Design concept for network community based e-Government

Takashi Kobayashi

Yamato City Government

Keio University

1-1-1 Shimotsuruma, Yamato, Kanagawa 242-8601, Japan

yamatotk@sfc.keio.ac.jp

Abstract

The Internet has made it easy for an individual to express to public space. The network community generated by expressing individuals is a system of action and consciousness for the self-government looking for autonomy and identity when the person has a sense of belonging in the human relations with the background of a mutually shareable sense of human values. This research aims at showing the new design concept for a network community based e-Government by a literature search on a community and publicness and based on the social experiments of Yamato city, Kanagawa, Japan, which has a basic policy for accepting and creating network communities.

Keywords

network community, e-Government, citizen's participation, the Internet, ubiquitous

1. Background and Objectives of Research

In the information society, innumerable communities sharing and acting upon a number of specific values that exist in individuals, i.e. network communities, are emerging. NPO is considered as one form of a network community as it shares specific values and the number of certified corporate NPOs is 11,474(1).

Present local governments are functionally designed so as primarily to manufacture and supply goods and services and secondly to a) control citizens, etc. as sub-entities, b) allow participations for controlling local governments by sub-entities, and c) negotiate for reflecting policies, subsidies, etc. (Makita 2001). The e-Government policy employed by the Strategic Headquarters for the Promotion of an Advanced Information and Telecommunications Network Society (IT Strategic Headquarters) mostly follows this concept, which prioritizes the introduction of IT to public services by Basic Resident Register, Local Government Wide Area Network (LG-WAN), etc. Given the national policy execution, local governments are also focusing on making public services and administrative affairs more efficient by promoting the development of intranet and electronic approval systems. For this reason, local governments did not begin computerizing the participation and negotiation functions of policy making processes and policy selection, conveying the image of lacking procedural fairness to their citizens. In the case of public criticism toward Basic Resident Register, for instance, the information policy has widely invited mistrust from citizens, resulting in empathy for anti-IT realization.

When the Internet originally started to become popular, Furuse et al. pointed out that a dialogue with persons in charge at local governments was made possible and such dialogue might have some influence, even though the dialogue exchange was indirect (Furuse 1996). Some local governments are attempting to have dialogues with citizens through electronic conferences, but this number remains low.

The current design of local governments, that prioritizes public services over participation and negotiation functions, does not take into account private voluntary activities of individuals and network communities. While communities diversify in form and the concept of publicness changes, citizens are losing the sense of autonomy. Local autonomy in the information society is expected to accept changes in publicness and actualize the operation of a network community based e-Government.

Given this factor, this research aims at showing the new design concept for a network community based e-Government by clarifying the discussion on the community and publicness and taking into account the social experiments conducted by Yamato city, Kanagawa, Japan which made efforts with basic policies of creating and accepting network communities.

2. Research Methodologies

This research first clarifies network communities, generated by the popularization of the Internet, and conventional communities. Furthermore, changes in publicness due to disclosure and sharing of private information via the Internet and responses to those changes will be addressed based on

several pieces of literature. By doing so, the challenges in designing e-Government will be clarified.

Next, e-Government will be designed based upon the history and results of the e-Government policies of Yamato city, Kanagawa (population of 217,000) which made efforts in creating and accepting network communities with its policy pillar to computerize the participation function. In 1995, in the process of formulating the master plan for city planning, Yamato city disclosed information and realized citizens' participation through the Internet and later adopted two electronic conference systems. Institutionally, Yamato city is working on establishing so-called bylaws for public-private collaboration and the basic bylaw for autonomy.

Lastly, by analyzing the results of the survey on the status of the establishment and operation of electronic conferences by local governments throughout Japan (2), the status of acceptance of network communities in the e-Government policy will be made clear. Taking into account the status of the IC card usage in Yamato city, problems anticipated in the ubiquitous environment to be realized by IC chips and the design of an e-Government based network community will be discussed.

3. Diversification of Communities

Hamashima defines a community as a system of action and consciousness for autonomy and identity in which the individuals have a sense of belonging based on climatic uniqueness. George Anthony Hillary,Jr points out that regionality and cooperativity were found to be the least common denominators for a community (Hamashima 2003). This definition assumes communication in real space and in the beginning of the twentieth century the image of cities was designed in order to optimize real-space communication as described in Ebenezer Howard's theory of the garden city and Clarence A. Perry's theory of the neighborhood residential unit. In this research a community presupposing regionality, cooperativity, and real-space communication will be treated as a regional community in a narrow sense.

Organizational communities advanced rapidly in the industrialized society of the mid-and-late twentieth century. Organizational communities are defined by R. M. MacIver (Robert Morrison MacIver) as associations. Associations, as defined by MacIver, are positioned as regional community institutions such as schools, profit organizations, government offices, etc. However, associations became more than regional communities; they became more pluralistic and larger and played the role of enhancing social development during the latter half of the twentieth century (Hamashima 2003). During the later period of the industrialized and urbanized society, individuals did not have a strong sense of belonging to regional communities. Instead of achieving productivity and efficiency, the goal of institutionalized organizations became goals and

values of individuals, and sharing this feeling gave a sense of belonging to the members. In other words, associations themselves became communities. When compared with the definition above, organizational communities can be defined as a system of action and consciousness for individuals to seek for their productivity and efficiency to achieve organizational goals, a place in which those individuals have a sense of belonging to the organizations themselves.

