

Problems and Challenges in Creating a Cyber Society in Japan

H. Miyashita (NRI) & M. Aoi (Keio University)

1. INTRODUCTION

Japan now faces with the new “black ship” of the late 20th century, the Internet. First black ship transformed Japan for the Western world. Second black ship, the Internet, may have more power to transform Japanese society but to what? We see rapid adaptation of this technology in all over Japan. Many businessmen and politicians insist we need a social and economic policy to promote the Internet more in Japan. But there still exist major problems and challenges due to the nature of the architecture of our society and business. Simple matching between the Internet and our existent social and economic systems will not produce our fruitful future. For our next 10 years, we need restructuring of our social systems for effective interaction between the Internet and our society. How fast and to which direction can we change our society? It is Japan’s major problem. Some may argue if we really need to change ourselves to imitate American version. Others may argue that the “Japanese- style” Net society be different from U.S. one.

Here we present our ideas based on CCCI research on interaction between the Internet and Japanese society, business and government. Our conclusion is “a concept of cyber community solution”. With this concept, we assume Japan will be vitalized in next decade.

2. THE BIRTH OF CYBERIZED SOCIETY

The worldwide trend of information intensification (or computerization) can be traced back to the 1950s. With the onset of the 1990s, however, it began to exhibit dimensions that were significant departures from the preceding decades.

It was in the 1990s that we saw the start of full-fledged web architecture on the Internet and the appearance of computers that were truly for personal use in point of both software and hardware. Ever since, computers have evolved in the direction of increasing personalization, and networks, of increasing decentralization. We stand at

the dawn of the “cyber society” where individual members of society are linked together in computer networks.

In Japan, a university premised on use of the Internet (i.e., the Shonan-Fujisawa Campus of Keio University) was established in 1990, and the commercial-base Internet services were begun in 1994. Sensing the Internet’s potential importance before most other organizations in Japan, Keio University and Nomura Research Institute, Ltd. (NRI) responded and founded the Center for Cyber Communities Initiative (CCCI) in 1995 and set about the research on the “cyber society”

The “Internet boom” that has since erupted is coming to constitute an unprecedented experience for Japan’s industry and society. The Internet is a late-20th-century “black ship” for Japan, shaking their very foundations.

In Japan, the population of the Internet users (through personal computers only) is anticipated to reach about 20 million in mid 2000. It is estimated that roughly half of these users access from places of employment or education, and the other half, from their homes. In the short space of six or seven years after the start of commercial operation in 1994, the Internet use has widened to about one-sixth of the population.

Use of the Internet in Japan began with companies, government, and universities, and quickly spread to the homes (and from men to women). By the end of fiscal 2001, all of the roughly 40,000 public primary, middle, and high schools nationwide are to be connected to the Internet.

Corporations in Japan approached themselves to the Internet began early on, around 1995. In time, companies began to harbor high expectations of the Internet as a new channel to consumers as well as tools for inter-corporate transactions. The number of firms which were developing e-commerce (i.e., using the Internet as a means of placing or receiving orders and providing service) increased from just a few dozen in 1995 to over 25,000 as of March 2000 (according to data from the CCCI Cyber Business Case Bank).

Viewed in the larger context of the cyber revolution, however, the landscape of the Internet use in Japan in 2000 must be termed no more than the headwaters of what will later become a sweeping tide. Over the next ten or 20 years, numerous currents will

come together to form the great river of the cyber society. To put it another, the cyber revolution will permeate all segments of society and the market. If the preceding five or ten years could be characterized as the phase just before the dawn of the cyber age, the next ten years could be characterized as the onset of the cyber society, i.e., a society making diverse use of cyber space.

Thus far, we have been in the primitive stage of the Internet use centering on personal computers and a limited circle of applications and users. The coming years will bring a diversification in all aspects, including applications, users, and terminals, and the arrival of the cyber space age offering a wide range of options in life, business, government, and the social system. In other words, we are moving from the phase of linkage among computers to one of linkage among people and the presentation of all kinds of value on the web.

The coming ten years might also be regarded as the start of the fifth wave in the series of 100-years cycles of economic change posited by Mr. Kondratieff (the preceding four being the “ revolutions ” of modern industrialization, the locomotive, the automobile, and the advances in electronics). Some indications to this wave have already appeared. One is the worldwide change in price patterns. A second is the rapid spread of information technology that has changing cost structure drastically. At this juncture, the urgent tasks are to erect new models for companies, industries, and administrative systems as the principals of the fifth wave to carry us into the mid- 21st century, and to create new corresponding rules, values, philosophy, and life culture.

