig? Är du nöjd?

Kan du se att webben påverkat livet i hushållet?
(ev upprepning)

Med vad skulle du jämföra webben?
(bibliotek, teve, tidning...)

Vem vänder du dig till om du får problem?
(upprepning?)

Har du handlat på nätet?
...lämnat ut kortnummer?
...hur ser du på säkerheten?

Vilken tilltro sätter du till sådan information som du träffar på på nätet?
(haka på deras kategorier: olika typer av information)
...hur gör du bedömningen?
Appendix Three: Template for Interview No 1

Brukar det "pratas" om webben eller om Internet i något sammanhang?
(vem pratar, vilket sammanhang, vad sägs)

Vad betyder ordet "informationsstress" för dig?
(har de hört det förrut, Vad innefattas, vilka
sammanhang, fördjupa,
kontrastera)

En sista fråga...

Nu har vi talat om Internet ganska länge, har du tidigare haft anledning att
fundera på Internet: vad det är, vad det betyder
(i allmänhet och synnerhet)
(med vem, vilket sammanhang, hur går
snacket, vad
 tycker du?)
Appendix 4: Letter for Instruction of Diary

Hej!


Dagboken har inga rubriker men man för in uppgifter om
- tiden: från och till
- vad man gör: är den viktigaste rutan
- var man är: om det inte framgår av vad man gör
- med vem: den man talar med, skickar e-post till osv.
- övriga kommentarer: Frivilligt.

I dagboken noteras i princip allt man gör under hela dagen. Särskilt viktigt är det att få med tillslagen då man läser eller skriver något och talar med människor. Ett tips är att skriva dagboken löpande, det är svårt att försöka minnas i efterhand vad man gjorde och hur länge.

Om det blir några problem är det bra om du hör av dig.
Vänligen

Anders Hektor
### Exempel Måndagen den 19 april:

<table>
<thead>
<tr>
<th>NÄR</th>
<th>VAD</th>
<th>VAR</th>
<th>VEM</th>
<th>KOMMENTAR</th>
</tr>
</thead>
<tbody>
<tr>
<td>5:00</td>
<td>Vaknar av radion</td>
<td>Hemma</td>
<td>Ulrika</td>
<td>fy vad tidigt!</td>
</tr>
<tr>
<td>5:30-5:38</td>
<td>Går till bussen</td>
<td></td>
<td>Ensam</td>
<td></td>
</tr>
<tr>
<td>5:38-6:05</td>
<td>Buss till Slussen, t-bana till centralen.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6:05-6:18</td>
<td>Hämter biljetter i automatfen. Väntar på tåget</td>
<td>Möter Peter som också skall till Linköping</td>
<td>kallt!</td>
<td></td>
</tr>
<tr>
<td>6:18-7:25</td>
<td>Åker tåg till Linköping. läser jobb-artiklar och Metro.</td>
<td></td>
<td></td>
<td>ensam</td>
</tr>
<tr>
<td>7:25-7:45</td>
<td>fikar i bistrovagnen</td>
<td></td>
<td>med Peter</td>
<td></td>
</tr>
<tr>
<td>7:45-8:37</td>
<td>Läser bok av Silverstone</td>
<td></td>
<td>ensam</td>
<td></td>
</tr>
<tr>
<td>8:46-9</td>
<td>Åker buss till universitetet.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9:15-12</td>
<td>Seminarium med NSU. Ringer från mobil'en till Ulrika i pausen.</td>
<td>Seminariet</td>
<td>Britt, Jörgen, Lennart, en tje från K, Johan och en kille från IDA</td>
<td>Bra möte som förde framåt.</td>
</tr>
</tbody>
</table>
Appendix 5: Example of Individually Prepared Follow-up Questions for Interview No 2

(Individually specific questions kursiverade)

Uppföljning N.N

Intervju:

- Du nämnde att när du träffar folk i föreningsliv så var de inte uppkopplade utan ganska okunniga om Internet. Är du organiserad i någon förening?