And in the latter half of the twentieth century the Internet became popular and in the era of information society, network communities are emerging as voluntarism oriented communities. Small-sized models include activities of groups sharing information on fighting diseases such as patients groups and NPOs having both themes and regionality, while bigger-sized ones include the LINUX activities trying to improve programs by many participants through disclosing programming information on the Internet.

When defining a network as human relations with the background of a sense of values that individuals can mutually share, network communities can be described as a system of action and consciousness for the self government pursuing autonomy and identity while generating a sense of belonging in the human relations with the background of a sense of values that individuals can mutually share.

The form of communities to which networks, regions, organizations, and individuals belonged diversified from the industrialized to the information society. In the industrialized society individuals' sense of belonging for a community was either to regions or organizations or both. However, in the information society a sense of belonging to these communities is uncertain and furthermore in the case of network communities individuals can belong to multiple communities depending upon their identity.

In regional communities or organizational communities deriving from those communities, gatherings and meetings are held and only the matters considered appropriate to those assemblies and worth seeing and listening to are allowed to become public while ones inappropriate are treated as private (Arendt 1958). In regions and organizational communities, time is required to allow individuals to become public and communications in those communities are indirect for many individuals.

Changes in communications brought about by the Internet unleashed to individuals transmission of information to the masses, an act which was only previously allowed by authorities such as the press and the government, etc. Murai indicates that the Internet took off from a concept of voluntarism that individuals, at their own risks, promote disclosure and sharing of information and try to utilize knowledge as social resources. Furthermore, he points out that the reach of the Internet communication will be expanded to the extent that publishing and broadcasting could not attain (Murai 1995). This enabled individuals to express multiple

internal identities, connect with others with homogeneity in terms of their own sense of values beyond regions and organizations, and form human relations by directly accessing inside of the minds of others.

Therefore, in such network communities either "###" oriented Japanese or "###" oriented citizen of Yamato city, for example environment or welfare oriented, becomes more essential than a mere Japanese or a citizen of Yamato city as the element of individuals' identity and communication takes place based upon extreme directness (Osawa 1999).

While the conventional regional and organizational communities were maintained and existed on the basis of public and indirect communication, the network communities exist based on private and direct communication.

4 Changes in Publicness

Hannah Arendt points out two phenomena about publicness. It appears in the public and is disclosed to every possible extent for all to see and hear. And that world has diversity in a realistic fashion and at the same time has interests in the matters happening there (Arendt 1958).

Looking at these two phenomena from the form of communities, in the regional and organizational communities an individual is required to appear as an authority or a representative in order to behave as a public person and many other individuals are positioned as private beings. On the other hand, in network communities individuals can easily appear in public and belong to multiple communities while remaining privately diversified.

In a society based on the regional and organizational communities, since it was possible to make individuals belong to one of either of these communities, their publicness could be judged by identifying them as members of the regional or organizational communities. However once network communities came into existence, individuals could belong to multiple communities based upon multiple senses of values. There exist multiple topologies, making it difficult to judge publicness. Then, individuals can no longer be identified with any recognized public space.

Arendt explains that when such identification with the recognized world becomes difficult, the disintegration of the world cannot be avoided and then the perpetuity to transform a place where people assemble and connect each other will be lost (Arendt 1958). The world that Arendt defines can be interpreted as public space and self governing body. Osawa also points out that even though there may be a simple idea of establishing grass-roots direct democracy by means of electronic media, if such an idea is realized, communities will be dispersed spatially and democracy itself will become meaningless (Osawa 1999).

For this issue Saito points out that individuals choose self governance rather than seek the nation for security. Self

governance have two dimensions: one is neo liberalism which is to acquire lives and life security through one's own active activities; and the other is communalism which is to regard self governance as autonomy and to make commitments to communities including network communities in search for more personal and voluntary associations with "a human face." The integration of these conflicting ideas is the strategy for governance (Saito 2000).

Additionally while the view towards publicness is changing, Goto illustrates basic resource distribution models and rules from the economic aspect for the resource distribution system that respects pluralism of personal values and diversity of quality and ability. Goto also points out that while guaranteeing freedom of choice based upon individual pluralism and freedom of participation in the social selection process of the distribution rules in the fair distribution system, those rules should be designed on the basis of individuals' objectives and various circumstances as an informational foundation (Goto 2002).

