

## Japanese "Ketai Culture" as an Urban Phenomenon

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Japan is known for the wide use of mobile phone. The significance is not just in its wide spread use, but rather in the fact it is a social phenomenon. Mobile phone has become an important part of culture changing the way people communicate to each other. Its application penetrates into all aspects of daily life with all possible services being available, virtually realizing what are considered the goals of wearable and ubiquitous computer society. Another important feature is that the "explosion" of mobile phones took place within a short time in late 1990, led by young generation, initially by young women in particular. Today Japanese "mobile phone culture" or "Ketai Bunka" is often considered a likely model for the coming "mobile society" in other parts of the world, especially by the industry as well as researchers in the field. It will be worth examining the mobile phone culture in Japan from social and cultural aspects in order to identify general and universal elements in the phenomenon and more culture or society related elements in it.

This essay is just a first part of the research meant for the goal described above.

### Mobile Phone as a Computer

As is well known, Japanese language is different from European languages in many ways. One important issue is that the Japanese mix four different character systems - two types of Japanese alphabets, Chinese characters (Kanji), and alphanumeric system. Each of Japanese alphabet systems consists of nearly fifty characters. Numbers of Kanji is just numerous, often with different characters assigned to single pronunciation. To write a Japanese text with a computer we usually type in Western alphabets and the software automatically turns them into Japanese, showing candidates for applicable Kanji. (It is also possible to use Hiragana, one of the Japanese alphabet systems for input.) Even one's own name has to be written in this manner. These days AI features of computers remember the most probable combination of Kanji for words often used (such as one's own names) and automatically translates into appropriate Kanji combinations. Writing a longer text is achieved in a similar manner. Therefore word processing software was the first serious application for personal computers in Japan. Writing with a computer could become a nightmare without an AI feature.

Because of such unique feature of Japanese language, a mobile phone had to have a word processing function in order to support text messaging or the use of address book. Different from the way people usually do with computers, Hiragana can be typed with the mobile phone keypads and turned into Kanji. An AI function also offers possible sentence to follow. With latest models composing a typical sentence may require only a few seconds. Also, number of strokes in Kanji required a higher resolution on the small screens. These are part of the reasons why the mobile phone in Japan became a computer with a high (relatively) resolution screen rather than just a digital telephone, and could be easily converted into a digital camera and a video.

An issue behind Japanese mobile phone culture is the love for gadgets and interests toward technology embedded in Japanese culture. This is one of my long term research themes and my papers on the theme can be found in other publications. The love for technology of the Japanese has a history that goes back to a few hundreds of years at least.

### From "Ketitai Denwa" to "Ketai"

The changes in the role and nature of mobile phone, from a business tool to an intimate part(ner) of one's daily life and a part of Japanese popular culture, can be observed by the evolution of its name. <sup>1</sup>

"Keitai denwa" (ke-i-ta-i de-n-wa, meaning portable phone), a seven-syllable word written with four kanji letters (Chinese characters), is how it was called when the service was launched. The term still officially represents mobile phone.<sup>2</sup> As the younger generation started using it, the word turned into "keitai" (ke-i-ta-i), a four-syllable word. Now it is called "ketai" (ke-tai), with two syllables, written in katakana (Japanese alphabets for foreign or pop things). It cannot be any shorter.

Today the extensive use of mobile phone among the younger generation is seen in many countries, including Finland and Korea among others. The phenomenon seems to be quickly spreading over many regions. Those who observe the current situation may ask what is special with the Japanese mobile phone culture, if the phenomenon is more global than Japanese. <sup>3</sup>

While the increasing global nature of young people's life style is behind the phenomenon, there still are social, cultural and historical elements that play an important role. These elements interact with features of mobile phone in the process of being a part of the society. From this point of view it is undeniable that certain features in Japanese culture helped boosting the mobile phone use. Also, the spectacular success of Japanese mobile phone business, especially of NTT's Docomo, has been widely known and become a model for mobile phone marketing, making the mobile phone culture more worldwide. Hence discussing Japanese mobile phone culture would be useful in understanding the nature of mobile phone as a medium and its relationship to the society. This paper tries to analyze the current status and its background of Japanese mobile phone culture, or, "ketai culture", both from historical and contemporary aspects. The focus will be on the relationship between mobile phone, urban life, and popular culture in Japan. While there have been researches carried on the use of mobile phone among the younger generation, not much has been written on Japanese mobile phone culture from the above mentioned aspects. <sup>4</sup>

