

# Anytime, Anywhere Mobility

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## INTRODUCTION

Just a couple of years ago several mobile phone operators and others (e.g., Helal, 1999; Galambos, 2002; Ilderem, 2005) pushed forward “anytime, anywhere” as a goal or vision for future mobile services and mobile IT-use. In this article we set out to explore if “anytime, anywhere” mobility is in fact a paradox.

Kleinrock (1996, 1998) claims advanced wireless technologies, the Internet, global positioning systems, portable and distributed computing, and so forth, will realize the vision of “anytime, anywhere.” We can today see the first signs of this vision. For example, telework is now possible, remote organizations can be engaged in close cooperation, and people can communicate, collaborate, share digital media, and form communities on the Internet. The world has become a global village, some claim (Preece, 1994, Castells, 1996), where you can interact with anybody independent of time and space.

The vision of “anytime, anywhere” describes a situation where people can do tasks wherever they want and without any consideration of time. Related to the vision is the 2x2 matrix often used in the field of computer supported cooperative work (CSCW) to denote different kinds of computer supported collaboration (e.g., Johansen, 1988; Baecker et al., 1993). This model has the dimensions of time and place, where each can be the same or different. The model is shown in Figure 1.

The vision of “anytime, anywhere” is tasks that can be done independent of time and place (i.e., in any of the four scenarios). This does not say anything about where or when the tasks should be done, only that these dimensions should not restrict them.

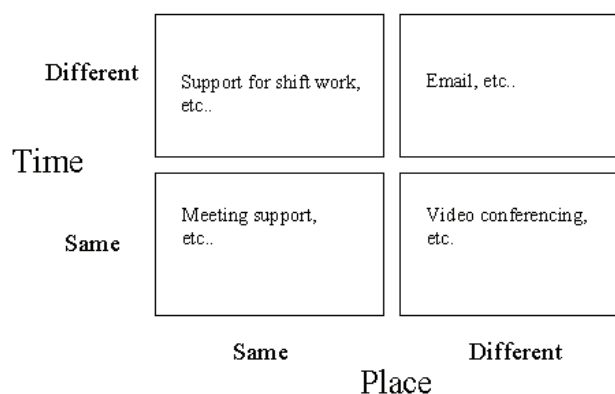
It is interesting to notice that the model does not take into consideration *mobility*. It assumes that people are either in the same place, or in a different place, and whether or not they are mobile does not seem to make a difference.

## BACKGROUND

In the past, people traveled because they had no choice. If you wanted to do business or talk to remote friends you had to meet them face-to-face. However, transportation costs prohibited certain meetings and activities. A long series of technological developments (including the pony express, railroads, automobiles, and the telephone) have aimed at lowering the costs associated with transaction and conversation. Computer-mediated communications are the most recent development in that progression. Even so, people still travel and still meet in person.

To summarize: The adoption of Internet technologies, mobile phones, and so forth, have increased and in a sense made the world smaller. Compared to ten years ago, today it is much easier to communicate with remote sites, and the frequency of communication in many organizations

Figure 1. The model shows different scenarios for groupware (Ellis et al., 1991)



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has increased accordingly. Some people have even talked about “the global village” (Preece, 1994). A parallel trend is that people travel more than they used to do. According to predictions, this trend will sustain, and even increase. For example, the national road agency of Sweden reports the number of flights will increase by a factor of four in the next ten years. How can it be that the global village is so mobile? If people can interact and work independent of time and space, why then do they spend more and more time traveling? Is that not a paradox?

Reviewing the literature on the topic, we find no research that has explored this apparent paradox. Authors are either concerned with *remote interaction* (e.g., Ellis et al., 1991; Brave, Ishii & Dahley, 1998; McDaniel, 1996; Kuzuoka, 1992; and Tang & Minneman, 1991) *mobility* (e.g., Luff & Heath, 1998; Bejerano & Cidon, 1998; and Porta et al., 1996) or *mobility as anytime, anywhere work* (e.g., Dix et al, 2000; Perry et al., 2001; Davis, 2002; Ilderem, 2005). Furthermore, research on mobility has mainly dealt with technology issues, (e.g., limited battery life, unreliable network connections, varying channel coding and characteristics, volatile access points, risk of data loss, portability and location discovery) (e.g., Bhagwat, Satish, & Tripathi, 1994; Dearl, 1998; Francis, 1997; and Varshney, 1999). Accordingly, no research so far has explored the relation between, on one hand “the global village,” with its idea that distance plays no role, and on the other hand the trend of increased mobility. How do the two trends hang together?

### EXPLORING THE “ANYTIME, ANYWHERE” MOBILITY PARADOX

In order to investigate this seemingly paradox we conducted an empirical study of mobile telecommunication engineers in a Swedish company (Wiberg & Ljungberg, 2000). Using

qualitative research methods, we studied to what extent the work tasks they do are dependent on time and place. We analyzed the data using a 2x2 matrix, with the two axis “time” and “space,” which both have the categories “dependent” and “independent.” One of the four situations is “anytime, any where,” while the other three are dependent on time, place, or booth (see figure 2).

We found instances of work in all four categories. Some traveling seems very difficult to escape, simply because there are places that staff need to visit physically to do their job. For example, to repair a telephone pole you need to go there. We also found there are time frames that staff cannot escape. For example, rebooting parts of the telephone network has to be done at night. Lastly, there are work tasks that seem pretty much independent of time and space (e.g., scheduling and rescheduling of activities).

As observed during this empirical study there were just tiny parts of service work possible to perform “anytime, anywhere”. Most of the work is dependent on spatial factors such as location of breakdown in the telephone network system, the location of the client, etc., or time related dependencies such as fixing problems within 24 hours or coordinate schedules to cooperate around larger problems. For a more throughout description of the empirical material see Wiberg & Ljungberg (2000). Overall, we found there are:

- *Traveling* that seems difficult to remove, thus places that people have to visit physically (e.g., telephone poles, customers houses, not all customers are mobile, network routers, locations where new cables needs to be drawn, etc.)
- *Time frames* which seem very difficult for staff not to do certain tasks within, e.g., customer service within 24 hours, rebooting parts of the telephone network has to be done at night, etc.

Figure 2. The theoretical framework of the study

		Place	
		Independent	Dependent
Time	Independent	<b>1. Anytime, anywhere:</b> Tasks that can be done independent of time and place; they can be done anytime, anywhere	<b>2. Anytime, particular place:</b> Tasks that need to be done in a particular place but can be done anytime
	Dependent	<b>3. Particular time, any place:</b> Tasks that can be done independent of place but at a certain time or in a certain order	<b>4. Particular time, particular place:</b> Tasks that must be done in a particular place within a particular time

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