Mobile Government: Towards a Service Paradigm[*]

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Abstract: *The convergence of mobile communication and mobile computing technologies opens up new horizons for mobile interaction and mobile working. The use of mobile technology in the government sector not only provides an alternative channel of communication and public service delivery, but more importantly, it can address the mobility of the government itself and in this way transcend the traditional e-government service delivery model by bringing personalized, localized and context aware services close to its citizen. The case of Beijing is analyzed in this paper. A distinct fluid organization emerges in mobile government practices in Beijing. With the challenges and opportunities provided by mobile ICT, government should shift from manufacturing mentality to service mentality and be aware of the potentials of mobile government to transform the government to be more agile, responsive, accountable, and action oriented.*

Key Words: Mobile Government, Mobility, Service Delivery, Fluid Government

1.0 Introduction

The rapid diffusion of mobile ICT such as laptops, mobile phones, PDAs (Personal Digital Assistants), along with emails, instant messaging and other networking services have rapidly fuelled the mobilization of interaction (Sørensen, 2003). People, vehicles, air traffic, post and information become more mobile around the world and our society is increasingly recognized as a nomadic or mobile society (Castells, 1989; Giddens, 1999; Urry, 2000). All these clearly indicate the rapidly growing public interest in mobility and various issues relating to 'being mobile.' (Kakihara 2003) The fluid metaphor of mobility in organizational interactions is also proposed by Kakihara and Sørensen (2002a). Dearle (1998) argues that, as interaction goes with the users, mobility has been regarded as a new paradigm in computing. Hjelm (2000) declared that following the Internet revolution is the mobile revolution. Society will be marked by mobile, "Always-on" citizens, government, as well as the transient online communities. Governments need to take full advantage of the mobile and wireless ICT technology as well as dealing with the fluidity of the interaction with the mobile society.

The challenges of m-government in an "always-on" society with a fluid workforce will be even tougher than the e-government transformation (Maio, 2002). Government, especially local government, has to provide infrastructure and services for its designated region. Governments have to deal with the mobility of government itself. While the conventional e-government efforts focus on providing services through internet portals, it failed to deal with the mobility of the government and the mobile society at large. By analyzing the cases of Beijing, this paper tries to explore the theoretical underpinnings of the mobile

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government. And by analyzing and discussing the case of Beijing, this paper suggests a paradigm shift of government service delivery model; and by drawing from Mol and Law's three social topologies of mobility, the paper also proposes a metaphor of distinct fluid organization for a shift from the manufacturing mentality to service mentality for an action oriented, agile, efficient and responsive government.

2.0 Mobile ICT and Mobility

The number of mobile users is increasing and has already surpassed the number of households with internet access (Roggenkamp 2004). With the help of mobile ICT, people are not fixed to their office any more. They can organize and coordinate their interactions and exchanges just in time and just in place. Dealing with bureaucratic document in the office was replaced by fluid interaction in the real context and thus improved efficiency of works (Dahlbom and Ljungberg, 1998). When exploring the driving forces of mobility, Kristoffersen & Ljungberg (1999, 2000) suggest that a society evolves more through cooperative work instead of bureaucracy; organizations more through service instead of manufacture orientation, and tools adoption such as mobile phones, together contributed to it.