## Launching of Mobile Phones

When mobile phone service was launched in Japan in 1987, it was meant to be a business tool in urban region. The service was expensive and the network coverage was limited to major cities, mostly downtowns. As the system, these mobile phones were owned by NTT, Japan's former national telephone & telegraph service, and rent to users. <sup>5</sup> Users pay deposit, monthly rental fee, basic fee and the connection fee in order to use mobile phones. The phones were heavy and bulky. In the beginning mobile phone contracts were most typically made by companies for the use by their VIPs, thus functioning in reality as a status symbol. Then wider range of employees such as sales people were given mobile phones, as the service became less expensive, phones being smaller and the coverage area gradually expanded. The timeline provided by Docomo (figure 1) is marked with the changes that took place during this time. <sup>6</sup>It became more easily accessible to private users when NTT changed its policy to allow purchase of phones in 1994.

When smaller and better looking phones appeared, young girls found them as substitutes for pagers, which were already quite popular among them.<sup>7</sup> By the end of 1996, shift from pagers to PHS, the inexpensive version of mobile phone, was clearly seen among the young generation after short messaging service (SMS) became available on PHS. (Figure 2) The acceptance of mobile phone among girls promoted its rapid evolution from a business tool to an enjoyable communication gadget. In Japan, popularity among young girls is considered a sign of great possibility on consumer market, as already known with consumer goods such as stationary or "fashionable" foods. Mobile phone operators and phone makers took the opportunity seriously to expand the market. Designing more "kawaii" (cute, lovely) or fashionable phones to meet their taste was important. Also, new features and services outside its original oral communication function were needed as major attractive elements. By 1998 number of mobile phones exceeded the number of household in Japan. By summer 2001, about half of the Japanese people possessed mobile phones and the rate was above 83% with senior high school students. Today, as of June 2004, approximately 70% of the whole population possesses mobile phones, creating a situation that "practically everyone has a mobile phone in Japan".<sup>8</sup>

The increasing social and cultural importance of mobile phone is supported by its massive use. Besides the role it plays in communication, mobile phone is becoming a major platform for entertainment, home security, welfare, shopping, among many other functions it already serves. The latest models of 3rd generation mobile phone are supposed to replace one's purse. Robotics, another major area in which technology and culture meet, goes along with mobile phone technologies. Home robots, which are to appear on the market by the end of 2004, will be remotely operated by the users' mobile phones.

Why such a rapid growth of mobile phone took place? Why people found it not only useful but also entertaining? Why it became practically an indispensable part of everyday life?

## Japan as an Urban Society

The end of long lasted monopoly of NTT in telecommunication business and the rise of new telecommunication companies certainly led to the creation of new services and ideas. However, competition does not necessarily lead to a rapid and rich growth of market. In order to understand the rise of "ketai culture" in Japan we need to analyze why younger generation, especially girls living in major urban areas, played the leading role in popularizing mobile phone and changing its social function. There were both practical and cultural reasons why young girls, mostly those living with their parents, became a first leading party of new mobile phone users. Urban life style of the Japanese is behind the scene. Once mobile phone is adopted as a useful and fun tool in urban life, it started developing further to meet the then unfulfilled demand of many Japanese who live in big cities and around.

Japan is an urban society both physically and culturally. While Japan is already one of the most densely populated countries simply in terms of the ratio of population to land, the actual density is much higher due to its mountainous landscape and social structure.<sup>9</sup> Official statistics shows that altogether nearly 80% of Japanese people live in big or smaller cities, not in towns or villages. Half of the whole population is concentrated in just three major urban areas: Tokyo, Osaka (Kyoto and Kobe included) and Nagoya.<sup>10</sup> More than a quarter of Japan's whole population is centralized in Tokyo and its vicinity alone.<sup>11</sup>

