

# **Mobile Urban Professionals in Tokyo**

## **Tales of Locational, Operational, and Interactional Mobility**

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**Abstract.** *Fuelled by strong market forces as well as by increasingly ubiquitous and pervasive mobile mass-technologies, the end of the previous and the beginning of this century has seen shifts in working practices and the application of mobile technologies. One such change concerns the work of professionals. This paper aims to discuss the emergence of the mobile professional, through a study of more than sixty professionals from Tokyo during 2002, and through a theoretical analysis of the changes to their work practices and technology use. The paper concludes that we must broaden our conception of mobility and conceptualise mobile professional work in terms of locational, operational, and interactional mobility. We, furthermore, characterise several pertinent aspects of mobile professional work such as: ICT as mobility-booster; maintaining multiple on-going interactions; the importance of personal networks; and places as material foundations for interaction.*

### **1. Introduction**

The last two decades have seen rapid adoption and intense use of various information and communication technologies (ICTs) as an essential foundation for business activities. It is clear that although ICTs have not changed the basic nature of their business as dramatically as anticipated, newly developed ICT solutions such as groupware, ERP and video conferencing have offered the firms various alternative options for restructuring their business activities. Presently, we are witnessing the advent of the mobile and wireless technology era influencing contemporary businesses and organisations. Although mobile technologies such as mobile phone and personal digital assistants (PDAs) were first developed as consumer products rather than business solutions, a number of innovative firms are adopting those technologies for restructuring their business processes and organisational forms.

The aim of this paper is to explore the emergence of a new kind of contemporary professional workers, which we call *mobile professionals*, and their use of ICTs in their everyday work practices. Professionals in our time include for example designers, planners, consultants, accountants, lawyers, technicians, and programmers. Although various kinds of professionals have played an important role in contemporary business, they are likely to be a “neglected workforce” (Barley and Orr, 1997) who recedes from the ‘front stage’ of management and business studies. One of the reasons for this could be that most of these professionals are ‘outsiders’ to the organisations in which they work. They perform their jobs independently and bring their distinct skills and expertise to organisations on an *ad-hoc* basis. Since business activities are becoming more and more “knowledge-intensive” (Alvesson, 1995), effective utilisation of external experts who can bring distinct expertise to the organisation is increasingly important for organisations. Furthermore, a blurring of formal organisational boundaries can be observed as a result of more flexible and fluid modes of organising and of the uptake of interaction technologies (Kakihara and Sørensen, 2002). The characterisation of organisational membership in terms of people being ‘outside’ or ‘inside’ the organisation is therefore increasingly difficult when the notion of organisation is based on economic transactions as opposed to the operational aspects of collaborative activities based on mutual interdependency (Schmidt, 1994).

It is obvious that ICTs in general and mobile technologies in particular greatly affect the nature of contemporary professional work. Prior to the widespread availability of mobile technologies, they would depend heavily on fixed telephone and fax lines. This in effect rendered the professionals ‘ad-hoc participants’ separated from the organisations’ everyday activities due to the limited communication abilities across temporal and spatial boundaries. Various mobile technologies such as the mobile phone, web-based email clients, laptops and networked PDAs have enabled professionals to participate much more fluidly in their clients’ business activities. For professionals, many of whom are working independently, being accessible to and keeping in touch with their clients and business partners is crucial for their everyday work. In particular, the mobile phone has enabled the professionals to be continuously involved in organisational activities by providing them with a geographically independent and portable means of communication. Considering these emerging work practices, such highly independent and autonomous professional workers must be seen as an integral part of contemporary business organisation.

Based on a combined approach of theoretical studies and the analysis of results from the study of more than sixty mobile professionals in Tokyo during 2002, we propose in this paper the following three essential aspects of mobility of mobile professionals’ work: *locational*, *operational*, and *interactional* mobility. In short, the nature of contemporary professional workers in urban areas cannot be fully appreciated in terms only of their extensive geographical movement, but rather should be taken from a broader perspective shedding a

light also on operational and interactional aspects of their work practices. By deliberately taking these three aspects into account, the nature of the emerging mobile professionals and their active use of technology can better be appreciated in contemporary business and organisational contexts.

The organisation of this paper is as follows. *Section 2* offers a brief historical background of mobile professionals. After explaining the research approach in *Section 3*, the basic characteristics of 62 mobile professionals interviewed in Tokyo are provided and discussed in *Section 4*. Then three distinctive tales of mobile professionals in Tokyo are chosen and discussed in detail in *Section 5*. Then *Section 6* addresses the three aspects of mobility based on the theoretical and empirical discussions in the previous sections. Finally, *Section 7* discusses some implications drawn from this study: ICT as mobility-booster; maintaining multiple on-going interactions; the importance of personal networks; and places as material foundations for interaction.

## **2. The Rise of the Mobile Professional**

Professionals are not at all a new occupation. They have a long history from the medieval time. Among the oldest professionals would be the clergy and teachers, although they must not have been called or even recognised as professionals at the time. Architects also have a long history of contributing to society as professionals with their expertise of designing and constructing buildings. However, we in the contemporary society can see much more diversified kinds of professionals, including accountants, designers and artists, writers, doctors and nurses, engineers, lawyers, pharmacists, psychologists, counsellors, social workers, scientists, librarians, professors, urban planners, and so on.

As Schön (1983) argues, professionals have become “essential to the very functioning of our society” (p. 3). Many have discussed the social drivers of the rise of professionals in the twentieth century and the increasing importance in our social lives in general and our workplaces in particular (e.g. Abbott, 1988; Friedson, 1986; Larson, 1977). Synthesising, the basic arguments forwarded are that there is 1) A need for the workforce dealing with increasingly complex work, and 2) A need for organisations to adapt to turbulent business environments.

*1) The workforce needs to deal with increasingly complex work.* After the World War II, the nature of work has become dramatically complex in consequence of the popularisation of Taylorist division of labour in a wide range of industries and the rapid diffusion of modern manufacturing methods such as assembly lines. Managers were no longer capable of being experts of every part of their businesses that was highly specialised in terms of both physical

and symbolic manipulation. For example, effectively controlling a manufacturing assembly line is clearly beyond a job of a single manager: it requires a number of professional and technical workers such as controllers in front of the console panel and mechanical specialists for specific manufacturing machines. Barley and Orr (1997) explain that “it becomes increasingly difficult for individuals to master the breadth of knowledge necessary to remain a generalist... Consequently, most science and professions divide themselves into ever narrower subfields as their knowledge base grows” (p. 7). Moreover, the introduction of computing technologies into almost all workplaces has further made the nature of work complex (Kling, 1996). Such increasing complexity of modern work and diversification of knowledge necessary for getting the job done has been constantly requiring highly skilled workforce with distinct expertise and knowledge.

2) *Organisations must constantly adapt to turbulent business environments.* It would be fair to say that today’s business environments have become much more uncertain and unpredictable compared with those fifty years ago. This is in part because of the rapid expansion and globalisation of business activities in the second half of the twentieth century and in part because of ever-increasing consumer demands that constantly and aggressively urges firms to create new products. In such a business environment, traditional hierarchical organisational forms and bureaucratic decision making process are likely to be significant fetters for firms in their intense competition. In order to cope with such turbulent business environments, the firms have had to make their organisational forms flexible and decision making agile in some ways. In response to this environmental change, many firms have introduced various solutions in the 1980s and 90s, for example flatter organisational hierarchies, eliminating middle managers, massive downsizing of the permanent workforce, virtual teams as well as extensive use of subcontracting and outsourcing. This attempt to increase adaptability to constantly changing business environments has further raised the importance of professionals in work settings. The qualities that professionals are expected to hold include a certain *distinct expertise, autonomy, objectivity, disinterestedness*, adherence to a set of *professional ethics*, and a *service orientation* (Friedson, 1986; Kerr et al., 1977). With these qualities, professionals have played a critical role in increasing adaptability of firms’ capability, being the most skilful and mobile workforces that can be strategically deployed within an organisation.

Responding these two social and organisational needs, professional work has rapidly grown during the second half of the twentieth century. In the United States, for example, the number of professional and technical jobs has grown by over 300 percent since 1950s to 1990s, whereas the growth rate of the total jobs was 97 percent (Barley and Orr, 1997). Many scholars have analysed and discussed in depth this rapid growth of the ‘modern’ professional workers (e.g. Abbott, 1988; Bell, 1976; Drucker, 1993; Friedson, 1986; Leicht and Fennell, 2001; Raelin, 1985; Reich, 1992).

However, it should be noted that such literature has tended to study professionals *within* organisations. As a consequence the literature generally neglects professionals working *independently*. Obviously, most of the ‘modern’ professionals have been deployed within an organisational structure. As Whalley and Barley (1997) argue, the need for the professionals’ expertise was “created” in response to changes of inner conditions of the firms. Those changes have been initiated mainly by the first social and organisational need we discussed earlier: *a need for the workforce dealing with increasingly complex modern work*. However, if we take the second need, *to increase adaptability of organisation to turbulent business environments*, then addressing only professionals inside the organisational structure clearly does not suffice. In fact, during the last two decades we have seen a rapid growth of workers who are independent of a formal organisation and, in many cases, do their jobs on a freelance and contract basis and establish ongoing relationship with several different client firms (Segal and Sullivan, 1995; 1997). And most of them are knowledge-based rather than material-based professionals such as consultants, designers, writers, journalists and planners of various kinds (Meager, 1992). They live on their lives by selling their own distinct skills, knowledge and/or tangible and intangible products they make to firms.

The emergence and rapid growth of such ‘post-modern’ professionals freed from conventional employment relationships is becoming a critical factor in contemporary business environments, especially in knowledge-intensive sectors. Yet surprisingly little research has been done on such ‘post-modern’ professionals and their work practices which are not bounded by formal organisational structures, rules and constraints but playing critical strategic roles in organisational contexts.