The research of mobility, in the sense of human movement, combined with technologies, that are portable and hence mobile themselves, lead to functional characterizations of mobile technology use (Kristoffersen and Ljungberg, 2000). Mobility was used primarily to denote the movement of human body. It is now used more broadly to refer to the interactions that people perform. Kakihara and Sørensen (2002a) discuss spatial, temporal, and contextual aspects of mobility to illustrate the relationship between mobility and human interaction. Mol and Law (1994) proposed three distinct metaphors of social topologies drawn from their investigation on the spatial properties of anaemia, namely, region, network and fluid. The region is a distinct topology in which objects are clustered together and boundaries are drawn around each region cluster. Therefore, region is characterized by boundary. The network is a topology whereby relative distance is a function of the relationship between components which constitute the network, just like the Chinese Weiqi (or Go, kind of chess), where complex connection of nodes creates the whole network structure which can be characterized by relationship between the nodes. Fluid is a topology whereby "neither boundaries nor relations mark the difference between one place and another. Instead, sometimes boundaries come and go, allow leakage or disappear altogether, while relations transform themselves without fracture. Sometimes, then, social space behaves like a fluid." A fluid world is exactly the description of Taiji in Chinese culture; it is a world of variation without boundaries and transformation without discontinuity. Therefore we would like to use the boundary of a nation, Weiqi chess, and Taiji (see Figure 1) as metaphors of the three social topologies proposed by Mol. and Law.
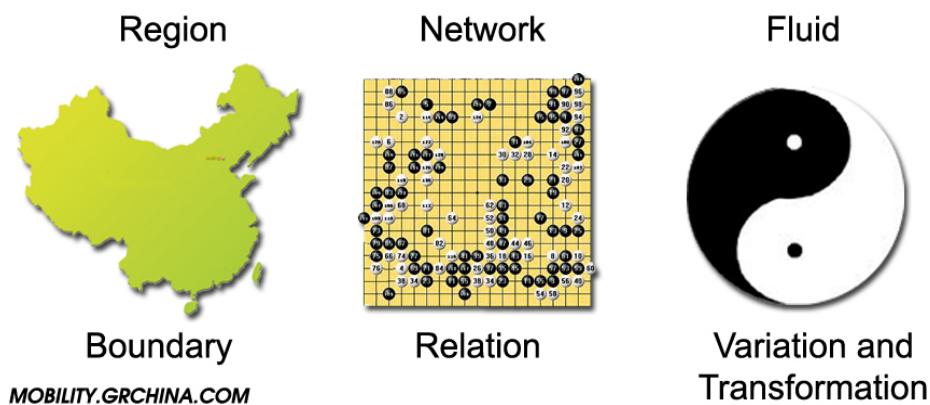

Figure 1: Social Topology (adopted from Mol and Law, 1994)

Mobile technologies mobilized the human and technology interaction. By ability of interacting in different contexts, the new technologies redefine the sense of belonging to a place (Fortunati 2000). Mobile devices should be conceived of as multiple contexts made up, on the one hand of the virtual, and on the other hand of the real. Kakihara and Sørensen (2002a) suggest and discuss the adoption of a fluid metaphor of mobility. Pica and Kakihara (2003) tried to theorize the mobility as duality of stable interaction and fluid organization. Stable interaction with routines enables fluid organizations while increasingly fluid work practices require a blurring of the organizational boundaries, thus "mobility does not mean independence from place but rather an optimal dialectic between real and virtual environment, between stability and fluidity."

3.0 E-Government and Mobile government

Governments have long recognized the potential of ICT to bring about fundamental changes, not only in the way they function but also in their relations with other organizations, societal groups and individuals. Both in their relationship with the citizen, inter-organizational arrangements, and in intra-organizational activities, ICT and Internet technology in particular, has seemed to promise enormous opportunities to reinvent government, to increase efficiency and effectiveness in public sector.

In the e-government literatures, there are various articles talking about the use of Internet technology to provide effective and efficient services to the public, to reinvent and transform the government (Heeks, 2000; Fountain, 2001; Ho, 2002). Jane Fountain (2001) suggests the concept of "virtual state" about a governmental entity organized with "virtual agencies, across agency and public-private networks whose structure and capacity depends on the Internet and web." We have to acknowledge that e-government initiatives have already brought transformation as well as efficiency and effectiveness to the government. Ho (2002) argues e-government as paradigm shift of public service delivery in the internet Age.

