

Mobile E-Work to Support Regional and Rural Communities

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INTRODUCTION

Telework, or e-work as it is now more frequently called in Europe, means working outside one's regular workplace, utilising sophisticated ICT. E-work is an alternative form of organising work, a "love child" of the information society. E-work manifests itself in numerous forms and modes. These various solutions emerge as an evolutionary process along with the technological developments, economic pressures, and changes in socio-cultural patterns such as new information-age lifestyles (e.g., Castells, 1996; Heinonen, 2000). E-work can be carried out at home, in a telework centre or at any other facility. It can also be done as a mobile mode on a train, bus or some other vehicle, as well as at airports, railways and bus stations—in other words on the move from one place to another. Such mobile e-work is primarily increasing, owing to technological and social developments. ICT has become smaller in size, more portable and more efficient.

MOBILE E-WORK AS A SOCIAL INNOVATION

Mobile e-work is, however, not only a result of technological breakthroughs and penetration of ICT equipment in society. It is essentially a social innovation where various goals coincide. First, it may ease the stress of working life when the long commuting hours can be used for reducing the work load. Second, it is an instrument for employers to recruit people from a wider geographical area. Last, but not least, the implications of mobile e-work on regional development and rural communities must be taken into careful consideration (Heinonen, 2001). Along with various obvious benefits that are to be expected from e-work, prejudices persist and obstacles are still abundant (e.g., Anderson et al., 1996). Mobile e-work as a social innovation primarily awaits a breakthrough of the trust culture in working milieus.

The data available on the numbers of e-workers is somewhat unreliable and incomparable. This is largely because various surveys measure e-workers' numbers using different criteria or definitions. Mobile e-work is

a recently new phenomenon in the field of e-work in general. Therefore, it is particularly difficult to get statistical data on relevant numbers of mobile e-workers. Some figures can be given, though. The number of teleworkers varies from country to country within Europe. Scandinavia and Finland have the highest proportion of teleworkers out of the total number of white-collar workers, as a result of low-cost technologies, legislative frameworks, and corporate culture. IDC Research has forecast that the number of teleworkers in Europe will increase to over 28.8 million by 2005, up from 10 million in 2000. According to IDC, the mobile workers are defined as those who spend at least 20% of their working hours away from home, their main place of work, or both. There will be over 20.1 million mobile workers in Europe by 2005, up from 6.2 million in 2000 (Jüptner, 2001).

Various models and practices on e-work were developed, tested and recommended for communities and regional authorities in a recently completed three-year research project on Eco-Managed Introduction of Telework, carried out at VTT Building and Transport (Heinonen et al., 2004; Heinonen, 2001). The perspectives chosen were an analysis of environmental impacts, as well as a scrutiny of socio-cultural implications from various e-work contexts (for environmental impacts see also Arnfalk, 2002). A case study was included to experiment with mobile e-work in the Regional Council of Häme, Finland, which will be presented further in this article in more detail.

Mobile e-work can be seen as a means to bridge up the gap between regions. The general processes of centralisation and urbanisation are shifting emphasis on metropolitan areas and a few other urban growth areas. Other regions continue to lose their educated young brainpower to cities, and struggle with economic hardships. By promoting e-work and especially mobile e-work, the regions could have more balance in a socio-economic sense. The skilled labour could remain living in rural regions or semi-urban communities if their employers permitted e-work as a way to organise their work and commuting. In a traditional e-work case, an employee e-works one or two days per week at home or at a nearby telework centre, while on other days he or she commutes to the main office. Mobile e-work adds relevant benefits to the traditional e-working. In mobile e-work,

trips to and from work can be used for working and thus the working hours at office will be cut down correspondingly.

In regional development, legislative efforts to diminish the digital divide between cities and rural areas could include, for example, tax deductions to the companies that permit mobile e-working, as well as to the employees who regularly practice mobile e-work.

E-WORK AS A TOKEN OF MOBILE LIFESTYLE?

In a survey by the Helsinki Metropolitan Area Council (YTV), the results showed that a typical e-worker in the Helsinki Metropolitan area is a highly educated and well-off male employee, younger than an average (YTV, 2001; Heinonen et al., 2004). He lives in a detached house, drives a personal car to the office and has a longer distance from home to the job than on average. Does this imply that an e-worker is prone to more mobility when trips to work are reduced? Or is the diminished commuting a quality-of-life target for a person who is already accustomed or obliged to undertake much travelling? In this survey, 3.6% of all the respondents claimed to have teleworked on the day the questionnaire was administered. Of the respondents active in working life, more than 5% teleworked at least one day per week and 13% replied to have teleworked occasionally during the last six months.

Mobile e-work is understandably more natural to persons with a mobile or nomadic lifestyle. They are already accustomed to embracing continuous change of place and perhaps more easily concentrating on working on the move than those persons who consume their energy on the act of moving from place A to place B.

MONITORING MOBILE E-WORKING CONDITIONS

Mobile e-work was launched and tested in the case of Regional Council of Häme in 2002. Two employees working in Hämeenlinna, the oldest inland town in Finland, were selected to participate in the experiment. Their one-way commuting times were 1 hour 15 minutes and 1 hour 45 minutes by train, respectively. For three months, it was monitored by questionnaires and detailed diaries how well a daily commuting trip on train was suitable for e-working by using a portable computer and mobile telephone. The employees signed special contracts of e-work where it was agreed to compensate their working time on the train by reducing the normal

working hours. They were also asked to carefully write down any advantages, obstacles, and observations that might be relevant for the outcome of mobile e-work.

The seat reservation for ICT seats was considered very important. Such seats were equipped with ICT plugs for portables, and they were isolated from other passengers by a glass wall. Thus, peace for e-working was guaranteed unless the other person sitting in such a compartment was talkative or otherwise disturbing the working conditions.

The main benefits from this experiment on mobile e-work were the increased efficiency of working, the decreased sense of stress, the enhanced working motivation, and the improved quality of life. The employees had more time to their families, hobbies and leisure time. They did not have any pressure to move their homes nearer to their office (Heinonen et al., 2004). The main issues that still need more developing as regards e-working conditions were too small table space, and occasionally too weak field access for mobile telephones. The data security also needs more thorough attention. Even the best data security procedures are not sufficient if someone simply robs the e-worker's computer "on the road."

FUTURE CHALLENGES

Besides the promising potential of mobile e-work in support of the development of regional communities there are some hindrances, risks and threats involved in the process of promoting mobile e-work on a wider scale. Mainly, they are concerned with data security or rising costs for companies. The cost of mobile e-work can be a major obstacle to the penetration of mobile e-work in society. However, in many cases the employer has already provided the worker with a laptop, mobile phone and Internet connection. Then practically no extra costs arise from mobile e-work. On the other hand, it must be borne in mind that mobile e-work is often considered as a serious risk for data security. This may create some additional costs, primarily regarding new software.

Transport companies are beginning to realise the potential of more revenues from the increasing number of mobile e-working passengers. This is especially the case if people who normally commute using a personal car, transfer to commuting by train or by bus.

In Finland and in other countries as well, mobile e-work could be promoted as a two-fold instrument for supporting regional and rural communities. Firstly, the metropolitan areas become congested and the quality of air, for example, is deteriorating while the traffic is increasing. Therefore, rural communities seem more and more

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