These facts explain several issues that are related to social and psychological aspects of urban society. First, most of commercial activities such as advertisement are focused on city residents because that is the market. It also means that mobile phone services had enough number of possible users in major cities alone without countrywide network coverage.<sup>12</sup> Second, urban life style becomes the standard in general, even for people living in rural areas. The image of "city life" is felt familiar through TV, film, and other channels, as well as with frequent visits to nearby cities. For young people living in rural areas, to stay up-to-date with the latest trends is very important.<sup>13</sup> The image of "city life" includes an immediate accessibility to what they want -- commercial products, services, information -- represented by 24-hours open "convenience stores" (called "con-bi-ni" in a shorter term) that can be found anywhere in town.<sup>14</sup> The brightly lit store windows have become the symbol of city life and its "convenience". People often drop by at "conbini" mainly to get the feeling that things are available and people are there -- so that they are not alone. The sense of real time connectivity and convenience is behind the ketai culture.<sup>15</sup> Third, because of these situations most young people feel they need to live in big cities, Tokyo in particular. Since universities and companies are centralized in major urban areas, many of those who grow up in rural areas or minor cities would realize their idea after graduating from high schools.<sup>16</sup> It means many young people live in big cities away from home. They enjoy the sense of freedom, away from small communities where everyone knows each other. At the same time, they experience the sense of loneliness.

These issues are all related to the reasons why mobile phone achieved such a strong presence in Japanese society, especially among the young generation. There are also more direct reasons why mobile phones fit the urban life style in Japan.

## Life on Train

Dense population means limited space availability and high cost for living in big

cities. In fact Tokyo is known as one of the most expensive cities in the world. Inevitably many people live in suburban area. Commuting takes usually at least an hour, easily two hours or even more, one way. Typically taking bus (or cycling) to the nearest station and changing to train and then change lines, often to subway, one spends a few hours a day for commuting. Because of heavy traffic and limited parking lots in central cities, driving is not practical. Instead, public transportation system has highly developed.

How people spend time on a crowded train, especially after a hard working day? Businessman reading comic magazines on the train has been a known phenomenon in Japan. Today mobile phone substituted comic magazines.<sup>17</sup> Light in weight and easily operated with just one hand, mobile phone offers an ideal pastime activities during commuting, either with offline games or emailing. It is also money saving, since offline games do not cost anything once they are downloaded and saved. Emailing also fits well to life on train. A user would prepare messages on a running train and send them when it stops. Earlier subway users used to complain about the limited accessibility to networks. Today signals seems to be caught almost anywhere on subway platforms. The rapid evolution of battery life, lightweight and compact battery chargers, and is behind the mobile phone use for pastime.<sup>18</sup>

As a result of increasing use of mobile phone while commuting, a new guideline of its usage on public transportation emerged from users' practice. By 2003, both in Tokyo and Osaka areas, public transportation companies came to an agreement about the use of mobile phone on train or bus, following the practice by users.<sup>19</sup> According to the new standard, use of mobile phone without speaking is allowed on all cars, and it is strongly recommended to switch to the silent mode (which is called "manner mode"), while it should be switched off near the priority seats to avoid interfering pacemakers. (Figure 3) Formerly companies had different policies, in many cases simply prohibiting the use of mobile phone itself on train in order to maintain silence. Being quiet at a public space has been traditionally considered important, and is well respected in Japan. As the non-audit applications became more common, however, users started using their phones according to their own criteria. After more than a year since the more reasonable "ketai manner on the train" was established by users, public transportation companies officially approved the new guideline.

## Less Children, More Care

Besides the cost of life in general, education also costs. Providing a better opportunity for children has become a goal for many parents, which means spending money to send their children to better schools.<sup>20</sup> On the other hand the social support is far too inadequate for mothers to continue their career while single income earned by the husband might not be enough to maintain the level of life. These factors have lowered the average number of children per family to less than 1.3 by Spring 2004, significantly lower than the average among other highly developed countries. This means that the parents would spend more money per child, buying them fashionable clothes or gadgets such as mobile phone, and paying for a better education, as an investment for future. Even in the time of low economy parents still send their children to the costly after school classes to prepare for entrance examinations, or for English lessons, music lessons, or to costly private schools.

As the result, many teenagers take trains regularly, coming home after dark.<sup>21</sup> For parents who live in suburb, their children's safety -- especially of daughters' --- has been an important issue.<sup>22</sup> Mobile phone brought a best solution. Parents would buy a mobile phone for their daughter participating in after school activities, after she has convinced them how useful it is, and promised them that she would keep the telephone bill within a reasonable range. According to studies, many parents pay the basic fee for their children's phone and tell them not to go beyond the limit. Children pay the rest if they overuse. They learn how to use their phones efficiently, enjoy chatting with friends or downloading the latest hit songs without ending up paying the rest of the bill.