While e-government is generally the conventional government services made available for citizens through internet portals through internet connected computers, m-government is defined as the strategy and its implementation involving the utilization of all kinds of wireless and mobile technology, services, applications and devices for improving benefits for citizens, business and all government units (Kushchu and Kuscu, 2003). The emergency and convergence of mobile technology, such as internet enabled mobile phones, PDA, WiFi and wireless networks, spurred the development of m-commerce, m-business and m-government (Song, 2005a; 2005b). Mobile computing in local government tends to mean delivering services in the field – in the streets, in people's homes or other convenient locations, rather than the customer having to visit government offices or log on to the internet portals to access services. Song (2005b) calls to transcend traditional e-government research and to recognize the potential of mobile government to transform the government organization. In this paper, we will try to analyze the transforming of mobile government through the case of Beijing.

4.0 A Case of Mobile Government in Beijing

4.1. Local Governance in Beijing

There are three levels of government in Beijing: the municipal level headed by the mayor, the district level, and the neighborhood level. Below the neighborhood level, there are residents committees usually functioning as autonomous organizations for the residents. Dongcheng District, which is the first district to pilot the mobile government initiative, is a central urban district of Beijing with a registered population of 625,000, covers an area of 25.38 square kilometers.

With its fast economic development, China has experienced rapid urbanization during the last two decades. The cities are changing fast with a large amount of construction, while the relatively weaker management of the city is a common problem for most Chinese cities. The fragmentation of responsibility among dozens of

government departments, the lack of proper maintenance of the municipal infrastructure and street scene is widely recognized.

For information from the residents to reach the top of the district power structure, it usually passes through bureaucracy of the residents committee, neighborhood committee, representatives from specialized departments at neighborhood committees, specialized department of the district, municipal administration of the district, deputy head of the district, and the head of the district. Not to mention the bureaucracy in each of these departments.

Orders from the top also need to go through the bureaucracy in reverse. Though there are already Internet connections among the government departments, they only serve as an alternative communication tool alongside telephone and fax. There is not much incentive for government employees to go to inspect and solve more problems. Employees usually stay at their office, wait for the dispatch of tasks and then go for field work. During the work they usually make some notes, which are keyed in afterwards back at the office. This process is highly inefficient. Responsibility intersections among the specialized departments exacerbate the situation. Many times, when one department dispatches staffs to investigate the situation, they find it is not their responsibility and it is re-reported to the higher hierarchy for reassignment to another department.

4.2. ICT Development in China at a Glance

According to statistics from China Internet Network Information Centre (CNNIC, 2005), there were 94 millions Internet users in mainland China by December 2004 with a penetration rate of 7.16%. There is already some discussion about the extent to which large e-government investment will widen the digital divide in China as the majority of citizens can't benefit directly from e-government projects based on Internet access. Comparatively, the number of mobile phone users has reached 335 million (MII, 2005) with a penetration rate of 25.5%. Big cities have a much higher Internet and Mobile penetration.

Beijing is the capital city of China with a population of 14 million. By the end of December 2004, Internet users were estimated to be 4.02 million with a penetration rate of 27.6% (CNNIC, 2005), the mobile phone use achieved 13.359 million with a penetration rate of 90.6% (BMBS, 2005) in Beijing. The high penetration of mobile phones attracted many government departments to try to take advantage of it to deliver a better service. These services mainly focus on use of short messaging service (SMS) to deliver information to citizens, such as taxation department use of SMS to deliver information about tax collection, police authority to delivery information about emergencies, education department to release result of exams. In contrast, this paper focuses on the case in which Beijing employee mobile technology to deal with the mobility of government itself.

4.3. Mobile Government Initiative and its Pilot

As the fragmented, highly bureaucratic and inefficient city management problem is widely acknowledged, the leadership of Beijing decided to take advantage of ICT to reinvent the municipal administration. As the head of Dongcheng District is very interested in ICT and innovation, Dongcheng District became the first district in Beijing to pilot this initiative. Here we refer the municipal administration to the management of urban infrastructure (street lighting, drainage, water supply facility, all kinds of underground pipelines etc.), housing, gardens, construction, environment protection, and city appearance.