On the other hand, from the standpoint of adjusting plans, Baba illustrates that, considering the evaluation of the cases of citizen's participation for the NIMBY facility location, not only trust from citizens cannot be obtained but also distrust may result unless distributive and procedural fairness is assured in the course of executing the plan (Baba 2002). Koizumi points out that the public concept itself in the current city planning system is restrictive to certain groups and that a system in which the meaning of city planning decision-making is identical and its process is uniform does not reflect pluralism of individual values. Koizumi also points out that it is necessary to develop a mechanism which flexibly makes decisions and makes them official depending on the contents of challenges and the degree of sharing values and to accept and encourage experimental use of the mechanism (Koizumi 2002).

When local governments accept as public private voluntary activities by either individuals or network communities, the innumerable number of private activities will emerge, allowing both individualism and communalism to exist simultaneously. Yet leaving such a circumstance will cause a loss of identities as public space and indicates the possibility of losing democracy and autonomy. Governance accepting private voluntary activities entails the following conditions: 1) freedom of choice based upon pluralism, 2) participation in the procedures of deciding distribution rules, and 3) guarantee for flexibly adjusting policies based upon individual circumstances and values.

5 Current Self Government Design

As set in Article 93, etc. of the Constitution of Japan, self governments in Japan adopt dual representative system with a local council and a mayor elected by popular election system. An individual can participate in politics by voting for

representatives, but he/she is not allowed to communicate directly on political debates on bylaws, budgeting, and execution and coordination of budgets in the administration.

Commensurability in this study is defined as capability of sharing values that can be measured with a common standard. Under dual representative system, commensurability is examined by representatives, whose decision is treated as an agreement to confirm publicness. If dissatisfied with decisions, residents can take direct petitions, but it assumes a set number of signatures of registrants on checklists.

The process to resolve issues in a regional society will be as follows. A regional community reports an issue to a lawmaker who represents the community. The lawmaker accommodates to solve it either by submitting them to the city council or by coordinating with the mayor who holds executive power. If commensurability is confirmed, the mayor makes a decision to implement remedies for them, then workers who belong to an organizational community recognizes the legitimacy from that decision and implement budgeting or clerical works. Figure 1 shows the information flow with arrows, from occurrence of an issue within a regional community to its solution by a government, through confirmation of commensurability.
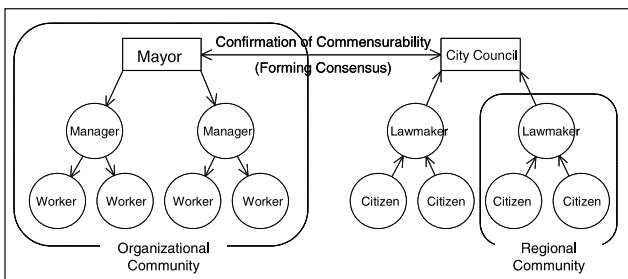

Figure 1. Current local government design

In this design, a local government takes an exclusive role on publicness for commensurable values, and produces and provides commensurable goods and service. This is one of the reasons traditional e-Government theories emphasize on efficiency of administrative works and services. Regarding relevance with media, values of regional community members are relatively homogenized, because both citizens and representatives use mass media as a reference group before dissemination of the Internet. The current government design is built upon commensurability via indirect communication.

6: Impact of Internet on Self Government Design

1) Communication between citizens and government workers

Yamato City Government started to use the Internet in November, 1995, to disclose the process of developing the master plan of the city and to encourage citizen participation. A Japanese newspaper Nihon Keizai Shimbun reported on this

challenge, "in many cases large-scale plans are carried out without citizen participation. We hope the Yamato City's challenge will make a major step toward `open self government'." While in real space the citizen participation ratio to the number of households was about 0.5%, on the Internet the number of viewers was estimated to be approximately 2,000 to 5,000 (2.3 - 6.5%), indicating potentiality of expanding the range of citizen participation (Kobayashi 1998). Information disclosure and citizen participation via the Internet is generally supported by both citizens and media, and the direct communication between citizens and local governments is viewed positively.

Yamato City's Workshop for Internet Use launched in 1996 was established as a research project with 21 workers selected openly, advocating that the Internet be used proactively as a communication tool in all administrative areas. The objective of the research was to study and diffuse methods of applying instancy and interactivity of the Internet to public policies as well as to develop human resources. However, as the study progressed, some people saw these activities inappropriate and backlash worsened. The minutes say "some departments don't accept the use of computers", "it is inappropriate replying to citizens using worker's mail address", "I feel uncomfortable spending all my time receiving complaints", indicating that inefficient citizen participation and personal remarks of government workers seem problematic (Yamato City's Workshop for Internet Use 1997).

If the functions of an organizational community to produce and provide goods and services and to govern are emphasized, inefficiency of services and administrative works via the Internet can disturb the basic functions of the administration. This is the reason why some local governments have set restrictions for their workers to access the Internet. They also sometimes limit disclosure via the Internet and contact for citizens to a single point in order to prevent problems related to workers' responsibility for their personal remarks, and to keep consistency in the view and judgment as a local government.