## Girls as Leading Personal Users

It is not clear how use of mobile phone started among girls. Parents or elder brothers or sisters might have got the idea, as use of mobile phone became more commonplace at their work places. "Trendy dramas" on TV, which was extremely

popular among high school and university students, played a major role in widely spreading the image of mobile phone as an icon of trendy urban life. Once the availability of handy and light handsets is known, the information was spread among young women quickly. They immediately recognized how they could use mobile phone on their own way. Service providers and manufacturers of mobile phone recognized the phenomenon and realized its importance, as young women have been known as trend leaders in Japan.

Low teen to early twenties girls and young women are sensitive and curious to new products and ideas, often adventurous for new experiences, spend money for what they find interesting, and love to share the information or experiences with friends. They are particularly keen to find and own "kawaii" (cute, lovely) items such as stuffed animals, Hello Kitty goods, charms, or nicely designed stationary. Compared to them, young men are considered to be more conservative, have less money to spend, and communicate with friends much less.<sup>23</sup> Another important difference between young women and men is the nature of communication among friends. For girls, chatting or going out with friends is mostly for the sake of enjoying or maintaining communication itself rather than for serious or practical purposes. It also means that the nature of communication is subtle, to convey emotion rather than information and confirm the relationship.<sup>24</sup> This is clearly seen in a variety of mediated communication channels among girls from the traditional "diary exchange" to exchanging "purikura", of which feature and meanings are inherited to the attached photo from mobile phone cameras. Therefore it was important for them that mobile phone became not only affordable (for their parents, in many cases) but also smaller, nicer, and be owned, so that it could become a personal item to carry with. Rental system that NTT had offered would not have worked with them, since a rental phone could not be (psychologically) personalized, or felt as one's own.<sup>25</sup> The importance of ownership and personalization of mobile phone will be seen with the development of "designed" phones and "ketai strap" in early 2000s, which will be discussed later.

## Mobile Phone as a New Medium

From the beginning, girls seemed to understand mobile phone as a medium essentially different from fixed-line phone, while adults still recognized it as "portable phone" ("keitai denwa"). The culture they developed along the use of SMS and other text messaging services or attached photo clearly shows such understanding, as well as with oral communication over mobile phone.

Especially in the early days of mobile phone, conversation had to be short because of battery life and communication cost. This was felt uncomfortable to many adult users who still tried to follow traditional formalities of conversation such as seasonal greetings, and felt ending a conversation short was almost rude.<sup>26</sup> However, young girls did not feel like that. Before mobile phone became accessible they had already achieved a new form of communication with pagers, enjoying short, quick messaging among friends. Typically messages were exchanged among friends who meet regularly. High school girls using pagers in classrooms became a widely known problem, triggering discussions among teachers and parents, and on newspapers. Adults had difficulties in understanding why girls exchange messages with their friends sitting in the same room, with whom they would be talking face to face during the break. Why can't they wait until the next break? The fact is that the importance was not in the content of a message itself but in the real-time-ness of the messaging, which creates the feeling of shared experiences among friends. Spontaneous, interactive, private, coded, mediated nature of messaging fascinated them.

Originally pager was not designed as a real-time interactive communication device but was meant to send a serial number (i.e. a contact number) to someone, who should then call back from a nearby payphone. However, young girls turned it into a more convenient communication tool by inventing a code system on it. Instead of sending phone numbers, they would compose certain combinations of numbers that mean "interesting", "boring", "nothing special", "talk to you later", etc. Clever combinations were spread by word of mouth or through various media, shared by many, adding richness to their coded language. Later models came with text/number encoding/decoding feature to follow the practice. There even appeared free software toward late 90s, to allow the Internet users to send short messages to pagers by encoding texts to corresponding numbers.

It also means that girls had already started making use and enjoying two different channels of communication simultaneously - conversation in real space and mediated conversation/communication through text, among the same group of

friends.