Among the notable exceptions is Malone and Laubacher’s (Laubacher and Malone, 1997; Malone and Laubacher, 1998) work. Seeing Linux open source community’s success, the emergence of virtual companies, the rise of outsourcing and telecommuting and the proliferation of freelance and temporary workers, they argue:

The fundamental unit of such an economy is not the corporation but the individual. Tasks aren’t assigned and controlled through a stable chain of management but rather are carried out autonomously by independent contractors. These electronically connected freelancers – e-lancers – join together into fluid and temporary networks to produce and sell goods and services” (Malone and Laubacher, 1998: p. 146).

This kind of independent professional workers, “e-lancers” in their words, can be seen at the forefront of the contemporary business environment. Although independent professionals outside organisations have already existed in various forms such as lawyer and accountants since the middle of the twentieth century, they have remained quite small volume compared with workers employed by a certain firm including both white- and blue-workers. This is mainly because, as traditional economic theories of organisation suggest, firms have benefited from internalising a wide range of labour forces into the formal organisational structure and

placing them in the same, fixed locations such as offices and factories to effectively manage them in a centralised manner. In other words, the firms have seen it costly and risky to utilise people who are outside of the organisational boundaries and largely distributed in a wide area due to limited communication and coordination technologies in the industrial age such as trains, cars, telegraph, fixed telephone, and mainframe computers. In consequence, the firms have remained large.

However, with the introduction of powerful and cheap personal computers, laptops and software, the internet, web-based technologies such as email, mobile phone and PDAs, the firms have become capable of coordinating their business processes and utilising the outside workers, particularly those who have distinct skills and expertise. They no longer have to hold a large number of permanent workers inside the organisations for the sake of centralised coordination of business processes (Malone et al., 1987). Many of the highly skilled people in firms are actually spinning out and finding their workplaces outside of the firms, since being free and independent can provide them with much larger benefits such as gaining more reward for their work and managing their career and lives more flexibly than staying inside the firms. Some of those people are getting together and forming a loosely bounded, partnership based organisation such as a consulting firm and a design studio, but each of them still keeps much more autonomy and freedom than professionals inside the firms. Therefore, considering these shifts occurring around the ‘post-modern,’ *mobile professionals* and their impacts upon contemporary business activities, we must give careful consideration into how such professionals work *with* organisations and how particular ICTs are utilised in their work practices.

### **3. Research Approach**

In order to look closely at the detailed nature of contemporary mobile professionals, this paper has deliberately adopted a focus on individuals rather than groups or teams. From their study on “netWORKers,” workers who rely heavily on their own personal social networks in their working activities, Nardi et al. (2002) argue that the most fundamental unit of analysis for contemporary work is not at the group level but at the individual level because personal social networks, which they call *intensional networks*, become more and more important. They argue that today’s work environments are organised increasingly through “the assemblage of people found through intensional networks” (p. 237) rather than constituted as formal teams or groups formed through organisational planning and structuring. Their work looking at intensional networks radically reveals the dynamic organising of individuals’ works and its bringing forth of collective unity of organisational structure. The research approach of this paper is aligned with Nardi et al.’s (2002) approach, but with an emphasis on studying

*mobile professionals* rather than workers in general. Here, mobile professionals are understood as *individuals who to a large extent work independently and offer distinct skills and knowledge and with work being supported by various ICT, in particular mobile technologies*. Such professionals include independent consultants, freelance designers, planners of various kinds, lawyers and accountants (not in-house), entrepreneurs, and so on. They are significantly autonomous and flexible in terms of organising their own everyday work practices. Viewed from a broader perspective, this focus can also be placed in the context of a focusing on the individual (Zuboff and Maxmin, 2002).

The empirical study of this paper adopts an inductive qualitative research approach employing open-ended interviews based on an interview guide and *ad hoc* participant observations as the research method (Patton, 1990). Fieldwork involving interviews with and *ad hoc* observation of 62 mobile professionals was conducted April to July 2002 in Tokyo, Japan. In addition to the recorded interviews based on an open-ended interview guide, highly contextualised data of work practices was collected immediately before, during, and after each interview session. As work practices of mobile professionals is virtually ‘anytime, anywhere,’ the interview session is also embedded into their continuous everyday practices, being a part of daily events. In conjunction to most of the interviews there was an opportunity to spend time with the interviewees over coffee or dinner, and here observe some distinct aspects of their everyday work practices. Furthermore, during interviews, some received phone calls, emails and texts on their internet-enabled mobile phones, and even responded to voice calls. Researching emerging mobile and nomadic work environments demands considerable reconsideration of research methodology so as to grasp and explicate contemporary work activities that are geographically distributed and temporarily fragmented (Lyytinen and Yoo, 2002; Weilenmann, 2001). The combination of in-depth interviewing and ad-hoc observation could be one of the solutions.

Tokyo was chosen as the site for this study for three primary reasons. First, the *distinctive institutional background* of Tokyo is particularly interesting with a work environment distinctly different from that of Western countries. The Japanese corporate system has typically been associated with three institutionalised traditions: lifetime employment; promotion by seniority; and the enterprise union system (Aoki and Dore, 1996). There is also still widely persistent steep vertical structuring as well as administrative and corporate bureaucracy (Nakane, 1983). Within such a distinctive world, almost all Japanese professionals have been employed by the government or large corporations, which led to the highly elitist internal structure of organisations. Such institutional distinctiveness of the Japanese work environments could benefit us in understanding actual opportunities, problems, obstacles, and hopes that emerging professional workers are currently faced with much more clearly and contrastively than looking at those in Western contexts.

Second, Japan's *unique and advanced technological environment* is also critical for the choice of fieldwork location. It is widely recognised that Japan has enjoyed advanced technological innovations that resulted largely from Japanese industries' strength in R&D and manufacturing of technical devices, systems, and large infrastructures. Japan is in the middle of dramatic technological innovation and diffusion of mobile technology (Rheingold, 2002). Such a unique technological environment potentially influences Japanese mobile professionals' work practices. Nowadays, almost all Japanese professionals are using internet-enabled mobile phones, which offer them a means to send and receive email from their mobile phones. The specific socio-technical environment in Tokyo, therefore, makes it a highly suitable setting for studying the emerging realities of mobile technology use.

Third, *direct access to mobile professionals* working around the area was another deciding factor of the site selection. One of the authors had through four years been working as a business consultant at a medium-size consulting firm in Tokyo and there had participated in numerous projects together with clients and business partners representing a wide range of industrial sectors. This network significantly helped the identification and selection of informants. Furthermore, as mobile professionals are expected to account for only a fraction of the Japanese workforce, it was reasonable to choose a large metropolis such as Tokyo, where one is likely to encounter independent professionals due to the increased business opportunities as compared with smaller cities.

#### **4. Mobile Urban Professionals in Tokyo**

This section outlines some characteristics of the mobile urban professionals interviewed. Table 1 shows the list of all the informants interviewed during this fieldwork. Most of the respondents were in the 30s with 85% of the informants being male and 15% female. The occupation of the mobile professionals interviewed ranged widely. The largest (eleven) group of occupation consisted of independent consultants. There could be several reasons for this group being the largest. Independent consultants represent distinct skills and knowledge, they are independent in their work practices and can flexibly organise their work.

The second largest group was entrepreneurs. Although entrepreneurs are not likely to be seen as professional workers, their working lives display significant characteristics common to other kinds of mobile professionals. They have clear visions of their business and highly distinct skills and knowledge combined with a high enthusiasm aimed at making their visions materialise. In terms of high competitiveness in skills and knowledge, independent consultants and entrepreneurs present commonalities; whereas independent consultants utilise their skills and knowledge for their clients, entrepreneurs do so for their own. Entrepreneurs, too, can manage their work activities flexibly. Whilst they usually own their office, their work

activities span a wide range of areas for meetings and negotiation with various business partners. Considering these unique characteristics, entrepreneurs should also be regarded as an important group of mobile professionals. Designers (six) and journalists (four) are also distinct informant groups in this field study.

#	Job	Gender	Age
1	Independent consultant	M	50s
2	Corporate manager (employed)	M	50s
3	Entrepreneur	M	30s
4	Independent consultant	M	30s
5	Independent consultant	M	50s
6	Corporate researcher (employed)	M	30s
7	Corporate researcher (employed)	M	30s
8	Consultant (employed)	F	30s
9	Marketing planner (employed)	M	30s
10	Marketing planner (employed)	F	30s
11	Consultant (employed)	M	30s
12	Entrepreneur	M	30s
13	Entrepreneur	M	50s
14	Corporate researcher (employed)	M	30s
15	Designer (freelance)	M	30s
16	Journalist (employed)	M	20s
17	Marketing planner (employed)	M	30s
18	Designer (freelance)	M	30s
19	Corporate manager (employed)	M	40s
20	Entrepreneur	M	20s
21	Entrepreneur	F	20s
22	Designer (freelance)	M	20s
23	Independent consultant	M	20s
24	Entrepreneur	M	30s
25	Entrepreneur	M	20s
26	Corporate manager (employed)	M	30s
27	Designer (employed)	F	30s
28	Journalist (employed)	F	20s
29	Freelance producer	F	30s
30	Consultant (employed)	M	30s
31	Corporate researcher (employed)	M	30s
32	Corporate manager (employed)	F	40s
33	Consultant (employed)	F	20s
34	Architect	M	40s
35	Independent consultant	M	30s
36	Sales coordinator (employed)	M	30s
37	Consultant (employed)	M	30s
38	Marketing planner (employed)	M	30s
39	Entrepreneur	F	50s
40	Independent consultant	M	50s
41	Designer (freelance)	M	50s
42	Journalist	M	30s
43	Journalist	M	30s
44	Sales coordinator (employed)	M	20s
45	Independent consultant	M	50s
46	Marketing planner (employed)	M	30s
47	Independent consultant	M	30s
48	Entrepreneur	M	30s
49	Sales coordinator (employed)	M	30s
50	Independent consultant	M	50s
51	Independent consultant	M	30s
52	Independent consultant	M	50s
53	Designer (freelance)	M	50s
54	Consultant (employed)	M	40s
55	Consultant (employed)	M	40s
56	Marketing planner (employed)	M	30s
57	Marketing planner (employed)	M	30s
58	Corporate researcher (employed)	M	20s
59	Corporate researcher (employed)	M	20s
60	Sales coordinator (employed)	M	20s
61	Academic researcher	M	30s
62	Academic researcher	M	30s