Under the leadership of the head of the district, this project started from the beginning of 2004. The district uses gridding technology, dividing the area of 25.38 square kilometers into 1652 cells; each cell is assigned a 6 digit number, the first two digits represent the neighborhood (at sub district government level), the second two represent the community (respect residents committee), the last two represent the exact cell. A thorough survey about the public facilities (public conveniences, bus stop signs, public telephone booths,

manhole covers, etc.) in the district was also carried out to map the locations of each public facility in GIS system. Each public facility has been assigned an 8 digit number and is placed in its relevant cell.

The project also identified 4 layers of responsible entities: the first is the district government; the second is the 10 neighborhood committees; the third is the 137 residents committees; the forth are the institutions in the relevant 1652 cells.

In this project, the District Government split the supervision function from the management function. Two Centres were established: the Supervision Centre and the Command Centre. The Municipal administration supervision Centre was newly established to be independent of the existing municipal administration commission.

The supervision Centre recruited 400 supervisors each responsible for about 12 cells, about 180,000 square meters area and up to 1400 public facilities. The supervisors patrol their responsible areas to spot, check, report, monitor the municipal administration related problems and ensure the problems are properly solved. Each supervisor is equipped with a bicycle and a smart mobile phone (or "Cheng Guan Tong" in Chinese) to use when patrolling his or her cells. The location and working status of all supervisors at work can be located and monitored at the center through the GPRS (General Packer Radio Service) network. The Supervision Centre also operates a call centre to receive phone calls of complaint from the public. As remarked by a government researcher, "this is a fundamental change in the management method. Before that, the specialized department act not only to identify the problem, to solve the problem, but also to conclude the case. There is just no incentive for them to do it better. When there are too many problems, they just pretend to keep one eye closed and the other open. For the first time, the player does not act as a referee any more."

The District Municipal Administration has been renamed to become the District Integrated Municipal Administration, a name change to emphasize its coordination responsibility. It operates the command centre that coordinates all the specialized departments and lower level governments, as well as providing coordination with other relevant government departments at the municipal level. The Command Centre receives task from the Supervision Centre and coordinates with all relevant departments to get things done. The tasks received are assigned to the relevant specialized department through the network, and the processing status is then monitored.

With GPRS connection to the supervision Centre through the mobile phones, supervisors can receive instruction from or make phone calls to the Centre. They also receive complains from the residents (or transferred from the call Centre at the supervision Centre), confirm it, and send the information back to Supervision Centre. The supervisor can take photos with the mobile phones and send these back together with the GIS position. The Supervision Centre then passes the information on to the Command Centre. With accurate information about the report and the location of the problem, the Command Centre can identify the problem and facilitate the solution process easily. After the problem is solved, the supervisor will visit the place and confirm it with

Smart phone used by supervisors in Beijing

another photo. Only after this, will a report be marked as clear.

What is very interesting is that, when the residents saw the supervisors taking photos with their smart mobile phones near their residence, they were reluctant to believe that it would work - "Before, you have Internet, e-government, now you even have camera! No use at all, but a waste of money". When they found that local environmental problems had really been solved in a much more efficient way, the residents were very happy. Residents even like to ask the supervisors in their community for help if they encounter any problem and sometimes invite the supervisors to their house and have a cup of tea.

4.4. Full Implementation of Mobile Government Initiative in Beijing

The success of the pilot project in Dongcheng District of Beijing has attracted wide attention in China. The leadership of Beijing decided to push it forward further. The Informational City Management System which aims to reinvent the municipal administration in all of Beijing is put in to trial operation in Beijing in 31 December, 2005. An informational city management platform at municipal level is established in Beijing Municipal Administration Commission (BMAC). Informational city management platforms at district level (include a command and a supervision center in each district) are also established in Xicheng District, Chongwen District, Xuanwu District, Chaoyang District, Haidian District, Fengtai District, Shijingshan District side by side with Dongcheng District. All the 8

Information about supervisors displayed from Screen at the Center

informational city management platforms at district level are connected to platform at the municipal level to enable real time information share and exchange.