Such use of pagers for text messaging anticipated the situation around 2000 in which mobile phone became the major platform for email, Docomo being the largest "Internet provider" in Japan. Need and interest for email or other kinds of text messaging service on an inexpensive mobile communication platform was clearly visible. In fact, a breakthrough for mobile phone arrived when "short message service" on PHS became available in 1996.<sup>27</sup> At this stage personal computer communication including BBS (bulletin board systems) has become popular among computer users, but teenage girls were not part of it.<sup>28</sup> Computers, especially laptops, were still too expensive, and most of them were poorly designed both in terms of user interface and its outlook.<sup>29</sup> The Internet was not yet accessible for most Japanese.<sup>30</sup>

Regarding other possible platforms for exchanging messages, palmtops have never become quite popular in Japan, and those with the network connection were still a novelty even in the US in mid 90s. Under such circumstance the short message service on PHS not only succeeded pagers but also confirmed a new form of telecommunication among the young generation. As the service when it launched only allowed exchanging a few words among users on the same network, friends often coordinated in choosing their providers. This "girls' networking" was behind the rapid growth of PHS. To meet the necessity, standardization of short message protocols among major providers was realized. Long messaging services and email on mobile phones followed, making it possible to exchange email with users on any networks, including the personal computer users on the Internet.<sup>31</sup> Number of antennas in town, especially at stations, increased quickly.

Of course mobile phones are used as telephones as well. For the young generation living with their parents, portable and private mobile phones became extremely useful at home. As already mentioned, many families live in cities where space is limited and living cost is expensive. This means that even after graduating from school and started working, many young people live with parents mostly because of economical reasons. Keeping privacy is hard when other family members pick up phone calls from friends and the house is too small. It is similar at work where an office is traditionally shared with colleagues and bosses without screens. Private phone calls are difficult to make. How about face-to-face communications? Life in big cities requires arrangements to meet others. The spread of mobile phone changed the way people meet. Instead of making a solid arrangement beforehand, appointments could be more flexible including booking seats at a restaurant from a street corner.<sup>32</sup> This tendency of having more spontaneous parties made mobile phone an indispensable tool in urban life for the young generation.

Thus it was natural that young people leading single life also started using mobile phone. In their case, there was another important and practical reason. For those who start living in big cities away from home, mobile phone became a low cost substitute for a fixed-line phone. While the initial cost for purchasing a mobile phone went down dramatically, house phone remained expensive, with a large amount of deposit (72000 yen = approx. 700 USD) as a one time payment required in order to get a new telephone line.<sup>33</sup> While fixed-line phones are still considered a part of an identity of being an adult citizen, students and young workers without a family had little need to respect such social code.<sup>34</sup> Even though a fixed-line phone could serve mostly as an answering machine with the urban nature of their life, spending most of time in town and on trains, there was no other option for them before the arrival of inexpensive mobile phone services.

Often young people who start their life in big cities suffer from a feeling of being detached from what one belongs to. The "solitude in living alone in a big city", has been a known psychological issue.<sup>35</sup> While long distance calls are costly on fixed-line or pay phone, distance does not matter or matters little in case of mobile phone because of its nature.<sup>36</sup> Thus mobile phone encourages more frequent communication between young generation in cities and their families in their hometowns. As parents become interested in buying mobile phones for their children, service providers launched a variety of family package services that promote the use of mobile phones on parents' end as well.<sup>37</sup> Even for those who don't want to be bothered by their parents too often, having a mobile phone was not a bad idea. Since receiving calls also costs, there was always a good reason to keep their conversation with parents short. Thus mobile phone helped forming a new type of relationship among family members. Connectivity, rather than being actually connected, has become the key issue of family bond.

This clearly reflects the urban nature of the Japanese society in which major social

and educational activities take place in big cities while parents and grand parents are often left behind in suburbs and rural areas. At the same time cultural activities on *ketai* are also growing on elderly generations as well. Increasing popularity of online HAIKU party is one of such examples. In many cases elderly people get their mobile phones as presents from their family so that they can be connected in case, and they eventually start finding other possibilities in using their mobile phones for themselves. Recent success of a sales campaign by Tu-ka with the "simplest *ketai*" for elderly citizens (which looks exactly like a traditional wireless headset for a house phone) is based on the growing interest to mobile phones in all generations - and the providers/makers need to sell more to the "silver market" to avoid the market saturation.