Table 1: The complete list of informants

The professionals studied typically had multiple work sites and moved extensively between them. 52% of the respondents were constantly on the move from one site to another. Although they all had fixed office spaces, be it a company office, a private office, or home, they could not point out exactly where their workplaces were. Some typical answers were: “*anywhere I can get news*” (journalist, #28), “*depends on the nature and stage of the project*” (think-tank researcher, #58), “*where clients are*” (sales coordinator, #44), and “*anywhere I can connect to the Net*” (independent consultant, #5). The remaining 48% regarded their office as the main work site. Despite the fact that most of them moved out and travelled quite frequently, they saw their office spaces as important for their daily activities: “*the office is like a station where*

*I can meet my colleagues and share a lot of information on business” (consultant, #33), “I move out a lot to meet my clients and other members of the project, but the private office space is very important for me because on some occasions I need a space where I can concentrate on my work without disturbance” (architect, #34), “I used to use my home for my work, but, honestly, didn’t want to let my clients in because it’s my private life as well! So I decided to borrow a small office room. Now it works very well” (freelance designer, #53), “Some clients don’t like doing business with one who doesn’t have an office!” (entrepreneur, #13).*

All the mobile professionals interviewed had a good command of new ICTs. All of them used Internet-connected personal computers (PCs) for their daily work activities. Interestingly, ten informants used laptop PCs rather than desktop PCs as their main computer, even when working in their office. Reasons for this included: *“The laptop can be my main machine in any situation, no matter where I go” (media consultant, #1), “I have a huge amount of data for my daily work, so I don’t want to spread data into several PCs. Using one single PC all the time, this is my ideal. Using several different PCs ends up confusing me about which file is on which PC” (independent consultant, #5), “Because I’m moving around all the time, a PC has to be portable” (sales coordinator, #44), “Just for saving a space. My desk space is too small to install a desktop PC” (independent consultant, #47), “There is no reason to choose a cumbersome desktop PC” (independent consultant, #50).* It was evident that laptop PCs provided them with optimal usability for their highly mobile work styles.

All the mobile professionals interviewed used mobile phones. Especially for those who moved extensively during work time, mobile phones were regarded as an essential necessity. *“I can’t imagine my work life without a mobile phone” (entrepreneur, #12), “Thanks to the mobile phone, I can go out from my office without caring too much about incoming calls” (independent graphic designer, #15), “Most of my clients rings my mobile even when I’m in my office, because it doesn’t matter where I am” (independent IT consultant, #23), “The mobile phone gave me freedom to be anywhere” (corporate manager, #27).*

Compared with the situations in other countries, in Japan, the practice of receiving email through the mobile phone is extremely pervasive (Rheingold, 2002). The well-known NTT DoCoMo *i-mode* service and similar services by other mobile phone operators enable users to receive and send email with their handsets. Some informants used such emailing service at their handsets actively. *“Emails coming into my account are all forwarded to my mobile immediately. Most of the emails are not so urgent, but in some cases, it does help me” (consultant, #30), “Sudden changes in schedule sometimes happen in the project I’m involved in now. Such a notice of change is distributed to the project members’ mobile phone email accounts so that we can know it immediately. It’s really useful” (independent producer, #29).* However, we found that even those respondents rarely sent email from their mobile phone.

*“It’s just due to its interface. It’s too small to type quickly”* (consultant, #30), *“It’s better to ring than to type with a thumb”* (journalist, #28). Nevertheless, it was obvious that emailing by a mobile phone handset gave them one alternative, largely complementary, communication method.

The use of PDA was not so prevalent amongst the informants with 24% using a PDA for their work activities. Their reasons for using PDA included: *“For using idle time effectively, like checking email”* (corporate researcher, #6), *“It’s the portable database of my clients’ addresses and telephone numbers”* (independent consultant, #40). In addition to these practical reasons, there were other kinds of reasons: *“It’s almost just for fun. I like digital gadgets”* (systems consultant, #11), *“I’m doing my work in the IT industry. So I have to keep me up to the latest products like recent advanced PDA”* (journalist, #43). We received rather negative opinions about the business use of PDA even from PDA users: *“I have several PDAs but all the products are actually cumbersome for business use. It’s perhaps due to the overly advanced technological functionalities”* (independent consultant, #5). In fact, there were many informants who did not have a PDA but had interest in using it in their work. However, they complained about the limited usability of PDAs: *“A paper note is still much more useful than a PDA. You cannot scribble down with a PDA”* (consultant, #8), *“For designers who want to draw a picture freely, a PDA can’t help in many cases”* (independent designer, #15), *“A PDA cannot store large graphic data, but a laptop PC can”* (corporate designer, #27), *“For checking email outside, I use my mobile phone. For writing and presenting a document when travelling, I use my laptop PC. For note taking, I use my paper notebook. For organising schedule, I have no problem in using my filofax”* (corporate manager, #17). The fieldwork clearly showed a host of problems associated with PDA use.

## **5. Three Tales of the Mobile Urban Professionals**

The results presented above offer an overview of the mobile professionals interviewed during the field study. In the following section we have chosen *three* distinct cases of mobile professionals that proved to be particular exemplary. One is the case of an independent town planning consultant (#4), which shows the high degree of mobility in terms of work sites. Second is the case of a freelance computer graphic (CG) designer (#18), where various Internet-based tools and applications play critical roles in his highly independent but collaborative work style. Third is the case of a software entrepreneur (#3), which demonstrates various consequences of the use of mobile technology in mobile professional work. Obviously, in each case, only a small portion of the whole transcript is presented here. Some descriptions drawn from ad-hoc observation in the cases are also used to complement the interview data.

### *Case A: Independent town planning consultant*

Jun<sup>1</sup>, 38, started his independent consulting business in 2000. His main consulting field is town planning for small and medium-sized municipalities. He earned his bachelor degree in agricultural science at one of the highly recognised national universities in Japan. He first worked at a big media marketing company. After being involved in many projects of planning events and publishing magazines in the company, he changed his job to working as a consultant at a town planning consultancy firm. After working for several years there, he decided to start his own business as an independent town planner. He works alone with no employees but collaborates with many people including other consultants and developers. He uses a small studio-type room of a flat in a suburban area of Tokyo as his office space and shares it with his friend working as an architect.

His main business is consultation for local governments, mostly in rural areas of Japan. Currently, many Japanese local governments are suffering from rapid depopulation. An increasing number of people in rural areas, mainly the younger generation, are moving to big cities like Tokyo and Osaka. Depopulation in rural areas of Japan became significantly intense in the economic boom in the 1960s and 1970s. Faced with this, local governments, particularly in the rural areas, have been trying to keep the youth there and to attract back those gone already. With a limited number of exceptions, almost all local governments have been failing to stop the depopulation trend. Increased dissatisfaction with his job in the consultancy firm led Jun towards being independent. Taking advantage of work experience at the firm and his social networks he built through the years, he started his own business as an independent town planning consultant. The majority of his current clients are small- and medium-sized municipalities, mainly in rural areas hundreds miles away from big cities such as Tokyo and Osaka. His consultation includes not only proposing a ‘rehabilitation’ plan for the area, how to energise the area’s economic and social welfare, but also implementing it by engaging in close collaboration with the municipalities and with local residents.

He finds the high degree of mobility in his work activities the most conspicuous advantage. Town planning projects typically require the project members to see the actual site in which a certain plan is implemented. He also argues that visiting the site and seeing it with his own eyes is crucial for the town planning business, since the observation of the site offers invaluable data and insights for the project. In such a work environment, inflexibility in moving significantly hinders the daily work activities and hence the business as a whole. It is widely said that a consultancy firm’s organisational structure is likely to be less bureaucratic than those of the traditional firms (Lowendahl, 1997). However, Jun argues that the realities of town planning in the actual sites require much more mobility in moving to and across the

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<sup>1</sup> All names have been changed to protect privacy.

sites. In this regard, independency renders his daily work highly mobile and Jun make extensive use of ICTs as a means of alleviating the problems associated with working independently. Particularly acquiring a subnote PC changed his way of working dramatically. He has two laptop PCs: one is relatively a big one mainly used in the office; the other is a subnote PC that he carries with himself mostly when working away from the office. Jun also rely critically on his mobile phone:

The mobile phone really helps my independent work. I forward all phone calls coming into the office phone to my mobile. If a call is not picked up in three second, it's automatically diverted to my mobile. So, in theory, I can receive all the calls with this mobile wherever I am. Well, my clients are ringing my mobile directly anyway [laugh]. [...] When we didn't have the mobile phone, workers like me had to either hire a secretary to receive phone calls or just give them up completely when going outside for a long time. Now, the mobile phone solves it.