Dagbok:

- Skulle du säga att det här var en ”vanlig” vecka?
- Om inte vad skilde sig?
- Är det något i dagboken som du tycker saknas, som inte kommer fram?
- På namnlistan, är det någon som saknas?
- Vilka är relationerna till, och mellan, de olika personerna på namnlistan?
- Använde du e-post hemma under veckan?
- Surfade du under veckan?
- Ungefär hur mycket tittade du på teve?
- Ungefär hur mycket talade du i telefon hemma? Mobil?

Är det vanligt (vana?) eller händer det bara ibland att du:

- Gör te till Eva mm.
- Cyklar till jobbet? Med mobilen på?
- Kollar e-posten Fm & Em? Vid tid eller för att fylla tid?
- Tetris före hemgång
- Promenad i trädgården
- En stund teve? Hur dags, vad, hur länge? Flärpande eller målmedvetet?
  - Upprätthålla kontakt med Eva, Fredrik, annan släkt tel (e-p?)
  - Upprätthålla arbetet i privatlivet mob, tel, e-p, tidningar
- Spela gitar
- Sesam bank

Du hade en del ‘Händelser’ och ‘projekt’ denna vecka:

(fråga om de tillfällen där IT användes eller kunde ha använts)
Appendix Five: Example of Individually prepared...

- Mor på sjukhus
tel, besök, mobil
- DN-artikel
tidn, tel, mob.
- Boka bord.
tel.
- Födelsedag
tel, sång, böcker, e-p.
- Beställa blommor
e-p
- Hämta Johan
- P-lisa i Uddevalla
  Lapp
- Söka diabild
- ordna svensexa
tel.
Appendix 6: Template for Interview No 2

• "Antag att hela internet försvann! Hur skulle detta påverka dig och ditt liv? Hur skulle du ersätta Internet, om alls? Vilken är den verkliga nytan, den som inte kan ersättas med tidning, bibliotek osv?
• Varför är information bra? Till vad, vilket slags, vad använder den till?
• ...på teve, textteve, radio, tidningar, serietidningar? Böcker? Hur ser den "perfekta" tevekvällen ut? Preferenser? (Mer om hur man bedömer information: vad som är kul/trist, bra/dåligt, önskvärt/förkastligt osv)
• Vad läser du i en tidning, till vardags?
• Vilka erfarenheter har surfarna av att komma vilse? Vad betyder det för dem? bra/dåligt?
• "Tänk på när du surfade senast, vart var du, vad gjorde du? Vad gav det? Hur länge hör du på? Vilket var syftet?
• Kan surfarna ge exempel på bra hemsidor? Vilken motivering?
• När du surfar, vilken attityd har du: Det finns en lösning eller jag kan inte?
• Har de egen hemsida? Funderat på att skaffa?
• Har du kollat in något politiskt parti på nätet? Fack?
• Följer du Internets utveckling i andra medier?
• Det där med kortnummer, upplever de andra risker, t.ex med virus, intrång, stöld?
• Går närmare in på vilka de e-postar med, gärna tillsammans med dem framför datorn. Hur ofta, vilket nätverk, vilka innehåll, vilka betydelser?
• Vilken diskussionsgrupp är du med i? Vad ger det? Bidrar du själv? (Kan det ge en karakteristika?)
• Sparar du all e-post någonstans? Har du under-lådor?
• Hur ofta händer det att du kollar e-posten och det är tomt? Varför kollar man så ofta?
• Hur klarade du dig utan e-post förut?
• Vad hindrar dig från att använda internet mer?