Yamato City's Workshop for Internet Use solidified a policy in a meeting in Nov. 1996, to develop a strategic plan to use internet not simply as a tool to deal with complaints but as a media for citizen participation, and to use the media interactively, seeking development of network environment and an organizational position within the local government while disclosing its minutes and contents of mailing lists to the public. The Workshop completed the strategic plan for Internet Use in Yamato City Government and submitted it to the mayor in May 1997, as it disclosed the process of its planning (Yamato City Workshop for Internet Use 1997). The plan had three strategies, (1) information disclosure, (2) citizen participation, and (3) development of operational system

This submission affected other local governments. On November 8, 1997, a Japanese newspaper Asahi Shimbun reported voices of workers; "I receive too many e-mails to

write them back" and "so many abusive comments on workers and the city government come to me", indicating that the workers use their personal e-mail addresses to communicate with citizens, and that "more honest opinions seemed to be collected when individuals are serving as contact points". It also reported that local government officials from about 20 cities in Japan made visits to Yamato City in 3 months and pointed out that those officials were interested in the Internet system solely operated by the workers, its position within the organization, and methods of controlling e-mails and of authorizing contents. The media also reported that "a position in charge of policies on information disclosure" would be created in the following year.

In 1998 Yamato City Government started infrastructure development project for advanced application which is aided by the Ministry of International Trade and Industry and installed ports for accessing the Internet to all desks of workers in the offices and approximately 500 terminals including those for citizens in order to connect all public facilities to the Internet. On April 27, 1999, a Japanese newspaper, Nihon Keizai Shimbun reported that it was the first case for a local government in Japan to connect all public facilities and all workers to the Internet, and, as city government's comment, that more direct responses from the workers to citizens' queries and quicker approval procedures are expected.

In 1998, a joint experiment on an electric conferencing system for citizens was conducted with Keio University to exercise collaboration between the city government and the citizens, as indicated in the Internet strategy plan. The purposes of the experiment was to test direct communication between citizens and government workers who were the members of the Internet Workshop which has grown to approximately 100 members, and to reflect the outcome of the communication to the comprehensive plan. The number of participants in the experiment was not as large as that of e-mails, but in e-mail communication, the ratio of opinions reflected in the administration stayed around 21%, while that of an electric conferencing system was higher, around 41% (Kobayashi 1999).

As these facts show, in an early stage of introducing the Internet into the current local government model, while the mass media serving as a reference group, disclosure and citizen participation via the Internet are regarded as commensurable yet with some confusion. And direct communication between citizens and government workers emerges via the Internet and starts to function as means to reflect opinions (Figure 2). In order to respond to such distributed communication style, Yamato City government has distributed the authority to disclose information via the Internet to each section chief, and set up various rules such as the Internet usage standards.
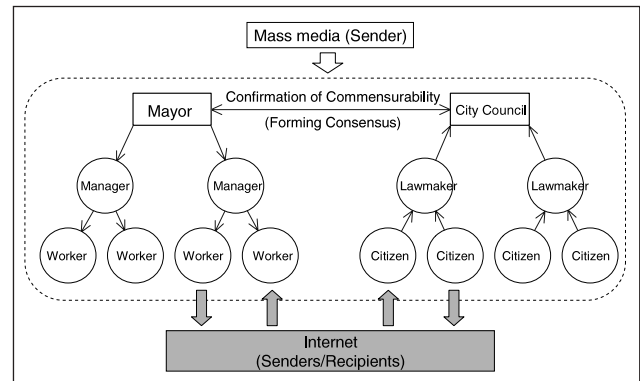

Figure 2. Emergence of Direct Communication via the Internet

2) Formation of Network Community

In January 2000, Yamato City Government launched an electronic conference system called "Dokodemo (ubiquitous) Community" to enhance capability to reflect citizens' opinions and participation. This is a multifunctional electronic conference system which enables the use of various digital files, and the posted remarks are immediately sent to registered citizens and administrative workers.

As the electronic conference system experiment in 1998 proved that direct communication between citizens and administrative workers increases access to administrative information on the Internet (Kobayashi 1999), all workers who use e-mails are registered and participate in Dokodemo Community. Currently 1,334 workers and 1,841 citizens are registered (as of May 2003).

Its user manual for the staff indicates that staff can provide information via e-mail or electronic conference room at their will as long as the information is official. For example, the manual states that without any approval, administrative workers can provide information to respond to requests for information such as "How can I get a certificate of residence?" or answer questions such as "where is a medical institution open on weekend nights?", but to questions such as "when are you going to build an electronic library?", if the information needed for an answer is not included in an official plan or reflected in administrative policy, they cannot respond. The manual also states that a process for developing policies, such as a master plan, may need coordination among or approval from senior managers and colleagues as necessary (Information Policy Division, Liaison Department, Yamato City 2000).

Because the government established a system for communication via the Internet, the communication between the local government and citizens became gradually activated. One year after the project commencement, on January 29 2001, a Japanese newspaper Yomiuri Shimbun reported that Dokodemo Community conference for citizens launched its operation. The paper also said that it activated communication between administration and citizens, that its future direction is

to shift the operator of Dokodemo Community from the local government to citizens, and that to the end challenges and issues would be discussed. A representative of an NPO, who was the chairman of the community, expressed his/her aspiration to reflect network discussions. This illustrates that the communication style is changing from administration to citizens to citizens to citizens.