Independent consultants rarely hire secretaries or support staff mainly because hiring such workforce results in large additional fixed costs, an unbearable burden for people working independently. Yet losing important phone calls sometime ends up with a huge loss of business. As seen in Jun's case, the mobile phone can be a simple but powerful option to solve this problem. However, he seems to have a somewhat different image of 'anytime, anywhere' work style compared with the one that Kleinrock (1996) and many others have forwarded. Jun argues that mobile technologies such as his subnote PC and mobile phone, does not straightforwardly enable the 'anywhere, anytime' working. He insists that some activities would requires '*specific space and specific time.*'

Jun's work activities span wide geographical areas. Although patterns of his work vary according to the nature and phase of projects, in general he travels extensively, for example during the week around the date of the interview (see Figure 1). On the 29th of April, he flew to Kumamoto in the Kyushu area, the far southwest part of Japan, for intensive meetings with his clients living and working there. On the 30th of April he had meetings with the client and other members involved, and visited various local sites for inspection. After seeing the local sites, he flew back home in Tokyo on the night of the same day. In the morning of the 1st of May, he attended my interview in his office in a suburban Tokyo area. After the interview he went to central Tokyo to meet another client for a meeting, and to have another meeting with the project members of another different project. The next day, the 2nd of May, he worked in his office to prepare various things including reports for the event project that starts the day after in Kobe. After the office work, he travelled by the Shinkansen rapid train to Kobe in the Kansai area in late evening. From the 3rd to the 5th of May, he participated in a big event project held in Kobe and had to move around within the site extensively. On the evening of the 5th of May, he took the Shinkansen train back to Tokyo.

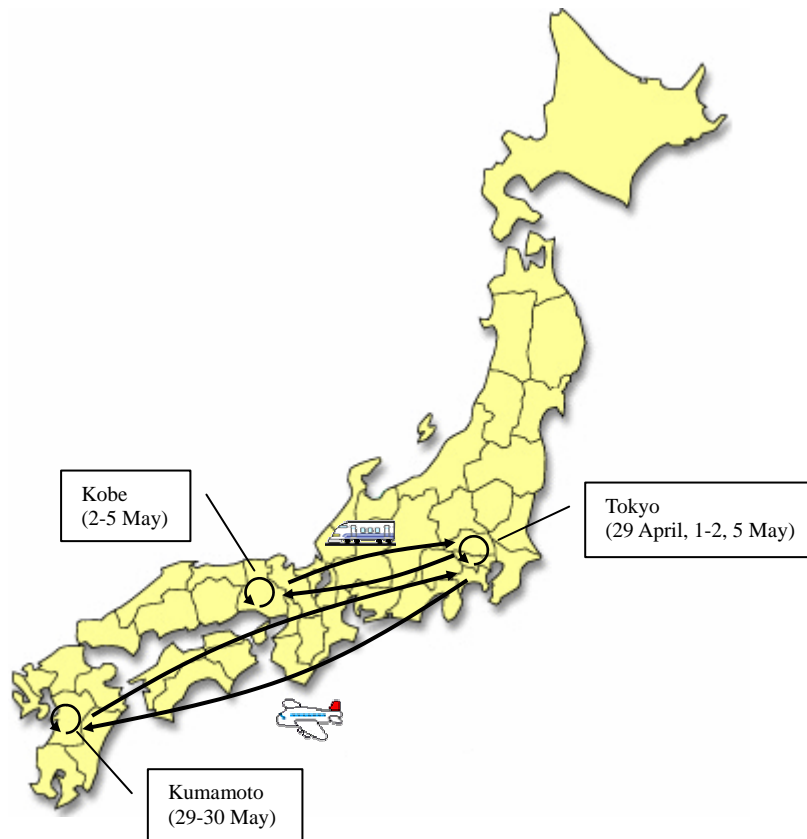


Figure 1: Jun's geographical movement in a week

From this sample schedule, two basic patterns of geographical movements in his work activities can be drawn. First is the long-distance travel. He follows a working style where he can spend a considerable amount of time in the actual sites where his clients' problem issues reside. Most of his clients are local governments in areas far away from Tokyo. Therefore, it is inevitable that he frequently travels hundreds of miles for a visit and explores the sites physically. In this sample case, he makes two long-distance trips: one is between Tokyo and Kumamoto by plane; and the other is between Tokyo and Kobe by train. He says that as his clients spread from Hokkaido (north) to Kyushu (south), the travel distance inevitably becomes long. Furthermore, because of the nature of his work; namely, being in the field, the frequency of such long-distance travel is also high.

Second is the intensive local travel. As seen in the sample schedule, he moves around the Tokyo area intensively to meet his clients and other members of the projects, since meeting those people fact-to-face is extremely important for his business. In such local travel, he usually uses underground trains, taxis as well as walking. Just like moving around Tokyo, he also travels intensively in and across the local areas when visiting the clients' sites. In Kumamoto, for example, in a single day he visited and saw several local sites where the

project was taking place. Likewise, in Kobe, he had to check the progress of the events in several different sites throughout the three days. This kind of sporadic but intensive local travel is also distinctive in his daily work practices with a stark contrast to the long-distance travel.

He described the extensive geographic movement in his work practices as follows:

[...] Yes, I travel quite a lot, and very frequently. It's my style. I know it's quite inefficient in terms of time and money. But at the same time, it's my competitiveness because the big firms can't have this mobility in their practice of consultation. My clients offer me a job because of my style, high mobility and no hesitation to come down to the field.

### ***Case B: Freelance CG designer***

The second case is about a freelance computer graphics (CG) designer. Particularly interesting in this case is that the designer's work practices show the highly independent nature of working and the intensive interaction with a number of people through the Internet environment.

Yoshi, 35, is working as a freelance CG designer in Tokyo. He uses a room in his home in central Tokyo as his workspace where he makes almost all his design work. After graduating from a university with a degree in graphic design, he got a job in one of the biggest design firms in Japan. Having worked as a graphic designer for eight years in the firm, he became freelance five years ago. He is an expert of 3-dimensional CG (3D-CG) design but most of the revenue of his work comes from projects relating to website design and coding. Yoshi had not sought to be independent during the first few years of working in the design firm, but gradually became interested in working independently. Just as seen in Jun's case, the increasing dissatisfaction at various organisational constraints on the professional's activities is rooted in his decision to start working independently. He also asserted that a large organisation might not be necessary for design work. He argues that designers are basically individualistic in nature because actual design work tends to be very solitary and concentrating on a specific design subject. Although he stresses the importance of collaboration amongst the designers and other project members, he finds that a large organisational structure involving a number of designers does not necessarily contribute to each designer's work activities. The turning point of his career as a designer was the time when Yoshi received a highly reputed CG design award, which a large Japanese entertainment company awards annually. Winning the award brought him various chances to meet designers outside of the firm and make his name distributed in the design industry in Japan. Taking advantage of this, he started creating his own network and finally decided to leave the firm.

In the early 1990s, only large corporations and university laboratories had dealt with the

emerging field of CG due to the large capital investments needed in computer equipment and software along with a constant need for specialised knowledge about state-of-the-art developments. However, due to the rapid technological development, the field of CG design shifted from the large institutions' domination to the hands of numerous designers who became able to buy such hardware and software easily. Furthermore, since the middle of the 1990s Japanese firms have started utilising contingent workforce for design work. Faced with the economic downturn of the 1990s, Japanese firms engaged in restructuring activities and as a result started utilising more actively than ever a contingent external workforce. As typically seen in the fashion industry, many firms seek to utilise outside designers in order to flexibly cope with rapid changes in market trends and customers' preferences. Yoshi argued that firms most often outsource website design functions to independent designers. This is particularly the case in the music industry from which Yoshi gains most of his revenue for website design work. His website design work is efficiently operationalised and coordinated in the form of an independent designer's job. The music companies optimise a contingent workforce by effectively utilising net-based technologies that connect them together at extremely low transaction and coordination costs. On the independent designers' side, those technologies provide them with a huge opportunity to get a job from firms and work at home. This is largely because their final products, websites, are digital, not physical, and thus they can be accessed and exchanged through the Internet. Critical to this way of working is to build and maintain a trustful relationship with clients.

His workplace is a room on the third floor of his house at central Tokyo containing all his computers, devices, materials for design, and references. He spends almost all his working time in this room, which has a high-speed Internet connection. He uses three computers for his design work. The first is an Apple *Macintosh* computer, the main machine for his design work and other daily tasks such as emailing and accessing the Web. The second machine is a high-spec *Windows* machine used for 3D graphics processing (rendering) which requires a high processing power. The third is a server that operates various devices and stores graphic data from the other two machines. Keeping up with the rapid pace of development in both hardware and software, particularly for 3D-CG design, is a difficult and time consuming task for independent CG designers. Although the volume of his revenue from jobs relating to 3D-CG design is currently 10% or less, he seek to make 3D-CG his professional field and thus tries to prepare the latest possible equipment to get 3D-CG jobs.

Due to the nature of CG design, he spends a considerable amount of time in front of the computers in this room. In this regard, he is a quite static home-worker. He uses email extensively for communicating with his clients. He argues that some website design works are done only through email communication with the clients, without meeting face-to-face. In this working style, the 'always-on' Internet environment ensures the stability of communication

between his clients and him. The stability thus provides him with an opportunity to work at home.

He finds several merits of working at home. It involves much freedom in how and when to work. He thinks that keeping “*freedom*” is an important condition for design work because it encompasses the highly individualised nature of work, depending upon each individual’s talent and effort. Furthermore, working alone at home is no longer a drawback for worker but rather a new competitiveness in the CG design field. The reason for this is that “*high mobility*” of freelance designers like Yoshi is increasingly preferred from the firms that seek flexible design function. On the other hand, the most significant demerit of working at home, he thinks, is the lack of immediate human interaction.

Working alone at home inevitably brings the home-workers a difficulty in getting the latest information that is diffused within the CG designer community, since they have no colleague designers around them. However, the Internet environment does help greatly. As Yoshi says, there are numerous websites that ordinary people created and organised to collect widely distributed information from individuals and to share it with a number of other people by putting on the websites. Interestingly, almost all the websites of that kind are being run on a voluntary basis and contain extremely detailed information in a well-organised manner. Moreover, he views those websites as more trustworthy than those of software companies.

In this regard, getting the latest information concerning products from the website is much more than a substitute of talking with colleague in an office environment to get such information. By accessing such websites frequently, freelance designers working at home can keep up with the rapid pace of information distribution amongst the community as much as, or rather more than designers working in office.