Teknikanskaffning
• Innan de skaffade dator hemma, hur länge gick de och funderade över det, ekonomi, drivande person, märke, kostnad, typ?
• När tänker du köpa en ny? Hur ser du på det?
• Hur hade ni resonerat om det inte kommit personalköp? Talades det om det på jobbet?
• Har du spel på din dator som används?
• Hur är arbetsplatsen kring datorn organiserad? Har den alltid stått där? Ergonomi?
• Pratar familjen mindre med datoranvändaren?
• Kan internet vara ett sällskap för den som använder det?
• Har de köpt andra nymodigheter? (Bakmaskin, Wok, bil, andra saker?)
• Har ni Telefonsvarare? Använder ni den för att ”filtrera” samtal?
• Vilka funktioner använder de i mobiltelefonen?
• Vilka förväntningar på framtiden har du? Är du i grunden positiv eller negativ?
• ”Känner du dig som en medborgare i ett info-, kunskapssamhälle?” Varför, hur då, beskriv?
Är det status att använda Internet, mobil osv?
## Appendix 7: Tables of Outcomes

### Table 8:1. Outcomes of Search & Retrieve reference information

<table>
<thead>
<tr>
<th>Environment</th>
<th>Problem</th>
<th>Project</th>
<th>ICT-Setting</th>
<th>Info-Activity</th>
<th>Outcome &amp; Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respondent</td>
<td>Life-Activity</td>
<td>Immediate / Deferred</td>
<td>Pursuit / Change</td>
<td>Lexicon from—85. The Internet</td>
<td>S&amp;R on &quot;Ray Charles&quot;</td>
</tr>
<tr>
<td>Agneta Cfo</td>
<td>R&amp;R: Debate with son...</td>
<td>I: ...about who's blind, Stevie Wonder or Ray Charles</td>
<td>P: Social maintena- nce</td>
<td></td>
<td>Enlightenment Satisfaction</td>
</tr>
<tr>
<td>Agneta Cfo</td>
<td>daughter has problem...</td>
<td>Im: ...with thyroid gland</td>
<td>P: Social maintena- nce</td>
<td>The internet</td>
<td>S&amp;R on &quot;thyroid gland&quot;</td>
</tr>
</tbody>
</table>

Debate resolved: "200 hits. 2nd chapter said he was blind since age of 6. So we got information about that." Lexicon is old.

Soc. concern: Got info on conditions and symptoms. "found out what I needed to know"
Continued: Table 8:1

<table>
<thead>
<tr>
<th>Maria</th>
<th>I: ...by unknown surgeon</th>
<th>P: Social maintenance</th>
<th>The internet</th>
<th>S&amp;R on surgeons name</th>
<th>uncertainty doubt</th>
<th>Soc. concern: Found two articles to the effect that surgeon had been fired for mistake with a patient. Doubted source. Never knew.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CiO: mother to have operation in a few days…</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>R&amp;R: Telling a Canadian on hamradio about him living on a small farm but having other occupation, calling it being a “moonshine farmer”</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 8:2. Outcome of Search & Retrieve market information

<table>
<thead>
<tr>
<th>Environment</th>
<th>Problem</th>
<th>Project</th>
<th>ICT-Setting</th>
<th>Info-Activity</th>
<th>Outcome &amp; Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respondent</td>
<td>Life-Activity</td>
<td></td>
<td></td>
<td></td>
<td>consequential events</td>
</tr>
<tr>
<td>Agneta</td>
<td>Household care: Preparing to purchase a new apartment...</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>I: ...but does not know how to go about it.</td>
<td>C: The move</td>
<td>The Internet</td>
<td>S&amp;R on &quot;Bank&quot;</td>
<td>Enlightenment Orientation, Sense of direction, Satisfaction, Knew how to act</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Behavioral orientation: When I came to the bank I knew what to ask for. Felt more secure.</td>
</tr>
<tr>
<td>Eva</td>
<td>R&amp;R: Planning to go to a dance-party at a restaurant...</td>
<td>I or D: ...and wanted to know their program.</td>
<td>The Internet, at work</td>
<td>S&amp;R</td>
<td>Frustration, embarrassment</td>
</tr>
<tr>
<td></td>
<td></td>
<td>C. the salsa party</td>
<td></td>
<td></td>
<td>social stigma? Did not find the restaurant. Ended up on homepage of artist whose music I hate. It was embarrassing. Felt a bit silly.</td>
</tr>
<tr>
<td>Eva</td>
<td>R&amp;R / CIO: Considering a last-minute trip with children...</td>
<td>I: ...and needed information on options on trips abroad.</td>
<td>The Internet</td>
<td>S&amp;R</td>
<td>Enlightenment, Frustration, Dissapointm., Regret, Base for decision</td>
</tr>
<tr>
<td></td>
<td></td>
<td>C: vacation trip</td>
<td></td>
<td></td>
<td>Behavioral orientation: It was more expensive than if I had bought it 6 months ago. Made me angry. So we stayed in Sweden.</td>
</tr>
</tbody>
</table>
Continued: Table 8:2