In March, 2002, the citizen conference submitted a report on the discussion outcomes, as a policy proposal on the management plan for a computerized city which Yamato City Government had been working on. The report clearly indicated that citizens in Yamato City expected the city government to disclose information more and reflect citizens' opinions into its policies rather than streamline administrative workflows in order to realize "a computerized city for the citizens by the citizens." It also proposed to establish a citizen organization to operate Dokodemo Community and institutionalize it to an NPO (Citizen Conference for Yamato City Dokodemo Community 2002).

Based on the proposal, an organization called LOVES Doko-comi Support Center was launched in April 2002 and has been studying the operation of Dokodemo Community by citizens since then in addition to the support business of local e-currency LOVES that Yamato City Government operates. In April, 2003, this organization was certified as an NPO institution, the LOVES Support Center. It is entrusted by the city government with the operation to support the local e-currency.

Introduction of communication via internet to operation of the self government creates direct communication between local government and citizens as well as communication among citizens, forming a network community. Along with this move emerge activities to grope for publicness, e.g. requesting the government to reflect citizen opinions (Figure 3).
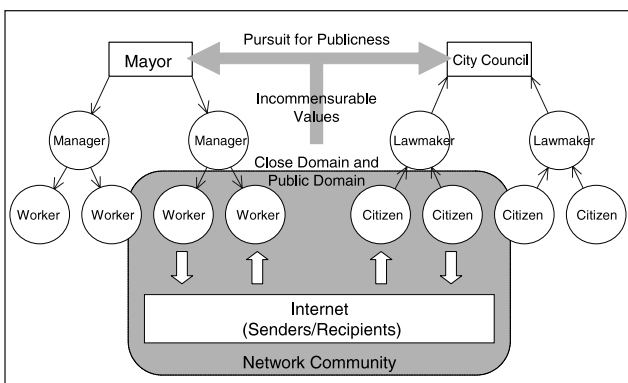

Figure 3. Emergence of Network Community and Pursuit of Publicness

3) Mutual Coordination within a Network Community

In Yamato City, citizen activities have been activated in the course of information disclosure and citizen participation. In response to various voluntary activities linked to specific values, the government has been working to establish rules for collaboration with citizens since April, 2001(4).

In June, 2002, a city bylaw promoting civil activities was enacted to create a new publicness. Its introductory clause declares that this bylaw assumes changes in publicness and presence of various incommensurable values, and clearly states that various values exist in a local society, that private problems can spread among the public, that an administration is not the sole actor to take responsibilities for the public, that there should be various alternatives for an "individual", and that citizens possess social resources.

In the main clause, it is clearly stated that new public activities shall be conducted as a role of citizens with voluntarism, that citizen organizations should recognize their social responsibility, conduct open operation and make utmost efforts to promote citizen participation and enhance their understanding. On the other hand, regarding role of the city government, it explicitly states that the government is responsible for preparing an environment to accept new publicness, that it should further strengthen information disclosure, that the city government encourages citizen participation from an early stage to ensure procedural fairness in decisions on plans and policies. In addition, it aims to develop a system to position the new publicness officially and shows two new forms of public works; civil works based on notification system and public-private collaboration projects based on a concluded agreement.

As the city bylaw was enacted, Yamato City Government indicated (1) freedom of choice that respects pluralism and (2) guarantee on citizen participation in procedures of deciding distribution rules as its basic operational policies. Also it established a conference to promote the collaboration project in April 2003 as a distributor of diverse values and a coordinator of the relevant rules, and concluded a basic agreement to operate the conference.

It has started to solicit proposals on the collaboration projects since May, 2003, and 26 proposals were made by 22 proposers. The citizens are continuously making active proposal activities, such as an open presentation in June and a workshop for open examination in July.

Yamato City Government also has been working to create a basic bylaw for self government since April, 2002. Regarding this bylaw, Ushiyama mentions that each operational field need its bylaws such as rules for public-private collaboration, and that a policy and philosophy for city development need to be established as a basis to exercise the rights of the government to enact such bylaws (Ushiyama 2002). On the other hand, Mayor Tsuchiya states that setting a target value or policy at which a local government aim in an equal and corporative relationship between the central and local government, allowing citizens to participate in the administration and lead the administration with participatory democracy, and allowing

citizen participation to compliment and change the indirect democracy under dual representative system are the images of the sought after basic bylaws. (Tsuchiya 2002).

Both of them point out two needs. One is identification of the self government recognized by citizens as also pointed out by Arendt, while enhancing the negotiation and participation functions of a self government. The other is policies and philosophies to enable identification of the self government, while letting commensurables and incommensurables co-exist and taking into account the necessity to prevent spatially dispersed communities and meaningless democracy as pointed out by Osawa.