Despite the fact that Yoshi works alone at home, he engages in intense interaction with people outside by using the Internet technologies actively. Such intense interaction is not in a physical form but accomplished through virtual space. Particularly interesting is that his corporeal movement is largely static, sitting in a room for a long period of time, but the range of his interaction with other people through the Internet spans the globe and the patterns are significantly intense and diverse. Therefore, it is obvious that the Internet environment enables independent workers like him to interact with other people even if they work alone at home for most of the time. He does however stress the importance of face-to-face interaction. This indicates that the virtual interaction through the Internet is not a substitute for of face-to-face interaction, which involves rich nuances of the contents and meanings. Nevertheless, the clear fact is that the intense interaction through the Internet provides

Even though the intense interaction with various people through the Internet greatly helps Yoshi get access to the latest information about hardware and software, he is still faced with a

considerable lack of human physical interaction. As he stated, a face-to-face meeting with a client is necessary especially at the beginning of a new job in order to ensure smooth operation of subsequent activities. More importantly, 'real' human interaction is critical for creating and maintaining a "*network*" of relationships, which is a fundamental source of a design job. He stated that all of the jobs in which he engaged came from his personal network.

Specifically because of the abundance of 'amateur' designers on the one hand and the scarcity of professional-minded designers on the other, the companies outsourcing design job pay great attention to the reputation of designers amongst the community when seeking one for a new job. Such information concerning a certain designer's reputation can be gained only through a designer's personal network. This is why many CG design jobs are allocated to designers in such 'nepotistic' ways. In Yoshi's case, there are primarily two sets of networks through which his reputation is distributed and hence through which he gains new jobs. The one is the network of his former colleagues in the design firm where he had worked for eight years. It was through this network that Yoshi gained jobs at the very beginning of his independent career. As seen in many other cases in this field study, it is typical that independent workers rest largely upon networks of their friends and colleagues for gaining new jobs or contracts, particularly in the early stage of their independent career. It could be argued that without effectively mobilizing this kind of networks, only a small portion of the professionals can become and survive as independent workers. The other is the network that Yoshi has built by taking advantage of the opportunity given by the CG design award he received in 1997. The award was founded by a large entertainment company in 1993, and is one of the most reputable and widely known CG design awards in Japan. This company has established a special design studio in one of their office buildings in central Tokyo exclusively for the winners and finalists of the award. The studio installs the latest hardware and software and the winners and finalists can keep using it freely and exclusively for their design work. Yoshi commented on the special design room as follows:

That [the special design studio] is absolutely great for me. It's like a salon where independent designers like me can meet and have a chat. The people I meet there are all skilful, talented, and professional indeed. So having a chat with them is absolutely great in terms of exchanging valuable information. What's more, the studio has a lot of 'cutting-edge' machines and devices, which individual designers still can't buy easily due to high price. So the room is really helpful to independent designers like me. [...] These days, the price [of the machines and devices] has gone down to a reasonable level even for individual designers to buy. In that sense, the value of the room might not be so high as it used to be. But I still go there, as meeting those people is still very valuable to me.

The special design studio seems to function as a 'Ba' (Nonaka and Konno, 1998), or a place where people can share a distinct context of working and exchange a variety of tangible and intangible goods. As Yoshi stated, such a place can provide people with broad opportunities

for 'real' human interaction, which facilitate exchange of valid information. Thus, a place like the studio involves not only material usefulness in terms of equipment but also a platform for exchanging and sharing a wide range of intangibles. Along with functioning as a place for interaction amongst the designers, the studio also serves as a place for coordination and collaboration of design jobs. The informal chats amongst the people coming to the studio facilitate the exchange of information concerning new jobs. It seems that the studio effectively mobilizes the distribution of job information that normally tends not to spread amongst the community. Furthermore, the studio is also a place for collaboration. Since each of the designers coming to the studio has a distinct background and expertise of design, they can easily find each other as complementary in their design work. It is obvious that the network that Yoshi has built through the activities afforded by the award and the close interaction with other designers in the studio has provided him with various important resources.

As seen above, the two primary sets of social networks that Yoshi has built, the 'colleague' network and the 'studio' network, have been contributing to his independent career significantly. It would be fair to say that Yoshi could have been independent and continued his design jobs without these two networks. As found in the many other cases in this field study, mobile professionals effectively mobilize such human networks in order to get their jobs, whether they are employed or freelance.

### ***Case C: Software entrepreneur***

The third exemplar is a software development entrepreneur. The most immediate difference from the two previous cases is that the entrepreneur is part of a formal organisation and employs around twenty people. However, this case, too, exhibits various distinctive characteristics of mobile professional work in individual and organisational contexts. In particular, it demonstrates the high degree of mobility in geographical movement and the active coordination of intense interaction by effectively utilising ICTs.

Hiro, 35, is an entrepreneur and CEO of a small software company. Compared with other ordinary Japanese people, he has an extremely unique background. After his high school graduation, he began working as a musician, living by playing, composing, and arranging music for himself and for other musicians. As a musician, he had been quite successful, but gradually shifted his career towards ICT-related areas. After being involved in the Internet service provider (ISP) business for a few years, he founded in 1998 the company where he now is CEO. The company primarily develops entertainment software and digital contents such as network-based games on the Internet, a music-composing tool for PCs, and more recently various tools and network contents for Internet-enabled mobile phone services such as the NTT DoCoMo *i-mode* platform. In particular, the mobile phone content business

brought his company tremendous success, largely due to the dramatic increase of users of Internet-enabled mobile phone services in Japan in the late 1990s. Despite its substantial financial success, the company is kept relatively small with only fifteen full-time members of staff, primarily programmers, and a few part-time workers conducting clerical tasks.

Hiro describes himself as “*a man of ideas*” who always creates innovations that appeal broadly to people and which can be turned into commercial products or services. As the primary responsible for deciding the strategic direction of the company, he also finds it important to closely coordinate the process of transforming the ideas into products. In that respect, he also considers himself “*a producer*” who directs the process of creating new products. Since starting as a musician, he had never worked as a paid employee of an organisation. He explained the reason for this as follows:

I was entirely working as a freelancer. I always thought that I didn't want to be a salaried office worker. I don't know why... Well, what was absolutely clear to me was that I wanted to do what I liked to do. I just want to do something that fascinates me. I used to work as a musician. Now I'm doing my own business. But the principle is still the same.

Compared with numerous Japanese e-business ventures most of which ended up with fading out within a few year from their inception, Hiro's business has so far exhibited extremely successful results, becoming one of the most successful e-business ventures in Japan. It is particularly interesting that he still keeps the size of the company relatively small, employing around twenty people including part-time staff.

In contrast to the cases of Jun and Yoshi, Hiro is subject to much more intense and dynamic interaction with other people. Whereas Jun and Yoshi primarily work alone and only interact with a limited number of clients and members of projects at the same time, Hiro has twenty members of staff in his company. Moreover, he is involved in constantly changing business situations where he has to interact with a diverse range of current and prospective stakeholders. He has two to four business meetings inside and outside his company's office every single weekday. During the day a number of people constantly try to contact him by telephone, email, or sometimes by suddenly showing up without an appointment. He receives on average fifty emails, excluding ones from mailing lists, each day. These emails are all directly related to his business and he therefore needs to reply to most of them. Simple utilisation of Internet-based and mobile technologies do not necessarily solve this situation, since wider communication access to other people brought by those technologies can make the situation worse, increasing the intensity of interaction further. However, simply missing excessive contacts can result in missed business opportunities. Therefore, he was faced with the dilemma of either accepting intense and complex interaction in his everyday work practices or potentially damaging the progress of projects or the relationship with business partners.

In order to cope with this dilemma, Hiro utilises the combination of email and mobile phone technologies as the primary means of managing his interaction. Similar to several other mobile professionals interviewed, he forwards all incoming emails to his Internet-enabled mobile phone. When his mobile handset receives an email, he is immediately notified. However, as he receives a large number of emails a day, he has configured the ring tone so as to sound only when receiving email from a person explicitly deemed as important. The preset important people include his secretary, members of ongoing projects, and a few others. When receiving emails from people not explicitly included in the set of important people, the handset just vibrates without playing a sound. Hiro described this practice of managing emails as follows:

Many people say that email is asynchronous communication. But I think it should depend on the content of the email. In the case that the content of an email is urgent or important, I reply to it as synchronously as I can. If it's not, I reply to it asynchronously by using available time. [...] Currently, I make the decision based on who sends the email. When an email is sent by a really important person, I reply to it immediately, as real-time as I can. But overall, it's important not to leave email unanswered for a long time. Basically I try to answer the emails I receive as quickly as possible. For this purpose, forwarding emails to my mobile is indeed very useful.

In fact, during the interview, Hiro's mobile phone notified him about received emails several times, and he checked them immediately. This emphasised the fact that he was engaged in a constant flow of multiple interaction threads. For him, it proved impossible at one particular time to focus on a single interaction at hand and to exclude others. He needed to juggle multiple interaction threads by effectively using technology.

With regard to telephone calls, he mentioned:

All members in my company and most clients and business partners know that I'm quite busy [laugh]. And they all know that I use mobile phone and email like this [forwarding emails to the mobile phone handset and replying to them as quickly as possible]. So they rarely ring my mobile, except in the cases of really urgent issues. Instead, they send me an email to check if I'm available or not.

In order to cope with an overwhelming amount of interaction, Hiro clearly needs to screen interactions to assess which ones pertain to less urgent issues, allowing him to direct his attention and time to the ones involving more urgent or important issues. It seems that he could use his secretary or other subordinates to sort out those interactions. However, he chose to manage all interaction himself by using a combination of technology and established social practices for using the mediated interaction media. He, in fact, clearly noticed that this way of managing interaction is only feasible in a small company.