<table>
<thead>
<tr>
<th>Johan</th>
<th>D: ...and needed to find a place with skiing-trails suitable for children.</th>
<th>C: vacation trip</th>
<th>The Internet</th>
<th>S&amp;R on skiing resorts for maps and prices.</th>
<th>Orientation</th>
<th>Behavioral orientation: It made us decide on what to go for, as we knew what we wanted. Only had to make a phone call to order.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Johan</td>
<td>D: ...but I thought it was just a dream.</td>
<td>C: the pool</td>
<td>The Internet</td>
<td>S&amp;R on pools</td>
<td>Orientation Probl. Underst. Clarity Sense of direction Base for decision</td>
<td>Beh. Orientation: There was a great place where all vendors were describing their stuff. We ordered a catalogue.</td>
</tr>
<tr>
<td>Johan</td>
<td>D: ...and wanted to know my options.</td>
<td>C: the baseball glove / Shopping</td>
<td>The Internet</td>
<td>S&amp;R</td>
<td>Confusion Orientation frustration</td>
<td>Beh. Orientation: There were so many different kinds of gloves. I did not know which would suit him.</td>
</tr>
</tbody>
</table>
Table 8:3. Outcomes of Browsing

<table>
<thead>
<tr>
<th>Environment</th>
<th>Problem</th>
<th>Project</th>
<th>ICT-Setting</th>
<th>Info-Activity</th>
<th>Outcome &amp; Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respondent Life-Activity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Immediate / Deferred</td>
<td>Pursuit / Change</td>
<td>The Internet or TV</td>
<td>Browsing as looking around</td>
<td>Potentially enlightening encounters. Orientation Release Reaffirmation Stress Regret Recordings Exclusion</td>
</tr>
<tr>
<td>Any/All R&amp;R:</td>
<td>&quot;...lured onwards in the direction that offer greatest interest&quot;</td>
<td>Any/All</td>
<td>The Internet or TV</td>
<td>Expecting the browsing to provide valued resources. Additional familiarization with the environment.</td>
<td></td>
</tr>
<tr>
<td>Disengaged interaction with web-pages or the TV...</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any/All:</td>
<td>&quot;...lured onwards in the direction that offer greatest relevance&quot;</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Engaged interaction with web-pages or TV...</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
Table 8:4. Outcomes of Monitoring