Till the end of 2005, all the urban area within the third ring road (including all areas of Dongcheng District, Xicheng District, Chongwen District, Xuanwu District; parts of Chaoyang District, Haidian District, Fengtai District) and all the area of Shijingshan District, parts of urban areas beyond the third ring road of Chaoyang Distric, Haidian District, Fengdai district are divided into 10054 grid cells, which covers an area of 304.5 km^2. The information of 1.37 million public facilities have been surveyed and put into the data base. A total of 4600 smartphones have been purchased by Beijing and have been allocated to the 8 urban districts of Beijing. 1706 mobile supervisors are already deployed in the 8 district of Beijing.

The system will not only connect all the information platform at district levels, but also connect all the public facilities and public service companies (such as public transport companies, power supply companies, central heating companies, water supply companies and waste management companies) and different governmental department at municipal level (such as Beijing Municipal Committee of Communication, Beijing Construction Commission, Beijing Water Authority, Beijing Environmental Protection Bureau, Beijing Municipal Bureau of Parks, Beijing Traffic Management Bureau etc.) to enable a fluid cooperation and interaction among the government departments, public facilities and service business and citizens. The operation of the system facilitated by mobile technology enables a fluid government practice which shares the same spirit of the of the real time enterprise (Song and Li, 2006).

5.0 Analysis of the Mobile Government Case in Beijing

In the information age of high uncertainty, ICT plays an increasingly important role in the transformation of our society and organizations (Castells, 1989). The role of ICT in organization has already changed from a

mere supportive tool to a major contributor to the form of organizations (Malone, 1987).ICT is a driving force for competitive advantages and should be utilized in a strategic manner (Porter and Millar, 1985). From the case of Beijing, we can clearly observe that government is transformed by implementation of mobile government initiatives. It is necessary to observe the mobile government and its transformation through the organizational change perspective in order to find the theoretical underpinning of mobile government. By combining the organizational change model of Shao and Liao (1996) and Leavitt's Diamond (Leavitt, 1965), we would like to propose the following model (see Figure 2) to analyze the case of Beijing. According to this model, there are six variables in the organizational change: people, structure, processes, technology, connectivity and boundary.
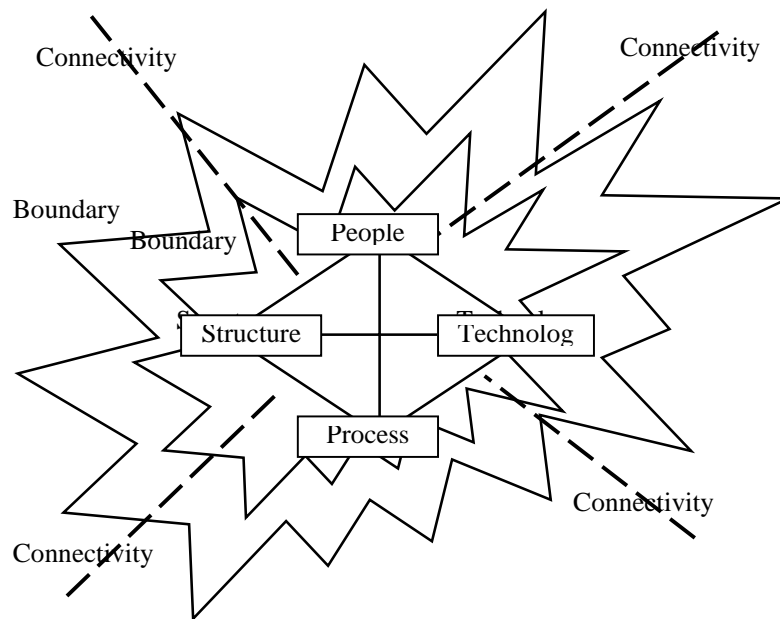
Figure 2: A Revised Model of Organizational Change

In the case of Beijing, the forming of the multi-disciplinary, multi-department taskforce, which is headed by the top leader, to lead the initiative not only provides expertise, technology inventory, but also provide proper power structure to reengineering the process. Proper publicity and proper training is also key to the implementation of the initiative.