These conditions are shown in Figure 4. Network communities are emerging, while scope of authority to enact bylaws is expanding. Recently, more and more local governments enact city development bylaws such as basic bylaws for self government and bylaws for collaboration participation, in order to secure fair processes(5). If network communities are accepted, there are some examples in terms of methods to financially coordinate distribution of the commensurables and the incommensurables, such as Neighborhood Matching Fund, Seattle, Washington, U.S.A., and Setagaya City Development Fund operated by City Development Center owned by Setagaya Ward, Tokyo, Japan.
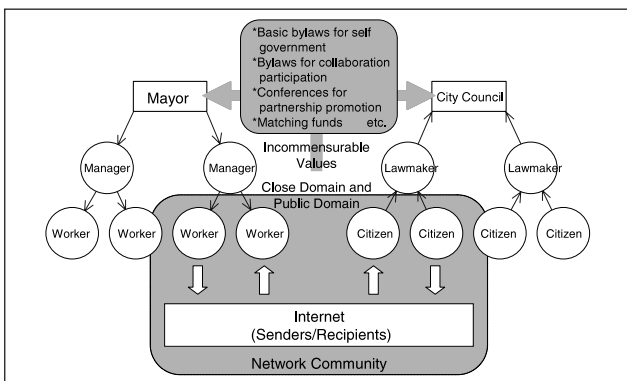

Figure 4. Coordination of Commensurability and Incommensurability

7. The Status of Acceptance of Network Communities

The results of the survey conducted by Kobayashi et al. over three years from 1997 to 1999 to confirm the status of the information provision of the city master plan on the Internet made clear that while the information provision from the government is increasing year after year, the percentage of the local governments which provide information during the policy development, that of the local governments which provide detailed information, and that of use of interactive communication are decreasing year after year. Furthermore, the survey on the awareness of government staff assigned identifies a trend in which despite that those assigned feel that

awareness of the citizens about the information on the plan via the Internet is low, they highly evaluate the comprehension of the citizen about the information on the plan and the impression of the reflection of the opinions. (Kobayashi 2000)

Government workers show willingness to communicate directly with the citizens but hesitant to disclose information. Therefore procedural fairness is not ensured. Yet, the workers claim infallibility e.g. highly evaluating the results of the citizen's participation. Disclosure of the information uncovered the incommensurable values, resulting from the fears about lowering the possibility of forming consensus.

The nationwide survey on the status of the availability of the electric conferences for citizen confirmed 733 electronic conferences. Subtracting from this figure the sum of 47 prefectures and 3,190 municipalities in the same year nationwide leads to that 22.6 % of municipalities have some kinds of electronic conferences. The follow up survey on the status of the use of the electric conferences in 163 local governments including prefectures, cities and Tokyo special wards among these 733 cases confirmed that 96 local governments run electronic conferences. Dividing this figure by the total number of prefectures and municipalities leads to that 12.1% is the utilization ratio of the electronic conferences (2).
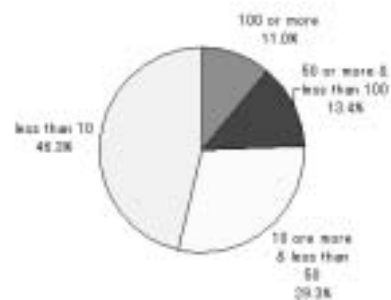

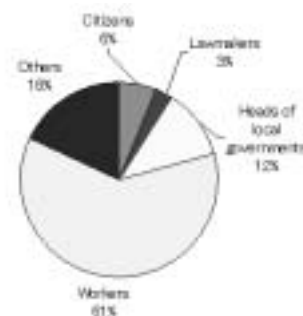Figure 5 Status of the number of remarks per month

Figure 6 Original Proposers of the Electronic Conferences

When the number of remarks per month was asked to the 96 local governments, more than half of those local governments said it is less than 50 remarks per month (Figure 5), suggesting

that communication in the electronic conferences is not active except for some. Also, to the question of whether any conference which allows participation in a process of policy development such as development of a plan or enactment of an bylaw, no more than 22.1% of local governments answered yes. And to the question of who proposed to create the electronic conferences, 60.9% answered that it was the workers who proposed to create electronic conferences. (Figure 6)

Workers create electronic conferences out of desire for direct communication with citizen on the Internet. However, those electronic conferences are not used to ensure the procedural fairness such as policy development and as a result, the discussion in those conferences end up inactive. Most of the local governments in our country are at a stage of attempting direct communication on the Internet without changing the design of the existing design of the local governments. (Figure 2)

8. Ubiquitous Environment considered e-Government Design

Status of the operation of the e Governments nationwide made clear how the Internet is used in the current design of the local government and the use of the Internet by the local government is in the expanding trend. Local governments which accept network communities and engage themselves in enacting a bylaw, forming an organization, and even preparing a fund to ensure the participation in the selectable allocations and procedures for determining allocation rules are already existent. Each local government must respond to the emerging network communities on the Internet.