[...] I don't think I can do this if my company gets much bigger, say having a hundred members of staff. But at the current size of the organisation, employing less than twenty people, I believe this is much better.

It is apparent that a technological solution is not always beneficial and sometimes ends up creating new problems. The effectiveness of a certain technology in actual work practices largely depends upon the context in which the technology is used. In Hiro's case, combining email and mobile phone resulted in effective management of an overwhelming amount of interactions. This does not mean, however, that such a technological solution works in *any* work context.

As seen above, Hiro is keen to maintaining direct control of the daily activities in his company. There is, however, an additional rationale for keeping the organisation small. A small organisation can easily remain agile and competitive. Just like Jun in the first case, Hiro is a man of the field. He spends a considerable amount of time outside the organisation, not only for meeting people but also for wandering and experiencing whatever is out there. For him, wandering around is a means of gathering lived information in the field where the actual social and economic activities of people are taking place. This information gathering is conducted purposefully in some cases, for example evaluating a new product in a shop, but it is also done without any specific purpose:

There are a lot of interesting things I come across when outside. It's not unusual at all that a trivial chat between women sitting next to me in a café inspires my next new idea.

He stresses that unexpected encounters with various happenings outside can hold possibly useful or important information for his business. Nowadays, people can get a wide range of information through the Internet. There are countless public and private sites, portals, mailing lists, bulletin board services (BBSs), chat rooms, auction sites, web application services, and so on. By using a search engine such as *Google* and *Lycos*, people can search and find information about any issue. However, Hiro asserts that there is still a need to “*verify*” information on the Internet by ‘analogue’ means.

I think that it is in the last few years that the Internet can be used as a not-too-bad data source for business. [...] But, still, you need to verify the information you get from the Internet. To do this, I go out, see with my own eyes, and talk with people about the issue in person. Wandering around is also one of my ways for verifying the ‘feeling’ I get from the Net.

It is particularly fascinating that even if he is in the software and digital contents business and his working life is widely supported by various ICTs, he still thinks of immediate information that he gains through traditional, direct means as important for his business. Hiro claims a similar role for magazines. He reads an extensive amount of material and diverse kinds of weekly and monthly magazines and journals, ranging from PC-related magazines and business journals to academic-oriented journals and pop-culture magazines aimed at both men and women. He admits that he relies heavily upon these magazines and journals for collecting the latest information. However, he again insists that the information needs to be verified

through ‘analogue’ means such as visiting the site, touching the products, and feeling the atmosphere.

What is important to him is the process of assimilating of information, how to filter and then interpret diverse information gained through various digital and analogue media including the Internet, magazines and journals, and by visiting and wandering around a site.

The fact that Hiro regards ‘analogue’ activities such as visiting and wandering as important for verifying information he gains through the Internet and magazines does not necessarily mean that technology does not help support ‘analogue’ activities at all. On the contrary, technological supports do help his ‘analogue’ activities. He claimed:

[...] As I go out quite a lot to see the site and the product I’m interested in, the mobile phone really helps me. By having my mobile I can contact and be contacted when outside. Also, as I said, emails are forwarded to the mobile handset so that I can receive and send email immediately. The mobile phone gives me substantial freedom to decide on where I should be. It’s absolutely clear that the mobile phone greatly helps entrepreneurs like me who have to move around. By using it we no longer miss the critical timing when making decisions.

The combination of the mobile phone and email forwarding clearly ensures Hiro’s extensive movement and timely decision making. As he clearly stated earlier, an entrepreneur’s mail job is making decision. Seizing the right timing is paramount for making the right decision. The mobile phone enables him not to miss the right timing and, at the same time, provides him with a high level of mobility in actual physical movement.

## **6. Three Aspects of Mobility**

In the previous section we have seen three distinctive tales of the mobile urban professionals and we in this section discuss how these three examples highlight three aspects of mobility: *locational*, *operational*, and *interactional* mobility.

The close examination of work practices of mobile professionals clearly demonstrates that the conventional understanding of the concept of mobility cannot fully grasp the essence of emerging mobile professional work. By definition, the meaning of the concept of mobility spans a wide spectrum of humans and non-humans as well as concrete and abstract spheres. It can primarily be applied to *anything* that is in a dynamic move or transformation. However, in spite of such a wide and diverse extent of the original meaning, the concept of mobility has been traditionally understood and used quite narrowly in contemporary business and organisational contexts. For example, the concept is typically used in such forms as ‘mobile technology’, ‘mobile office’, and ‘mobile work’ being the most relevant to this research. All

of these usages of 'mobile' refer to some sense of *geographical movement* or *remoteness from a certain fixed point or location*: The commonly used concept of mobility implies a geographical meaning of movement or being distant from a certain point. However, such usage of the concept ignores another important aspect of the original meaning referring to *transformation* or *motion* of object, state, conditions, or structures. Although mobile work typically means work involving "remoteness" or "separation from a resource-rich 'home-base'", what Sherry and Salvador (2002) call "truly mobile work" involves "both remoteness and motion, or at least more fleeting periods of stasis" (p. 110). As they argue, the conventional understanding of mobile work deals only with remoteness from a specific location and largely ignores the dynamism of work as such, although there are some notable exceptions such as Luff and Heath (1998) and Wiberg (2001). It could be argued that this limited perspective towards the concept of mobility resulted from the lack of close and detailed analysis of work practice by which the workers engage themselves into actual work contexts.

Consider some of the cases discussed in the three cases of Jun, Yoshi and Hiro described above. In the first case, Jun (#4 in Table 1), distinctively shows extensive geographical movement, moving within and between cities within a short period of time. Likewise, an entrepreneur in the health care service business (#25) moves extensively around the Tokyo metropolitan area to meet a number of existing and potential clients in a single day. A sales coordinator (#45), too, moves and walks around to daily inspect a number of shops. Taking the geographical movement or remoteness of their work, those cases are clearly 'mobile' work in the traditional understanding of the term. Applying Kristoffersen and Ljungberg's (2000) functional characterisation of mobility of people, their work practices clearly exhibit all the modalities: *travelling*, *visiting*, and *wandering*. However, their work practices can be seen as mobile not just in a geographical sense but also in their dynamic activities whereby they interact with a variety of people in constantly changing situations.

Dynamic aspects of mobility can also be seen in the cases where the worker's geographical movement is largely static. For example, in the second case, Yoshi (#18), has a static work style in a geographical sense, working from home for most of the day. However, when considering his intense interaction through the Internet, he constantly interacts with numerous people via various websites and services such as BBS. He actively exchanges valuable information relating to his design work, for example, information concerning evaluation and reputation of new software products. This clearly demonstrates that his work practices are *geographically* static but *interactionally* mobile and dynamic. Furthermore, the mobility of information in his work practices is considerably high, exchanging information with a global span. Similar examples can also be found in many other cases in the fieldwork such as a marketing planner mainly engaging in website design and evaluation (#10), a corporate researcher in a private research firm (#31), and an academic researcher (#62). Those

professional workers have not been deemed as ‘mobile’ workers, since in a geographical sense, their work is located primarily in a specific place for an extensive period of time. However, if taking interactional aspects of their work practices, they can reasonably be seen as ‘mobile’ workers, dynamically interacting with a wide range of people in their jobs.

In addition to the mobility in terms of geographic movement and of interaction, some of the mobile professionals interviewed show another distinct mode of mobility: mobility in *operation* of their work practices. Again, Yoshi (#18), works as the independent business on its own that does not belong to or is supported by a formal organisation. Firms in various industries, especially the entertainment industry including music and PC game businesses, are actively outsourcing CG design jobs to freelance designers working independently like Yoshi. This is because the firms are faced with the increasing need for cost reduction of design work and for gaining operational flexibility in order to quickly adapt to the transition of market trend. Taking advantage of this rapidly spreading outsourcing strategy, an increasing number of professional workers employed by and working inside organisations are seeking similarly “boundaryless careers” (Arthur and Rousseau, 1996) thus becoming independent and engaging in their own distinct working styles.

In short, various professional works that used to be internalised by the organisation are increasingly “unbundled” (Hagel and Singer, 1999) from the rigid operational structure and now operationalised by independent professionals, just like many people interviewed during this research. In this sense, Yoshi’s work practices of design can also be seen as a ‘mobile’ business unit, being unbundled from the organisational and utilised flexibly. This kind of mobility as an independent business unit is also seen in many other cases such as independent consultants (#1, #4, #23, #45), an architect (#34), a freelance producer (#29), and journalists (#42, #43). All of these cases demonstrate that their work practices demonstrate a large extent of mobility in terms of operation and little operational dependency upon other businesses. All of the professionals listed above are working alone without any formal employees and can act as a distinct business unit.

The results of the fieldwork therefore demonstrate that the conventional understanding of mobility, rigidly confined to geographic aspects, does not suffice for grasping the diverse realities of dynamic work practices of contemporary professional workers, in particular mobile professionals. Their work practices exhibit not only an extensive geographical movement in daily work activities but also intense interaction with a wide range of people through both physical and virtual interaction means. They also show flexible operation as an independent unit of business that can be flexibly mobilized by the firms.

Based on the results, the emerging mobile professional work can be analysed from three interrelated aspects of mobility: *locational* mobility concerned with the workers’ extensive geographical movement, *operational* mobility in relation to their capability for flexible

operation as an independent unit of business, and *interactional* mobility associated with their intense and fluid interaction with a wide range of people. The mobile professionals’ work practices display a high level of those mobilities, although the levels of mobility are uneven according to the nature of each work practice. Table 2 shows the mobilities of the professionals exemplified by the three focus cases.