With the process reengineering and the help of new technology, government staffs no longer stays in the office to process the information, they are in the field, interacting with the citizen. The former metaphor of the government office with government buildings dissolves by the fluid work practice. Through the mobile phones, the mobile workers still have constant connection with the centre. While they are also part of the government organization, some of them feel marginalized from the government staffs who work in the office headquarter. It seemed that the organization have multi-layered boundaries, or that the boundary is just dissolving.

By applying the revised organizational change model, we could notice the further dissolution of the organizational boundaries and transformation of the connectivity, interactions among actors within and outside the organization. This is exactly what Pica and Kakihara (2003) called stable interaction, and fluid organization enabled by mobile technology. Stable interaction transforms the connectivity among actors, within and outside the organization, thus causing a fluid work practice, and leading to further dissolution of the organizational boundary.

The management of a district is geographically constrained by boundary and government organization is highly hierarchical. Through the integration of mobile system and GIS, GPS enabled gridding management, we can observe a managed fluidity which is different from the fluidity of "post modern professionals" as phrased by Kakihara and Sorensen (2002b). From the perspective of the duality of mobility by Pica and Kakihara (2003), we would like to call this a managed fluid organization. We can also observe a more fluid information flows from supervisor at field to command and supervision centre and vice versa.

We should also be aware of the stable interaction side of mobility in this case. As the supervisors are in constant connection with the supervision centre, and their location and activities are continuously monitored, it is more manageable while causing some controversy over privacy issues. In the case study, the newly hired supervisors for mobile work have been highly inspired by the change brought by their work and the positive reaction from the citizens. They also don't need to report periodically to the centre about their locations and working status, as all this is highly automated. The stable interaction of mobile work has helped the supervisors to focus more on their work and helped the fluid interaction with the centre and the target citizens. The fluid information flow between the centre and field achieved in this case has enhanced better hierarchy control with higher efficiency and has shown strong potential to eradicate complicated bureaucratic procedures. With this managed fluidity, we could expect flatter but enhanced hierarchy in the government sector to further dissolve the traditional organizational boundaries as the projects carry on. With better central control and fluid interaction facilitated by mobile technology, we can also expect more integration of government departments instead of functionally fragmented departments and may also expect a kind of vertical integration. Such integration helps to internalize the friction among different governmental departments and potentially change it into internal cooperation. Vertical integration will help to facilitate public-private partnership for better service delivery. While the mobile government initiative is still in its early stages, we may expect more organizational change in the future.

In mobile government implementation, the most important issue is the alignment of organizational change with organizational strategic goals, followed by information flow integration and then technology issues (Song, 2005a). Mobile technology thus must go together with other management measures. In the case of Beijing, mobile technology is accompanied by the grid management, government restructuring and process re-engineering to get full advantage of the mobile government initiative. The involvement of the top leadership of the district in the initiative and their full support has certainly been a key factor to success.

By the implementation of this mobile government initiative in Beijing, the local government has created a distinct work environment, a fluid platform for the coordination of the highly mobilized interaction of people, objects, voice, image and data. This work environment can be characterized by its fluid topology, where such heterogeneous elements in the distribution of operations dynamically interact with each other in both physical and virtual spaces and thereby providing effective and efficient services to the citizens.

6.0 Discussion: Towards a Service Paradigm

Last few decades has witnessed the continuous increase of the proportion of service works versus manufacturing works. Service work differs greatly from the manufacturing work in that it happens where the customer is instead of where the machinery is; this contributed significantly to the increasing mobility (Kristoffersen & Ljungberg, 1999). Since the industrial revolution, most of the work has been carried out in offices, factories, shops and other fixed locations, depending on the physical settings and working hours of an organization to coordinate the work in time and space. Spurred by the emergence and convergence of ICT, the rapid development of ubiquitous computing, which is typified by mobile technology, makes it feasible to move information work away from the fixed desk to support the service work engaged with the customers where they are (Song, 2005a; 2005b). For Local Authorities this has the potential to utilize the mobile technology, adapting the service mentality instead of the manufacturing mentality, take the work

closer to the public, allow more integration of services and providing employees with a more flexible approach to work.