<table>
<thead>
<tr>
<th>Environment</th>
<th>Problem</th>
<th>Project</th>
<th>ICT-Setting</th>
<th>Info-Activity</th>
<th>Outcome &amp; Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eva, Kent, Johan</td>
<td>Immediate / Deferred</td>
<td>Pursuit / Change</td>
<td>'subscribed' Radio-</td>
<td>Habitual Monitor-ing on radio</td>
<td>Reaffirmation Companionsh. Instructed</td>
</tr>
<tr>
<td>Caring for oneself:</td>
<td>...at the right time and</td>
<td></td>
<td>alarm</td>
<td>alarm</td>
<td></td>
</tr>
<tr>
<td>Waking up in the</td>
<td>pleasantly</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>morning...</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All</td>
<td>Immediate / Deferred</td>
<td>Pursuit / Change</td>
<td>Subscribed</td>
<td>Habitual Monitor-ing</td>
<td>Orientation Companionsh. Release</td>
</tr>
<tr>
<td>R&amp;R: Having breakfast</td>
<td>...and get news according to</td>
<td></td>
<td>morning paper</td>
<td>of morning paper.</td>
<td>Social participat.</td>
</tr>
<tr>
<td></td>
<td>routine.</td>
<td></td>
<td>Morning-TV</td>
<td>Morning-TV</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Karl</td>
<td>Immediate / Deferred</td>
<td>Pursuit / Change</td>
<td>Car-radio</td>
<td>Habitual Monitor-ing</td>
<td>Orientation Companionsh. Release</td>
</tr>
<tr>
<td>Transport / R&amp;R:</td>
<td>...and listen to radio according</td>
<td></td>
<td></td>
<td>of choice channel</td>
<td>Social part.</td>
</tr>
<tr>
<td>Driving to work...</td>
<td>to routine.</td>
<td></td>
<td></td>
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</tbody>
</table>

Consequential events:
- Pleasantly instructed about time of day. If lucky there's good music or news.
- Companionship in the traffic and potential encounter with information.
Continued: Table 8:4

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>All</td>
<td>Hh-care / R&amp;R: Manage household communications...</td>
<td>D: ...and keeping track of email inbox.</td>
<td>P: Staying abreast.</td>
<td>The Internet</td>
<td>Regular &amp; irregular monitor-ring of email.</td>
<td>Uncertainty-reduction Clarity</td>
<td>It's fun and a little exciting to see if someone has written something.</td>
</tr>
<tr>
<td>All</td>
<td>Hh-care: Manage household business...</td>
<td>D: ...as it arrive in the mailbox.</td>
<td>Paper mail</td>
<td>Regular monitor-ring of paper mail</td>
<td>Enlightenment Reaffirmation</td>
<td>You just do it, every day.</td>
<td></td>
</tr>
<tr>
<td>Agneta, Leo, Lotta, Maria, Karl.</td>
<td>Transport / R&amp;R: Riding a bus, subway or train...</td>
<td>I: ...and do something at the same time.</td>
<td>P: Staying abreast.</td>
<td>Magazine, paper</td>
<td>Planean or unplanned monitor-ing</td>
<td>Orientation Interest Reaffirmation Companionsh. Release</td>
<td>Companionship and something to do while being in transfer.</td>
</tr>
</tbody>
</table>
>Appendix Seven: Tables of Outcomes

Table 8:5. Outcomes of Exchange activities

<table>
<thead>
<tr>
<th>Environment</th>
<th>Problem</th>
<th>Project</th>
<th>ICT-Setting</th>
<th>Info-Activity</th>
<th>Outcome &amp; Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respondent</td>
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<tr>
<td>Life-Activity</td>
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<tr>
<td>Immediate /</td>
<td>Pursuit /</td>
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<tr>
<td>Deferred</td>
<td>Change</td>
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<tr>
<td>Any/All</td>
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<tr>
<td>Any/All:</td>
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<tr>
<td>Keeping in</td>
<td></td>
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<tr>
<td>touch...</td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>I: ...with Intimates</td>
<td></td>
<td></td>
<td>Face to face, phone, cell phone email</td>
<td>Exchange</td>
<td>Uncertainty reduced.</td>
</tr>
<tr>
<td></td>
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<td>P: mainte</td>
<td>Orientation</td>
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<td></td>
<td></td>
<td>nance of</td>
<td>Reaffirmation</td>
<td></td>
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<td></td>
<td></td>
<td>social</td>
<td>Motivation</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>relations</td>
<td>Companionsh.</td>
<td></td>
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<td></td>
<td>Social support</td>
<td></td>
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<td>Soc. Partic.</td>
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<td></td>
<td></td>
<td></td>
<td>Instructs</td>
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<td></td>
<td></td>
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<tr>
<td>Any/All</td>
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<tr>
<td>R&amp;R / C/O:</td>
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<tr>
<td>Keeping in</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>touch...</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>I: ...with vicinities</td>
<td></td>
<td></td>
<td>phone, Face to face, email, cell phone answering machine.</td>
<td>Exchange</td>
<td>Uncertainty reduced.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>P: mainte</td>
<td>Orientation</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>nance of</td>
<td>Reaffirmation</td>
<td></td>
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<td></td>
<td></td>
<td>social</td>
<td>Motivation</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>relations</td>
<td>Companionsh.</td>
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<td></td>
<td></td>
<td>Social support</td>
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<td>Soc. Partic.</td>
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<td></td>
<td>Instructs</td>
<td></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td>Manage &amp; organize shared context. Reestablishing social relation Confirm normality of situation.</td>
</tr>
</tbody>
</table>
## Appendix Seven: Tables of Outcomes