	<i>Locational mobility</i>	<i>Operational mobility</i>	<i>Interactional mobility</i>
A: Town planning consultant	++	+	+
B: Freelance CG designer		++	+
C: Software entrepreneur	+		++

Table 2: Mobilities of mobile professionals in the three focus cases  
‘++’ implies a strong degree and ‘+’ a moderate degree of mobility

The work practice of the independent town planning consultant involves high levels of all aspects of mobility. The locational mobility of Jun’s work is particularly high: he worked across extensive geographical areas and demonstrated various modes of mobility such as *travelling, visiting, and wandering* (Kristoffersen and Ljungberg, 2000). His style of working in terms of such extensive geographic movement is most typically seen as ‘mobile’ work in a conventional sense. However, when taking a close look at his work practices, I found relatively high levels of other aspects of mobility. In terms of operational mobility, his business of town planning consulting encompasses a high degree of mobility as an independent business unit. He primarily works alone and employs no formal members of staff, but acts as a distinct project unit in various forms such as a consultant, a planner, a facilitator of local events, an outside advisor for local governments, and so on. In this sense, his work operation would hold a relatively high level of operational mobility, although he of course has to collaborate with other stakeholders in actual projects. Furthermore, his interaction with other people appears quite intense. He constantly interacts with various members of a project including client members, business partners such as major construction companies and media companies, and other professional workers such as architects and promotion planners. The ways in which he interacts with them also varies widely, from face-to-face to mediated interaction through the Internet. Thus interactional mobility of Jun’s work practices is also high.

In the case of the freelance CG designer, Yoshi, work practices distinctively show low degree of locational mobility, working at home for long periods of time. The level of operational mobility is, however, significantly high. As discussed previously, CG design work is increasingly unbundled from operational structures of large corporations. In his case, the music companies are seeking and utilising skilful freelance CG designers like Yoshi to constantly create and update a number of artists' websites every month. In this kind of business environment Yoshi can serve as an independent business unit outside of the established organisations. It can thus be argued that his work practices involve a significant level of operational mobility. Moreover, when considering the way Yoshi interacts with people, it can be characterised by a relatively high level of interactional mobility. By actively utilising various Internet technologies and applications, he intensively interacts with not only his clients but also various people on the Internet, most of whom he has never met before. In collecting the latest information about new software products on the Internet, he visits designed websites and BBSs on which people all over the world post their evaluation of the products. In terms of such a virtually conducted and intense interaction, Yoshi's work practices exhibit highly mobile and fluid features of interaction.

Finally, the case of the software entrepreneur, Hiro, shows a particularly high level of interactional mobility. On a daily basis, he constantly has to manage and sort out intense interaction from a significant number of stakeholders, including twenty members of staff in his company and external business relations. As the CEO of a small venture company, he has primal authority over the strategic decision making of the company. Therefore, he is constantly subject to the huge need for making decision quickly, leading to the high level of interaction. Thus the high degree of interactional mobility can be seen as a distinct characteristic of his work practices. Furthermore, the locational mobility of his work practices is also quite high in that he frequently goes out to meet people and to collect information in the field, for example in shops and on the streets of Tokyo. However, in terms of operational mobility, Hiro's work practices are relatively low, being constrained by various work conditions and structures. Being CEO of a small company, his work activities are inevitably restrained to large extent by various explicit and implicit obligations to keep the company's business running. Compared with totally independent freelancers who have few restrictions on deciding what to do and when and where to work, he has to pay much more attention to issues at the company level as well as those at the individual level. Despite such a relatively low level of operational mobility, however, his work practices clearly display the high levels of locational and interactional mobilities.

As clearly seen in these three focus cases, the work practices of each mobile professional interviewed show a distinct mixture of locational, operational, and interactional mobilities (see Appendix for details). For instance, work practices of independent consultants (#1, #5, #23, #35, #40, #45, #47, #50, #51, #52, and Jun) generally show the high level of mobility in

all aspects but particularly high in locational and interactional mobilities. Journalists' work practices (#16, #28, #42, #43) also show high mobility in all aspects but especially high levels of locational mobility involving rapid geographical movement on a daily basis. In contrast, corporate researchers (#6, #7, #14, #31, #58, #59) and academic researchers (#61, #62) have relatively low locational mobility, working primarily in fixed locations. However, their work practices show the highly level of interactional mobility, intensively interacting with various people through both face-to-face and mediated communication. Moreover, in spite of being employed by a firm or a university, they hold relatively high operational mobility, being able to work independently with few formal constraints from their employers. Sales coordinators' (#36, #44, #49, #60) work practices involve a significant level of locational and interactional mobilities, meeting a number of clients and customers in a single day, but quite low operational mobility due to formal employment relationship and largely rigid daily operation under supervision of the office.

As seen above, the most fundamental finding from the field study on mobile professionals is that the conventional understanding of the concept of mobility cannot explain the dynamic and diverse aspects of their actual work practices. As typically seen in various existing debates on mobile work such as Kristoffersen and Ljungberg (2000) and Bellotti and Bly (1996), the concept of mobility has been understood in terms only of the worker's geographical movement in their work activities. There is no doubt that contemporary mobile work is characterised by extensive geographical movement of the workers. Yet the concept of mobility originally holds much more diverse meanings referring to dynamic transformation of not only humans but also non-humans such as objects, information, conditions, and structures. Hence we should discuss the emerging mobile work from a broader perspective that can shed a light upon other aspects of mobility.

## **7. Discussion**

From the extended conceptual lens discussed above, which sheds a light upon not just locational but also operational and interactional mobility, various new insights of mobile professionals and their everyday work practices can be drawn. In this final section we discuss particularly four implications drawn from the theoretical and empirical study in this paper.

### ***ICT as mobility-booster***

The immediate issue to be discussed would be the role of ICTs, since mobile urban professionals' work is enabled by their intense use of ICTs, in particular the Internet and mobile technology.

As we have seen in the three tales, ICTs play various roles in their work practices. In the first

case, mobile access to email and mobile phone critically support Jun's everyday work practices. Since Jun frequently travels within and across cities and towns, he stays in his office for a sporadic period of time. With such a working style, the mobile phone enables him to contact and be contacted by people when outside. Stable access afforded by the mobile phone clearly ensures a high degree of locational mobility of his work practices. Moreover, his subnote PC provides him with a computing environment almost equal to that of his office wherever he goes. Jun uses his subnote PC for writing reports when being at a client's office, on the train or plane, or when staying in a hotel.

Furthermore, the subnote PC, connected with his mobile phone, offers him the ability to receive and send emails when on the move. In Jun's case, the mobile phone and the subnote PC afford him the continuity of his work environment for PC usage and the stability of communication access, which hence maintain his high level of locational and interactional mobility. Given the work practices of the freelance CG designer, the Internet technologies and applications are particularly important, supporting his intense interaction with people. I found that Yoshi's work practices displayed quite a low level of locational mobility. He mostly works alone at his home, being in front of PCs and other devices for CG design, although he sometimes goes out to meet clients and friends in the design studio. For this kind of work situation, effectively using the Internet can minimise the drawbacks of working alone at home. As seen in his utilisation of various websites and BBSs, the Internet can be an extremely useful conduit through which a wide variety of information can be obtained. The Internet has been typically understood as a means for information gathering, but it can also function as facilitating interaction with people, coordinating interpretation of issues, and supporting human relationship (Sørensen and Kakihara, 2002). In Yoshi's case, utilisation of the Internet, or more specifically 'always-on' broadband access to the Internet ensures his high interactional mobility in particular, providing him with the ability to interact with people.

Furthermore, Yoshi can gain a high level of operational mobility by utilising ICTs in general and the Internet in particular. Thanks to the rapid decline in the price of PCs and other computing devices, freelance CG designers like Yoshi can on their own establish almost the same computing environment as that in large design firms. This possibility for freelance designers to own powerful computing environments at a reasonable cost resulted in the unbundling of CG design work from operational structures of large companies. In addition, the Internet also ensures the high level of operational mobility in CG designers' work practices, enabling them to work independently without material and infrastructural supports from large organisations. In the case of the software entrepreneur, it is clear that ICTs, particularly mobile technology, play a critical role in supporting mobility of work practices in general and locational and interactional mobility in particular. Hiro is constantly subject to intense levels of interaction from a diverse and only partly predictable set of people. As clearly seen in his work practices, the combination of the Internet-enabled mobile phone and

email forwarding provides him with an ability to manage the intense interaction effectively even when on the move. Continuous accessibility is essential for his quick decision making for the company, delivering important information and issues to him without delay.

Other cases of mobile professionals also show various roles of ICTs in their work practices. As briefly touched upon in the previous chapter, some informants claimed that they prefer laptop PCs as their main computer even when working inside their office. This is mainly because they can bring the office PC environment with them when needed by carrying their laptop PCs. This is exactly the case when the continuity of PC environment can facilitate locational mobility of work practices. Furthermore, stable 'always-on' access to the Internet for individuals such as DSL services and the Internet access via cable TV lines enable a wide range of mobile professionals, especially freelancers, to have an opportunity to be independent of the formal organisations without being lagged behind the current market trends.

However, it is important to note that simple introduction of ICTs does not necessarily increase mobility of work practices in a straightforward manner, since the actual ways of utilisation of a particular technology may vary significantly amongst the workers. For example, some informants asserted that PDAs could support their work activities especially when going out, whilst some others insisted that the usability of the existing PDAs was too poor and cumbersome to utilise in a business settings. A similar story can also be seen in the case of the emailing function on the Internet-enabled mobile phone. The majority of the informants stated that they did not use the email sending function on their mobile phone as frequently as the email receiving function simply because the interface for typing words on a mobile phone handset was extremely cumbersome due to a limited number of keys. However, some (#23, #30, #53) mentioned that they used the email sending function on their mobile phone frequently, since they constantly face the need to reply to incoming email quickly, for instance just sending a short message like "Got it. Call U in a minute."