With the fluid work practice enabled by mobile technology, mobile government is quite different from the former organizational forms of government in the era of pre-ICT, and the so-called e-government, which is focused on the use of Internet for service delivery, such as information sharing and online transaction. From the case of Beijing, we could see that, while the e-government initiatives have failed to live up to expectations for local citizens, mobile government initiatives have rebuilt trust through closer personalized interaction with the citizens and more effective and efficient service delivery. Wireless revolution from a business perspective, introduces practical strategies business to be willing to adapt from tethered, PC-centric model to mobile, people-centric techniques and strategies and create new capabilities and options in this mobile world. Mobile devices are considered more personal (Sørensen, 2003). Mobile network are socially profound technologies not only because it provide alternative channel, but also because they bring the power and connectivity of virtual world into the gap between humans as they interact in physical space, it can cope with the mobility of the citizen as well as the government itself. Thus by the analysis above, we would like to argue a government service paradigm shift about mobile government (see Figure 3).
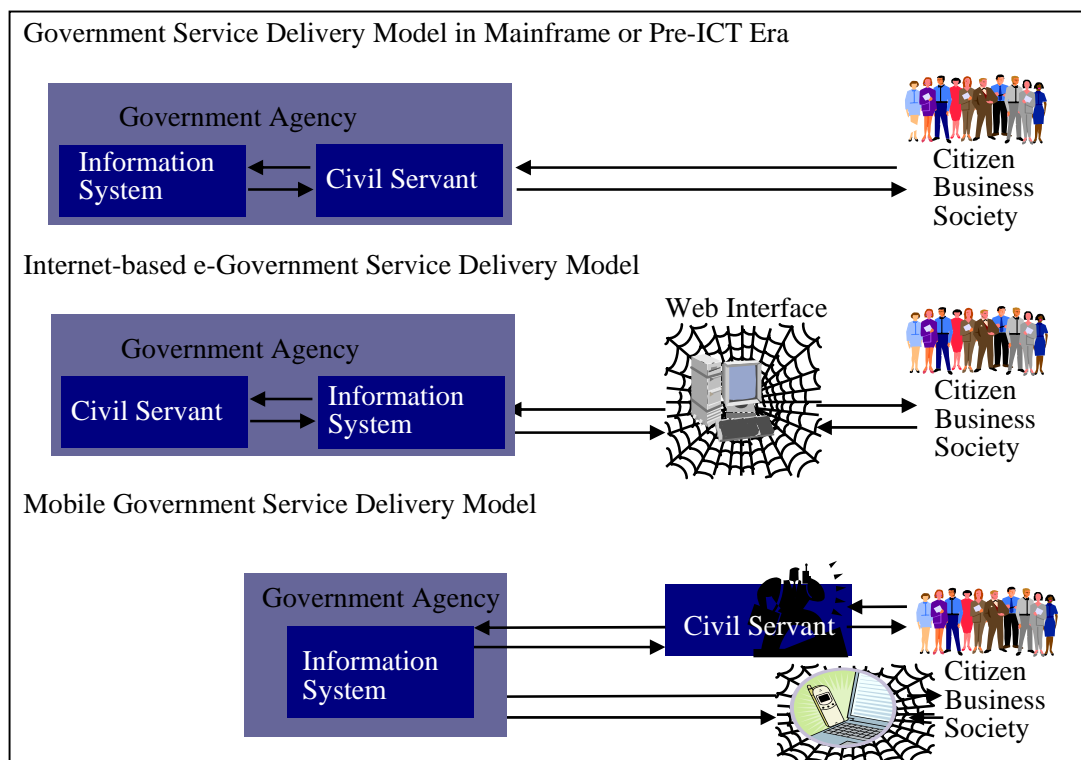

Figure 3: Mobile Government as a Service Delivery Paradigm Shift

The burgeoning growth of new ICTs and its convergence usher in the new virtual world and offer strong impetus for social transformation (Castells 1989). They suggest a profound change and mark the contrast of virtual with the physical. This in turn has the advantage of asking us to rethink what we have been taking for granted about the non-changed entity.