The Exhibit 1 (Vision of the spread of the cyber revolution in Japan) presents the long-term outlook for the cyber revolution in Japan as posited in connection with the CCCI statement. Social restructuring will follow the Internet’s penetration, and fusion with Japanese culture, business practices, logistics and language will be realized in the long run. Japanese society will adopt and diffuse the Internet in a speedy way and later restructure of Japanese society will occur. The interaction between the Internet and Japanese society will be the essential part of the cyber revolution in Japan.

3. INTERACTION between IT and JAPANESE SOCIETY

After a five years preliminary period, Japan as well is finally entering the phase of full-fledged development of the cyber society, i.e., society characterized by diverse application of cyber space. Signs of this have already appeared. Use of the Internet has widened from a few enthusiasts and office workers to all kinds of people, including housewives, children, the aged, and disabled, each employing it for their own particular purposes. At the same time, it is spreading from the business sector to the home and personal sectors. 30% of all generation use PCs at home and 5% of them have experience of E-commerce usage (very low figure?). And the Internet users at home is 17% of all generation and women share 42% among them.

In addition, the assortment of hardware is widening. The personal computers has been joined by mobile terminals, digital TV sets, and Internet terminals have been installed in convenience stores for use by all customers. 62% of individual use mobile telephone and 18% of teenagers do mobile telephone based e-mail.

With decreasing telecommunication cost, we expect increasing growth of usage of hardware mentioned above (% of telecom expenditure among total one for the family life is 4% in 1999 compared with 2.8% in 1994).

Furthermore, this diverse mix of terminals appears to be heading for eventual interconnection in wide-area“ ubiquitous networks. ” These trends, which are already proceeding at a fast pace, are expected to quicken with improvements in the communications environment and network security on settlement.

When we turn our eyes to the other variable of interaction, we conclude that we are still in the middle of transformation. You can see many evidences in the Exhibit 2 “Characteristics and Barriers for Internet penetration in Japanese Society”. These barriers come from our systems of society, business and public policy, not from technology itself. Japanese are quick to adopt new technology and products, but very risk averse to change systems. In a sense, Tokyo-oriented “mainframe” society with many “walls” did work very well in the past to catch up the U.S.A. But it will turn to be the big barrier to deep penetration of the Internet into Japanese society. Past “divide and conquer” strategy would not work any more. Destruction of many walls are expected in Japan and the Internet will be one of the effective tools for that purpose.

The Internet will remove walls that were the core of Japanese old system. And thus interaction between the Internet and Japanese society surely produces social conflict in a short term horizon(hopefully short) . Many “walls” which have divided Japanese society into two (city vs. rural, aged vs. young, big company vs. small one) will produce digital divide issues in Japan (digital divide issue may not be tough compared with other nations but strong tendency to fairness by Japanese may make troubles). Essentially our challenge may lie not only in penetration of the Internet but also in designing new architecture of our society. Many Japanese are anxious about being left behind the times, but at the same time they do not think “the age of information” brings more active interaction and communication. How long does it take to transform consciousness of Japanese people for Cyber Society? Should we be pessimistic? We do not need to be pessimistic. Why? We can propose the concept of “cyber community solution” and it will work in Japan.

4 CYBER COMMUNITY SOLUTION FOR BIG TRANSFORMATION

Cyber space impacts two major types of value and power to people and markets;

1. Value of organization-driven linkage: the value induced by linkage to individuals in the interest of centralization and efficiency, on the initiative of organizations (government /companies),
2. Value of individual-driven linkage: the value induced by linkage by and among individual (citizens/consumers) on their own initiatives.

In the case of the first type of value, cyber space is used as a powerful tool for making the market mechanism and administrative system more efficient. In the case of the second type, it is used for linkage by and among individuals with shared objectives or values on their initiatives. Opportunities for such linkage had been in the past limited due to the constraints of space and time.

CCCI defines these groups of individuals linked with each other as “cyber communities” and regards them as important entities capable of having an immense impact on the future shape of society and markets. It was devoted to the promotion of numerous practical experiments and research projects to confirm their significance.