And the last remaining issue, the creation of system to flexibly coordinate the policies based on the personal circumstances and values, is far from reality. Even though there are attempts such as collaboration promotion conferences of Yamato-city and town creating fund of Setagaya-ward, they are not sufficient as a system to coordinate the commensurability and incommensurability of overall local governments.

Among the systems to coordinate the diversified values in the local governments is a master plan. The master plan is a system which was developed in the US where the local governments are active in the 1950's. T.J.Kent,jr named four purposes of the master plan: determination of policies, execution of policies, communication, and advice and said that the master plan itself would function as an occasion for a discussion on the policies pertaining to the citizens, corporations, governments, and congress in the communication with citizens. (T.J.Kent,jr 1964

Originally the master plan evolved while functioning as a system to maintain and coordinate the diversities in the local governments. However in the information society, the infinite number of diversified values dynamically came to the surface as represented in the network community, making it difficult for the plan to function to the full extent. The system of the master plan stipulated in Article 2 of the Local Autonomy Law or in Article 18 of the City Planning Law must be amended as an information system to understand the individual circumstances and values which became visible under the ubiquitous environment and to flexibly coordinate the commensurability and incommensurability.

The speed of constructing the ubiquitous environment is fast and in August, 2003, issuance of the Basic Resident Register cards using IC cards will be ready. These cards will not only be equipped with a function to use the Basic Resident Register network but also serve as multipurpose IC cards; for example, the public individual identification service to be built inside those cars can tie up with the various private services.

Yamato-city has begun the use of IC card since April, 2002 and issued 87,433 cards as of the end of March, 2003 and currently 23 services are provided. The number of annual utilizations from April, 2002 though March, 2003 is 57,670. Specifically, among IC card users, 66.0 % is female and 34.0% is male. Among the electronic conference users, 63.0% is male and 33.0% is female. Looking at the users by age brackets, those at 60 or older accounts for 41.9%, those at 50 or older 68.9%, and those at 40 or older 85.9%. IC card users are mainly female and middle-aged and senior adults, reflecting the profile of the participants in the real space.

Ubiquitous computing put forward by Mark Weiser is entering a realization stage, thanks to the realization of IPv6, IC chips, and improved wireless technology. In 1999, at Massachusetts Institute of Technology in the US, auto ID center which assign ID to wireless IC chips was opened and in 2003, in Japan a ubiquitous ID center which aims at establishing the fundamental technology to automatically recognize "objects" was opened. These self controllable IC chips are implying the possibility for orchestrated person-to-person, person-to-object, and object-to-object communication by interworking with the Internet without people thinking about computers. I expect the use of the IC cards of Yamato-city which currently is limited to public services to make a rapid expansion by interworking with the ubiquitous environment.

As the IC card users of Yamato-city reflect the profile of the real space, under the ubiquitous environment, unintended participation of individuals in the network communities and direct communication might be promoted. Uncovering the various circumstances and values of individuals participating in the network communities, I think, is at the same time uncovering the incommensurability. Digitalization of the master plan contains numerous issues such as how to process the enormous quantity of data gathering there and how to protect personal information transmitted and received unconsciously catching the move of individuals. However, suppose that the construction of the ubiquitous environment is the direction headed for, e-Governments based on the network
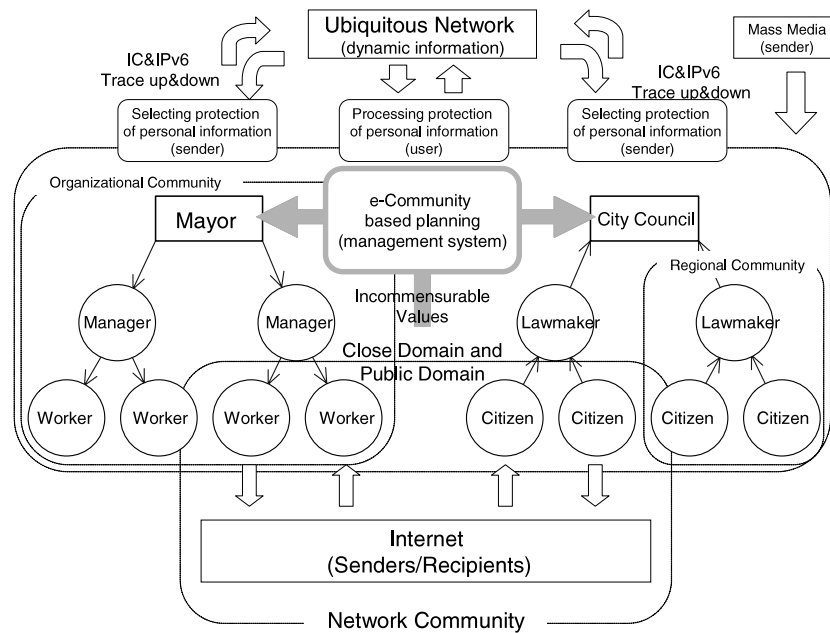
Figure 7 Design of e-Government for the Ubiquitous Environment(7)

communities require an e community based planning system as an electronic planning coordination system to dynamically catch and reflect the individual circumstances and values. (Figure 7)

9 Conclusion

The current design concept of local governments rests on the pursuit of commensurability with indirect communication. Establishing the Internet-utilized and ubiquitous environments, however, has made it easy to express an individual in the public space and allows him/her to have direct communication with others. Under these circumstances, there is a possibility that people choose self governance by an individual or network communities and no longer recognize the existence of local governments.