Continued: Table 8:5

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Any/All</td>
<td>Any / All: Managing meetings...</td>
<td>I: ...with functions.</td>
<td>Any / All</td>
<td>Face to face, phone, email, cellphone, fax.</td>
<td>Exchange</td>
<td>Orientation</td>
<td>Clarity</td>
<td>Frustration</td>
<td>Effectuat.</td>
<td>Managing contingent problems and projects</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any/All</td>
<td>R&amp;R / CiO: Keeping in touch...</td>
<td>D: ...with remotes.</td>
<td>P: Social maintenance.</td>
<td>Email, phone, face to face.</td>
<td>Exchange</td>
<td>Uncertainty red.</td>
<td>Orientation</td>
<td>Reaffirmation</td>
<td>Motivation</td>
<td>Companionsh.</td>
<td>Social support</td>
<td>Reestablishing social relation Confirm normality of situation. Organize shared context.</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
### Table 8:6. Outcomes of dressing activities

<table>
<thead>
<tr>
<th>Respondent</th>
<th>Environment</th>
<th>Problem</th>
<th>Project</th>
<th>ICT-Setting</th>
<th>Info-Activity</th>
<th>Outcome &amp; Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Karl</td>
<td>Life-Activity</td>
<td>Immediate / Deferred</td>
<td>Pursuit / Change</td>
<td>Pen and paper</td>
<td>Dressing a note “getting change”</td>
<td>Recording</td>
</tr>
<tr>
<td></td>
<td>Transport /Hh-care: Need to park car...</td>
<td>I: <em>but has no change for the meter</em></td>
<td>P: sick mother</td>
<td>Managed to avoid fine</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Karl</td>
<td>CfO: preparing a present...</td>
<td>I: <em>accompanied by poem.</em></td>
<td>P: maintenance of social relations</td>
<td>Pen and paper</td>
<td>Dressing a poem</td>
<td>Could offer gift with poem</td>
</tr>
<tr>
<td>Karl</td>
<td>CfO: After visit to hospital...</td>
<td>D: <em>updating his wife on events.</em></td>
<td>C: sick mother</td>
<td>Telling his wife of events.</td>
<td>Supportive exchange</td>
<td></td>
</tr>
<tr>
<td>Kent</td>
<td>R&amp;R: Pursuing hamradio hobby...</td>
<td>D: <em>by keeping database updated.</em></td>
<td>P: Hamradio</td>
<td>Inputting data in log</td>
<td>Recording</td>
<td></td>
</tr>
<tr>
<td>Maria</td>
<td>CfO / R&amp;R: Keeping contact with kith and kin...</td>
<td>D: <em>that are remote.</em></td>
<td>P: Social maintenance</td>
<td>Composing letters with pictures</td>
<td>Supportive exchange</td>
<td></td>
</tr>
</tbody>
</table>

**Thoughts**
- Meadow affairs

**Feelings**
- Improved mood

**Actions**
- Conducted activities