

# Understanding professional work and technology in domestic environments

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## ABSTRACT

Many technologies such as the PC, Internet access, new digital media and advanced telephony are now to be found in the home and are changing (or seeking to change) the ways in which people are entertained, informed and interpersonally connected in domestic environments. In this paper we give our viewpoint of our approach towards an more holistic view on the use of technology in domestic environments. The results are based on empirical work where we in three different studies have been able to observe the need for and the use of modern IT in improving daily-life as well as creating opportunities to be able to perform professional work at home.

## Keywords

Ethnography, Computer Supported Cooperative Work (CSCW), dwelling, every-day technology, architecture.

## INTRODUCTION

The dwelling of the information society will, probably, represent a wide spectrum of activities integrated in time and space. What will happen is that we, to a much greater extent than today, will work from home, shop from home and take care of the elder population in their homes with support from different IT solutions.

We will also increase the use of our domestic environments for professional work. Our key argument is that we will spend more and more time in our homes, where we also will accomplish a wider range of activities, including professional work, than today. The reasons for increased work, and co-operative work as well, in our homes are - despite the prerequisites of available IT tools - among others:

- New social trends and values in a diversified individual perspective where the limits between the private, e.g. the family life, and the public, e.g. work, are loosening up.

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- Changing organizational and economical structure within companies and organizations.
- New attitudes from a political point of view, both national and international.

One way of understanding the use and daily practice of computers in household settings is to perform a series of extensive studies, which explore the longitudinal and cross sectional surveys combined with ethnographic studies. These studies can be used to develop a model of technology based on conveying the use of technology in the home. We suggest that studies based on ethnographic tradition offer a great contribution to the formulation of greater understanding of the home. Our aim is to work towards a framework for the analysis of the social organization of the household as a tool for successfully underlying the design of interactive systems in this area [1].

Another way of understanding different kinds of communication systems in domestic environments is to utilize architectural metaphors in our interpretation of a system. To this date, it seems that the imitations of architectural or urban spaces have been the dominant strategy for most of the multi-media telepresence systems. All of these electronic systems are based on a rationale of projecting architectural props into an electronic space, i.e. a room or a table. We would like to argue that such metaphors should be pushed even further. We are about to experience new ways of communicating in our domestic environments. The technology will, e.g., permit us to break limitations in physical proximity by real-time video communications. Radically different means of connecting places make everyone "their own television broadcaster" and make, i.e., a family home page that opens up the physical family household environment to become more public. We believe that this, among other social issues, will become crucial to whether new technology in domestic environments will gain momentum or fail. Our shared experiences from the CSCW community are here a unique resource to the further study of similar phenomena's in these new environments [2].

## THE STUDIES

In this paper we will mention three related studies. I want to point out that all of these studies are work in progress and still under processing and evaluation. The first study was made to investigate the use of and application for ambient mediaforms. For better understanding of these issues we did a quick-and-dirty ethnographical study. The key issue was to investigate the use and the need of communication technology that could maintain family relations even if family members live apart. Current preliminary results from the studies have resulted in a number of prototypes of new ambient forms of communication. As a next step we are now planning to put some of these prototypes in fieldstudies, and hence be able to specially study the use and richness in these kind of media.

The second study was made in a suburban residential house where different forms of IT services have been tested and evaluated. Examples of those services are new centralized phone-switches, key-less lockers and direct access to/service provider. Based on careful surveys some services have been implemented and are currently in use and under evaluation in approx. 35 dwellings.

The third, and largest, study concerns studies of attitudes and expectations, and later implementing of broadband facilities in residential apartments. The basis for the study is an offer to 400 families to get access to 100Mb Internet for a nominal fee. Roughly 75% of these families volunteered to take part in the study where we have studied how to meet attitudes and expectations to perform the implementations of these kind services. Currently the installation undertaken and we are now in a phase where we start to see some use of the technology. Results from the study have, so far, given us a clear picture of which people who are using and how they are using broadband Internet. Now our prime target is to assess if the expectations have been met and start to observe how the usage evolves.

Apparent from our studies is that the relations towards technology in everyday situations differ in several aspects to the attitude that we have in pure work related situations. Although the situated use of technology, technology determinism's are still more firmly established in the latter case. In everyday situations consumers contribute to the production of the product he/she is using. IT is not only a technology, but also a lifestyle and 'brand mystery'. A product is bought both for its function and for its aesthetic value. A product reveals something about its owner; it can impress and be an indication and a symbol of status. It can be a witness to either good or bad taste. In this way the value of a product is created in a social context. Everyday technology is a social construction; created from human interests, needs, prejudices, and commercial interests. This is not to argue that technologies have a less impact than some of its advocates state, indeed technology profoundly influences peoples' behaviour by creating new possibilities and choices for many everyday situations. However this

will not automatically guarantee that everyone will participate and gain access to the (for example civic) information. It is also easy to overlook that the knowledge is unequally distributed within the population.

## DISCUSSION

We would like to gain a better understanding of the practice of professional work and use of advanced communication technology in domestic environments. One approach is to use empirical research results and methods from CSCW research. To be able to understand the outcome from these studies we also need a more general discussion related to the perception of technology. Once IT was mainly used in workplaces the issue of whether it was appealing, or not, was not in the main focus. Ultimate the new design of IT has made it more accessible and wanted outside the traditional office. This invokes a second question whether the value in a product is totally embedded into the design or if some values of the products are constructed in its use.

The understanding of the relation between technology for professional work and technology for daily-use could be gained in many different ways. Either technology could be seen as a predominant for that work could take place in your home opposed to, in a factory or an office (more common today), or work might even be better done (and be more creative) in the absence of technology (as most of my writing is done with pen and paper on the kitchen table). A third interpretation of the relation between the increasing quantity of advanced technology in homes and the amount of professional work at home is to conceive them to fulfill a double purpose. Technology both serve a social value as well as a work related value. The technology push and the widened range of activities in the domestic life will lead to an extended need for communication facilities. These will diversify into a set of communication units for different kind of use. Then, e.g., the motivation for acquiring some communication technologies in domestic environments could be derived from the dual purpose of fulfilling both social and professional needs.

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