The formation of cyber communities is expected to undergo a varied evolution based on changes in lifestyle and the market, as follows. Instead of being confined to a homogeneous, closed space of activity revolving around lifelong employed, people will use cyber space to take part in several groups of their own accord and in line with their outlook, values, and interests. At the same time, the one-way supply (or receipt) of public administrative services will be replaced by information sharing with and participation by interested citizens through cyber communities, which play highly beneficial role for both sides.

In addition, opportunities for individual choice on individual responsibility are expected to broaden in the areas of pensions and nursing care services. And for the market, cyber communities spell a shift away from a setup characterized by monopolization of information by companies, producer-oriented arrangements and one-way provision of information through mass media toward one of diverse, multi-layered communities of clients and consumers with shared preferences and interests. Once this happens, cyber marketplace models drawing the participation of these communities and companies as well will begin to demonstrate effectiveness. In Japan, we observe emergence of net business utilizing this concept.

Viewed from a different angle, the emergence of cyber communities could be taken as an indication of an increase in fields where there is an alignment of the vectors of value and power in the two categories described above and principals need each other in society and the market. In cyber communities, the individuals, the anonymous individuals of the industrial (mass-consumption) society will be joined by loose and diverse tie-ups held together by bonds of varying levels of strength. In a word, individuals will be empowered through network with other individuals. Power of networked individuals will dominate the power of closed organizations.

In the 50 years after the war, Japan achieved economic growth as a sophisticated producer of manufactured goods based on the so-called "Japanese-style" behavior pattern typified by groupism, conformance, and passivity. This pattern may make some sense for increasing efficiency when an economy is in the phase of rapid growth with certain objectives. However, this type of behavior pattern will lose all of its competitive worth and generally fall out of favor in tomorrow's society with many varieties. The times will inevitably call for a switch to linkage based on autonomous choice by free individuals instead of the pressures for uniformity

Meanwhile, observers are already pointing out the problem-solving limits of the dichotomy between the government / administrative authorities versus the market mechanism in the face of numerous problems and issues in society and the economy. At the same time, Japan is itself saddled with a mass of thorny problems in areas where uniform, standard approaches are not going to win widespread social acceptance. These include preservation of resources and the environment, falling birthrates and population aging, welfare services, education, and regional revitalization. Cyber community solutions represent an approach to problem solving in these areas. The idea is to solve problems through the spontaneous formation of cyber communities of individuals who share information and rules, and have a flexible perspective on roles and tasks (as opposed to a rigidly defined authority).

The following points, which are premised on individual initiative, may be cited as the key features of cyber community solutions;

- 1) Solution by citizens/consumers themselves without dependence on companies or authorities.
- 2) Solution through free linkage among individual principals.
- 3) Spontaneous and dynamic optimal matching among individuals unconstrained by space and time.

In the areas noted above, there is a close connection with “human services” such as medical treatment, care for the aged, learning, and counseling as well as individual values. Communication and mutual trust are key factors. These same factors are at the essence of cyber community solutions.

In markets, there is a new movement under way toward the cyber society. In this field as well, cyber community solutions have the potential to engender unprecedented business models and dynamism. Many consumers are becoming sellers as well as buyers and helping to build cyber marketplace grounded in information sharing and communication among customers. Some companies have already begun to achieve success with business model designed deliberately for cyber community.

This kind of emphasis on cyber community solutions in society as a whole,

accompanied by active encouragement of voluntary information sharing and measures of positive promotion, could spur considerable progress in resolving numerous problems. This would, at the same time, help to replace the passive society disposed to reliance on authorities, conformity, and solutions through expansion of the accent on original ideas and initiative will widen circles of spontaneous linkage, and an upsurge of new energy from interaction.

The unavoidable course of cyberization also entails the assumption of new risks by Japanese society. Some risks have already begun to surface, as exemplified by network-based crime, security issues, ethical problems, libel/slander, and hacking. Other risks with a deeper social dimension could surface more gradually in association with invasion of privacy and the “digital divide” (i.e., the widening of social disparities due to the differences of information access).

It must not be overlooked that national risks are also involved because of possible systems of control and effects on the existing social order ushered in by cyber space as well as influence on international relations. Besides striving to earn public acceptance of cyber community solutions, we also must realize that now is the time to undertake national discussion and consensus-buildings on ways of countering new risks in the decentralized network society revolving around the individual.