## Conclusion: What Do We See in Near Future?

With the introduction of i-Mode in 1999, mobile phone has become not only a major platform for the Internet connection and email for the younger generation but also an important part of the social infrastructure. It is not even a telephone any more, but a major multi-purpose and wearable communication tool. As almost everyone active in the society is connected to the mobile phone networks, public services have been adopting mobile phone as a serious communication platform. Mobile phone applications in medical care, home security, social welfare, etc., have been supported and encouraged by the government in direct and indirect manners. As the ratio of the younger generation of the country is expected to drastically drop in near future, while the government and the society are reluctant in welcoming workers from abroad, the combination of mobile phone and robotics technology is felt as the key technology in the future of such social services. Behind the scene is the industry's intention to sell the product and technology to the world market.

Mobile phone has developed into a universal communication tool in Japan with the help of social and cultural elements as described here. At the same time mobile phone has been changing the society in many aspects. It is an interactive process. On the personal level it has been changing the communication model among friends and families. At a more cognitive level it is changing the notion of space, time and reality, especially with the all-time connectivity coupled with its camera. This is a process that has already taken place with the development of urban nature in the Japanese society. Here again we observe the interactive nature of mobile phone being integrated in the society and culture. This is also related to the darker part of the mobile phone culture. Similar to what has been happening to the Internet world, all sorts of spams, cheating, dirty business, criminal issues have been taking place on the mobile phone networks.<sup>38</sup> Mobile phones are being used for crimes such as kidnapping, while there are cases in which people were saved from crimes and accidents with the use of mobile phones. It is not so simple, either mobile phone has been changing the society for better or for worse.

Still, according to inquiries I have made with many of my students, almost all of them believe mobile phones have changed their communication and life for better, while the "pressure for connectivity" is sometimes felt a little too heavy. The optimism toward the mobile phone culture could be interpreted in different ways. However, it seems clear to me that mobile phone has played an important role in solving at least some of the problems people have (or had) been facing as the urbanization of the society took place in a rather short period. The sense of time and space had already changed with the sprawl of the city, train system, centralization of population, telecommunication system, etc. Mobile phone filled the gap which the Internet could not have filled that easily, at least in Japan.

■ 1. It is a common practice in Japan that the increasing familiarity and frequency in usage results a word being shortened in conversation. For example, McDonald (the American fast food chain) became "mackku" in Tokyo area and "makudo" in Osaka area. The word "*ketai*" is a result of similar abbreviation among young people. However, the term now appears on newspapers and serious writings as well, reflecting its specific meaning, not just as a telephone one carries. In this essay the term "*ketai*" will be used to in relation to the Japanese concept of mobile phone after it has become a cultural phenomenon.

■ 2. There are two types of mobile phones: "*keitai denwa*" and PHS, based on different kinds of networks but offering similar services. In terms of technology, PHS is close to an extension of wireless telephone receiver of house phones. The cost is lower but the coverage of a transmitter is smaller. Thus PHS is useful in urban area, but not in rural area or for use while driving. As it will be mentioned later in more detail, less expensive PHS became the breakthrough for the use of

mobile phone among the young generation. It means that for many young users PHS was practical enough, since they live in urban area. In this essay, I include both types when using terms "mobile phone" and "ketai".