It means local governments will be deprived of their identity as public space, indicating a possible loss of democracy and autonomy. In order to prevent this situation, local governments need to accept direct communication between an individual and network communities as well as to secure 1) freedom of choice based on pluralism, 2) participation in procedures for determining distribution rules, 3) flexible adjustment of policies based on the individuals' circumstances and values.

For achieving the above, local governments are required to do the followings: building frameworks, enabling citizens and local government workers to directly communicate each other for achieving 1), improving legislation including bylaws to ensure the fair distribution and procedures, making distribution available even to incommensurable values by the use of distribution rules and funds, and showing the philosophy that makes it possible for local governments to have identification

by enacting the basic bylaw for autonomy and other laws for achieving 1) and 2), computerizing a master plan for establishing ubiquitous environment for achieving 3).

By doing the above, the current design concept of local governments will shift to the one for the network community based e-Government. The process of the shift is shown in Figure 1, 2, 3, and 4 sequentially. The figure 7 shows the design concept of e-Government based on the ubiquitous environment. Japan's e-Government policies need to focus on further computerization of the participation and negotiation functions, which used to be regarded as the secondary functions, rather than service production and supply as well as control function.

Notes
(1) Cabinet Office, `Authorization Situation in Prefectures', Quality-of-Life Policy Bureau Web page as of 31 May 2003.
(2) A research on establishing electronic conferences was conducted as a part of `Joint Research on Formulation of Guidelines for Citizen's Electronic Participation and Cooperation Serving for Local Governments and Their Citizens' done by SFC Research Center of Keio University and NTT Data Corporation. The research method was confirming the situation by referring to web pages of local governments nationwide in November and December, 2002 (http://www.nttdata.co.jp/rd/riss/e-demo/report02.html). The politics and economic department of Tokai University also conducted a survey on operation status of electronic conferences from 31 May to 21 June, 2003. They referred to web pages and conducted interviews with 163 cities and wards including special wards in Tokyo among 733 local governments which were confirmed to have established electronic

conferences in the above research.   129 cities and wards responded to the survey, with valid response rate of 79.6%.

(3) Yamato city has formulated following rules. 1) outlines for computer network system administration and operation, 2) outlines for assigning network leaders, 3) outlines for personal computer administration and operation, 4) Internet usage standards, 5) standards for properly providing administration information to citizens, 6) standards for sharing electronic information within the administration, 7) outlines for establishing a committee to promote computerization, 8) standards for promoting researches on the use of electronic media.   4) and 5) indicate that information provision to the Internet shall be made in a dispersive manner by the authority of each section chief and at the discretion of employee.

(4) Civic Action Section in Civil Economy Department of Yamato City took charge of establishing rules for collaboration with the citizens in Yamato City. All of the history and the materials used are available on the Internet (http://www.city.yamato.kanagawa.jp/katudo/katudo-top.html). In the process of rulemaking, communication methods including Dokodemo community and mailing lists were actually used.

(5) According to the survey on 677 cities and special wards in Tokyo conducted by Nikkei Research Institute of Industry and Markets in 2003, as many as 49 cities and wards already have enacted or are to enact city development bylaws. The number of enactment of bylaws has showed a sharp increase since the enforcement of a law to collectively amend laws pertaining to decentralization of government power from central to local.

(6) The fund in the city of Seattle was established in 1989. The initial amount was 1.5 million dollars and currently approximately 3.7 million dollars is provided to citizen groups of city development. There are 4 types of funding, ranging from 100,000 dollars to 10 million dollars (http://www.cityofseattle.net/neighborhoods/nmf/   . Fund of Setagaya ward has set up a foundation called The Urban Development Corporation of Setagaya Ward, Tokyo , with the initial contribution of 30 million yen which now has increased to 135 million yen. subsidies are divided into several types and the decision is made in an open review (http://www.setagaya-udc.or.jp/machisen/).

(7) Design concept of e-Government in ubiquitous environment consists of 3 communities; regions, organizations, and networks. Qualitative and incommensurable information such as opinions from citizens are mainly handled by network communities and reflected in e-community based planning system. Regional communities handle commensurable information with and organizational communities deal with commensurable information in the same way they do in the current design concept of local government. However, the design concept of e-Government assumes that an individual participates in multiple communities. Quantitative and active information is collected in e-community based planning system through ubiquitous networks. Protection of personal information means person who uses collected information takes protective measures, and a sender of the information has the ability to selectively control the protection of personal information. Furthermore, traceability and retroactivity (functions to trace up and down) are ensured between users and senders of information in the communication with the ubiquitous network.

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