Japanese society now stands precisely at the point of transition between the old order with its array of chronic problems after the more than 50 years since its instatement, and the onset of cyber society. Coping with numerous problems will require a metabolic renewal of consciousness by communities and the people. Each every person must awaken to the needs of the times and remake his or her mindset for individual initiative and choice instead of conformity. Many problems will only be resolved if people, as both citizens and consumers, stop looking to government or companies for answers and join together in efforts of their own design and on their own initiative. Cyber community solutions could assist such collaboration among individuals and go a long way to furthering progress in problem solving in society and markets.

5. EMERGENCE OF “JAPANESE STYLE” NET INDUSTRY AND E-COMMERCE

In section 4, we discuss lots on our need of social transformation for Japan in order to be competitive in the 21st century. At the same time Japan has been evolving herself by adopting the Internet into her traditional network. This is typical Japanese way! We have very efficient traditional infrastructure such as convenience stores, railway stations, post office within 1 mile from our home. These are changing themselves into information and distribution centers for E-commerce. Seven Eleven Japan will provide a good example of Japanese E-commerce Exhibit 3). Seven Eleven was U.S. concept but Seven Eleven Japan has changed original concept in a revolutionary way. With the Internet, it is again changing itself for more convenient place.

Mobile telephone terminals turn to be smart terminals due to their access to the Internet (I-mode etc). Many Japanese now use mobile phone to transmit data rather than voice. Transition from voice to data is the major reason why we can see the rapid growth of mobile phones here in Japan. Then, rapid increase of mobile phone will give base to new mobile net industry. Game machines, which are one of strong area for Japanese companies, are now changing into multi-purpose home terminals and going to serve various needs (Sony Play Station 2 etc). Emerging digital TV net industry will play major roles to connect home and business as well as home and home.

Japan is going to make the best of traditional networks and mobile phones, game machines etc to create convenient life. In the near future, we will not be able to image the original types of game machines, mobile phones and convenience stores. These will have changed themselves evolutionarily and final state could be revolutionary one. This pattern we did in the area of automobile and household appliance. We expect these directions will contribute to increase quality of life for many Japanese and Japanese economy (Exhibit 4 Emergence of New Mobile Net Industry). This will be true of the Internet applications.

This evolutionary process has been one of our strong areas but without major social restructuring, can we see attractive Japan in the 21st century? Is it the time for comfortable improvement or radical change to stretch our frontier? Many Japanese will reply both! We are afraid that comfortable improvement Japan has been good at may hurt incentive for radical change in our social systems. The Internet provides

Japan with great opportunity to transform our society for connected individuals linkage-driven society, and we should not miss it!

6. CONCLUSION

We expect emergence of diversified cyber communities will transform Japan in a slow way. For a few years, we will observe “Japanese style” net industry’s growth. At the same time we will see many diversified cyber communities emerge in Japan. Internet will remove “walls”, physical and psychological, and it will help to produce many cyber communities. These cyber communities will promote more utilization of Internet. This interaction will continue. Finally we will have many cyber communities in Japan. We will have small and cohesive cyber communities such as regional community network project and communities in the field of education. Fishing club and Travel club may be the cyber communities built on shared interests . Environmental network and human rights networks are social communities. Auction and Reverse Auction are communities with strong market meanings. These cyber communities can be classified in terms of scope and strength of cohesion as Exhibit 5.

Then cyber community whose nature is the individual-driven linkage of people, will become one of the major governance systems in Japan where traditional organization-driven linkage of people has dominated. Which will be the major governance system among market mechanism, organization such as governments and cyber communities? In the short term, we will see strong drive for global standardization and monopolization. But in the long run, roles of governments and organizations will decrease and we will have new global governance through cyber communities.

We will see transition for new global governance system where different types of governance co-exist. The Internet will develop convenient Japanese society by merging with our traditional infrastructure and eventually will change our social systems. During that process, linkage between individuals will be developed more fully through the Internet and diversified linkages between individuals (cyber community) will constitute major part of social governance system. Japan now starts big social experiment. What will be the success probability of this social experiment?

Finally we express our thanks to the participants of T5 in Munich for their valuable comments and to Tokyo Club for giving us this opportunity.