Kakihara and Sørensen (2002a) discussed spatial, temporal, and contextual aspects of mobility to illustrate the relationship between mobility and human interaction and hence push forward the fluidity of mobility. Castells (1996, 1989, 2000) proposed the concept of "timeless time" and "space of flows", which are distinct features of society in the information age. The idea of "timeless time" and "space of flows" just

corresponds to the fluid metaphor proposed by Kakihara and Sorensen (2002a). Castells (1989) also declares the rise of network society and network organizations, triggered by the ICT in general and Internet technology in particular, in the information age. While Castells (1989, 2000) argues that ICT like Internet endows the old forms of networks with new meaning; we would also like to argue that fluid topology is also not new to our organization and society and the mobile technology enables it to cope with flexible decentralization and focused decision-making at the same time, thus give rise to the fluid interaction in the organizations and society, lead to the rise to the fluid organization, which is manifested very well in the case study in this paper.

While technology such as telephone and Internet can enable virtual interaction and build up networks of nodes to transcend the limitation of boundary, the convergence of mobile information and communication technology further enables fluid coordination of work across space and time with an emphasis on 'being local' to provide highly personalized, localized, context aware service to local citizens, thus bridging the virtual and the physical. We therefore share the views of Abowd et al (1997) when they maintain that effective use of mobile technology can, if well implemented, give rise to an interaction paradigm shift. Thus based on the discussion in this paper and drawing on the three metaphors of social topology, we would like to propose a shift from Internet based e-government to m-government with a resulting growth in the fluidity of mobile interactions to summarize the discussion (See Table 1).

Social Topology	Region	Network	Fluid
Characteristics	Boundary	Relation	Variation & transformation
Typical ICT Application	Pre-ICT (and Mainframe)	Telephone, Internet, e-mail, end user computing	Mobile phone, PDA, Other convergence technology, Mobile computing or Ubiquitous computing
Interaction	Physical and co-located	Virtual Redefined time and space	Virtual+ Physical; Further redefined time, space, and context
Service Delivery	Bureaucratic, office based	Standard "transactions", informational	Action oriented, coordinated, real time
Government Model	Hierarchy	Internet Based E-Government	Mobile Government

Table 1: Social topology, ICT and Government Service Delivery Model

7.0 Conclusion

In this paper, the case of mobile government in Beijing is analyzed and the concept of distinct fluid organization is proposed to underline the mobile government and its implication. A model of "Social topology, ICT and Government Service Delivery Model" is proposed to summarize the findings of this paper.

The mobile government initiative in Beijing is still in its initial stages, and we find the outcome of this initiative has been mainly positive till date. The municipal government in Beijing is now working in full strength to reinvent the municipal administration by use of ICT. The initiative has already covered most of

the 8 urban districts with a total area of 304 km^2. A municipal informational city management platform at BMAC, together with informational city management platforms in 8 urban districts are setup and in operation. The Informational City Management System provides necessary infrastructure to enable a fluid cooperation and interaction among the government departments, public facilities and services providers and citizens. By explore the potentials of ICT, Beijing aims to realize a fluid government and to provide better public service to its citizen. We will keep an eye on the still un-going, lasting progress of the reinvention of government through ICT in Beijing.

Undoubtedly, local government should pay attention to the new technologies and their impact on organizations, and face up to the challenges and opportunities it offers. We should also be aware that the essential benefits come from an alignment of organizational change and process re-engineering with these mobile technologies. In being mobile, we should think beyond the potential of the mobile technology alone, rather we should think more about the meaning of mobile government as a reshaping of government itself and what the distinct fluid organization means to government.

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