This is exactly the reason why we need to look at actual work practices embedded in a local context to appreciate the significance of the utilisation of ICTs. The impact of a particular technology on work might vary significantly depending upon what condition and occasion it is actually used. For example, the mobile phone has been typically regarded as enhancing locational mobility of users' activities by affording them stable communication access irrespective of location. However, such stable and constant access may hinder the users' locational and operational mobility due to the overwhelming amount of interaction they are exposed to. Human interaction is inherently situated in a particular context that recursively frames and is reframed by the actual practice of action. Suchman (1987) argues that "the coherence of situated action is tied in essential ways not to individual predispositions or conventional rules but to local interactions contingent on the actor's particular circumstances"

(p. 28).

The introduction and utilisation of ICTs can generally support and facilitate mobile work practices of professionals; however, the impact that a certain technology holds and the extent to which it influences can vary significantly according to how and in what context and circumstance the technology is actually used.

### ***Maintaining multiple on-going interactions***

When taking a closer look at the cases of the mobile professionals being exposed to high levels of interactional mobility in work practices, we can find an interesting but largely ignored fact. Mobile professionals being subject to intense interaction with a number of people are coping with *multiple on-going interactions*, rather than single, sporadic interaction.

Issues around human interaction have attracted the attention of many scholars in a wide range of research fields concerned with technology including CSCW, Computer Mediated Communication (CMC), sociology of interaction, and workplace studies. This is mainly because human interaction has been significantly influenced by the rapid diffusion and intensive utilisation of ICTs within our social lives. However, with a few exceptions (e.g. Ishii and Miyake, 1991; Whittaker et al., 1997; Wiberg, 2001), most of the research has focused upon ‘one-shot,’ sporadic interaction taking place one by one, be it face-to-face or mediated. For example, Olson and Olson (2000) discuss in great detail effects and consequences of computer mediated communication between people at a distance. However, their analytical focus is exclusively on ‘one-shot’ interaction that involves identifiable beginnings and ends.

However, for studying work practices of mobile professionals who are faced with high levels of interactional mobility, only considering interaction as ‘one-shot,’ sporadic interaction does not suffice. To that end, it is crucial to examine interactional mobility of the mobile

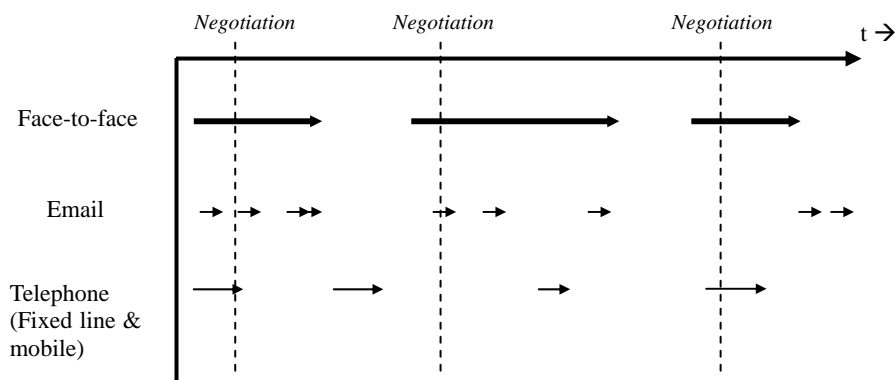


Figure 3: An image of multiple on-going interactions

professional is a perspective that illuminates *multiple on-going interaction* in their work practices (see Figure 3). When closely considering the cases where mobile professionals show high levels of interactional mobility such as Jun and Hiro, it is apparent that they frequently face occasions where they have to manage and sort out different kinds of interactions simultaneously. In Hiro's case, it is normal that he receives several calls on his mobile phone whilst engaging in a face-to-face meeting. He also frequently receives important emails forwarded to his mobile phone, each associated with a distinct sound notification. In both cases, he cannot ignore those incoming interactions simply because those can contain extremely important information or issues.

As mentioned previously, several times in the fieldwork, I actually came across the situation where the interviewee received a mobile phone call during the interview session. Whereas some interviewees checked the caller's name appearing on the screen, ignored it, and immediately retrieved his or her attention to the interview session, most of them replied to the calls and initiated a phone conversation. It is easy to imagine that such an incident can take place in many other situations. The immediate issue here is that in the work practices of mobile professionals, particularly having a high level of interactional mobility, the workers are subject to an increasing need for negotiating multiple threads of ongoing interaction.

### ***The importance of personal networks***

Throughout the fieldwork, we have come across a number of instances whereby the mobile professionals interviewed asserted the importance of personal relationships with a multitude of people for doing their jobs. As we have seen in the three focus cases, they all mentioned how heavily their business or daily jobs depended upon their personal relationships with friends, clients, members of projects, and so on.

Jun, an independent town planning consultant, admitted that the personal relationships that he had built during his career in the consultancy firm greatly helped him start a new career as an independent consultant. He stated that in the first two months after starting the independent consulting business, he "*struggled to get new jobs*" by approaching various potential clients with his plans and ideas. However, the first job he finally gained was not from such private hunting but through an introduction by his close friend who was still working in the consultancy firm. Furthermore, as seen in his case, he started sharing an office room with a friend working as an independent architect. Without this personal relationship, he could not have had an office outside his home at affordable costs.

Similarly, Yoshi, a freelance CG designer, relied heavily upon his personal networks for business. Just like Jun, Yoshi was greatly supported by his friends whom he met in his previous career in a big design firm. As he stated, the personal "*networks of friends*" he had built during his previous career and through interaction in the design studio were the main and

essential source of his business. He has not engaged in any promotional activities to secure new jobs, even in the beginning of his independent career. Almost all his design jobs came through the introduction by his friends and existing clients. Moreover, he frequently exchanged valuable information and collaborated with people whom he met in the design studio for a new design job or project. Serving as a 'salon,' the design studio facilitates such collaborations amongst the members of the studio. He, furthermore, has extensive 'virtual' networks with people on the Internet. Information he gains through BBSs and mailing lists is essential for him to be updated about new hardware and software products. It is thus clear that Yoshi's everyday work practices are critically supported by his personal social networks.

Hiro, a software entrepreneur, started his company with a friend. Whilst his company currently employs around twenty members of staff, all the members except for the part-time staff have entered the company through Hiro's or other member's personal networks. Thanks to this close relationship amongst the members and its small size, Hiro's company still presents the atmosphere of 'a garage company' in spite of the dramatic financial success.

All the facts above clearly demonstrate that the mobile professionals' work practices are heavily dependent upon personal networks that have been built through collaborative work activities in the past. Work practices build and enact personal networks, which in turn support future effective work practices. Many scholars have addressed this dynamic nature of personal networks (e.g. Dubini and Aldrich, 1991; Granovetter, 1973; 1982; Haythornthwaite, 2001; Pickering and King, 1995). Amongst them, Nardi et al.'s (2002) work is perhaps the most relevant to the discussion here, since they address in detail the increasing importance of what they call "intensional networks" in contemporary work environments. Whilst such networking practices have been seen so far in a limited number of project-based business fields such as the film productions and music industries, Nardi et al. argue that the importance of personal networks is also rapidly increasing in corporate life in general. Here it could be argued that mobile professionals heavily depend upon such intensional networks in their everyday work practices more than ordinary workers, since work practices of mobile professionals inherently cross team, group, and organisational boundaries. Since mobile professionals usually cannot or are not willing to have strong and widespread institutional and infrastructural supports from organisations for their everyday work practices, they seek to build and maintain their own personal networks, which penetrate a number of organisations, for keeping their businesses running. For them, personal networks are not merely networks of friends but rather an essential social foundation for current and future collaboration. All the professionals interviewed have clearly understood the importance of such personal networks for their effective working and networking in everyday activities

### *Places as material foundations for interaction*

The results of the fieldwork also indicate that in spite of the increasing prevalence of

technologically mediated and virtual interaction with people in work environments, physical spaces where people can meet face-to-face still holds an important function for mobile professional work. It was surprising that all the informants interviewed strongly insisted that a physical space such as an office and a meeting room was absolutely necessary for their work practices, even in the cases of the professionals interacting with people mostly through the Internet (an independent website creator: #22; an independent systems consultant: #35).

As we have seen in the case of Jun, an independent town planning consultant, the office served as his “*base of operation*” that could settle to some extent his work practices involving a significant level of locational mobility. For the workers who own many things such as machines, facilities, devices, and/or tools for their daily work practices (e.g. an independent architect: #34, a freelance graphic designer: #15), the office space is an important storing space for those things. Moreover, as many others interviewed also mentioned, Jun uses the office space for a social status reason. In the Japanese business context, independent professionals without a formal office space could be faced with a significant problem in getting new jobs or projects from the large corporations that typically care much about whether such professionals do ‘proper’ business or not. Taking these aspects together, the office space can be a place for the *material foundation* of their work practices.

In addition to such a material-based function, a physical space can act as supporting and facilitating interaction. In the case of Yoshi, a freelance CG designer, the design studio could be used exclusively by the winners and the finalists of the CG design award as a “*salon*” where a number of designers could meet up and engage in informal conversations. As he mentioned, informal interaction taking place in the studio facilitates the exchange of valuable information in the community, especially concerning new jobs. Furthermore, ad-hoc collaboration amongst the people can emerge out of such informal interaction. Orr (1996) discusses in detail such functions of information interaction in workplace settings. In some cases, such a space is not fixed in a specific location. An independent IT consultant (#23) regularly organises “*a beer party*” at a local pub or restaurant where his friends and their friends just meet up and have a chat over a beer. He regards this occasion as “*very useful for getting to know each other and exchanging various stories and episodes of their jobs*”. As seen, a place like the studio and the pub can play the role of the foundation for interaction.

Various realities around the mobile professional work resulting from increased mobility in locational, operational, and interactional aspects of work practices tend to make us believe that most of their interaction can be established through technologically mediated ways. On the contrary, a specific place or location still plays critically important roles to support and facilitate their everyday work practices as the material and interactional foundation.

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