- 3. Korean mobile phone culture shares many elements in common with the Japanese, which is not hard to understand considering similarities in social and cultural factors. In general, mobile phone uses in Asian youths seem to share certain features in common, but it is not the topic to be discussed in this essay. Mobile phone uses in Finland, where the service became popular among the young generation already in early stage, show both similarities and differences when compared to its Japanese parallel. The situation in the US is very different from the above mentioned countries, although the launching of "cell phone" and its wide spread among businessmen already took place at the earliest stage. These similarities and differences reflect social and cultural background in each society such as the role of younger generation as consumers, their relationship with the family and friends, life style, etc.
- 4. Recent researches include the following:
  - 5. It was an extension of the system that used to be applied to fixed line telephones. Traditionally house phones were based on a rental system in order to fully maintain the control over the network. "Normal" house telephone receivers, a black standard model, were owned by NTT. Rental fee for the receiver is charged every month. The system still exists as an option. The basic idea was that NTT has the 100% control over the telecommunication network up to every receiver in a household so that no one is allowed to manipulate or make any modification on receivers or lines, since the devices do not belong to users. NTT could apply strict policies because it used to be a national institution that held its monopoly on telecommunication business for one hundred years, until it was finally privatized in April 1985. Even today, basic infrastructure of telephone network is owned by NTT (officially the NTT Group, since it was divided into companies in 1999). Those who want to use DSL connections need to have a contract with NTT and pay the monthly fee even if they use Internet service providers such as YAHOO. Providers using CATV networks (via cable or satellite) offer connections without payment to NTT.
  - 6. By the end of 1988, IDO started telecommunication services as the first non-NTT company. The competition made the mobile phone business more active. Introduction of compact models in 1991 (NTT's Mova), spin-off of Docomo in 1992, and withdrawal of deposit money in 1993, helped the increase of users.
  - 7. Pager was named "pocket bell" in Japan, and was called "pokebel" among young people. They invented usage of their "pokebel" for exchanging coded messages, which was not a part of its original function. Detail will be explained later.
  - 8. Considering the population of very young and very old, this statement often seen on newspaper and other articles is not far from the reality. Japan's population is 127.6 million, out of which 85 million are between 15 and 64 years. The total number of mobile phones in use in Japan is 87.7 million, which is more than the above-mentioned number. (As some of the PHS are used as wireless PC cards, the total number of users should be slightly smaller than this. There is no statistics available for PHS PC cards.) Here are my own experiences at Waseda University. In 2003, there were some students in my class who did not have mobile phones in June, two months after they entered the university. In 2004, everyone had a mobile phone by early June. A few students wrote: " I was not planning to buy a ketai, but I had to. Friends complained that they couldn't contact me, and in fact I was missing gatherings."
  - 9. Japan is in fact a mountainous country. According to the official statistics, among the 370,000 km<sup>2</sup> of the whole land only 18% is usable. Many mountains are too steep to be inhabited. This partly explains why Japanese population is concentrated in urban area. There is a historical background as well. Already in 18th Century, Edo (Tokyo) was probably the world largest city. There was a system to bring people from the countryside to Edo, which was already the political capital of Japan.
  - 10. Kyoto, Osaka and Kobe form a continuous large urban area along with satellite cities. Nagoya has satellite cities such as Toyohashi and Toyota.
  - 11. More precisely, out of 127.6 million people living in Japan, 34 million live in Tokyo and its vicinity, including cities such as Yokohama, Kawasaki, Funabashi and Saitama.
  - 12. In the beginning mobile phone services only covered the three major urban

areas.

- 13. People go to cities for shopping, cultural activities, or just for "gathering information". Such situation has been comically illustrated in many films, including a recent film "Shimotsuma Monogatari" (Shimotsuma Story, 2003).
- 14. In a residential area of Tokyo where I live, for example, there are five 24-hour open "conbini" on the way from the station to my place. It is only six minutes walk. In smaller cities and suburbs "conbini" is usually found along a main route, for customers who arrive with their cars or motorcycles.
- 15. Also "conbini" offers services such as ATM, payment, ticketing, DTP, copying, mailing, shipping, etc., playing the role of utility stations in urban life. In Japan we do not have ATM machines on street corners that are accessible 24 hours a day. It is only in the past few years that banks started installing their ATM machines in conbini. Since then money transaction became possible at any time of the day. Paying telephone, gas, and electricity bills at conbini has been possible for many years. Including some services offered by local government and libraries, use of conbini as a kind of community kiosk has been developing.
- 16. Most high school students from Tokyo continue to universities or other schools in Greater Tokyo area, which also attract many students from Osaka and other cities. Thus percentage of students in Tokyo area is quite large. On the other hand, big companies send their employees to different regions, which is the major reason for people to move out from Tokyo.
- 17. Sales of weekly comic magazines has significantly dropped in the past few years, while paperback comics sales is doing even better.
- 18. Low cost antenna/signal enhancer kits are widely used at cafes, bars and restaurants on basement floors to secure their customers. (People naturally avoid places with poor connectivity for meetings or gatherings. A notice such as "mobile phone connectable here" is often seen at the entrance of such basement eating/drinking places. ) Battery life of Japanese mobile phones has become quite long. According to a recent survey, most Japanese users recharge their phones once a day, typically after coming home, and feel batteries that last for several days are not needed because they may mess up their habit of regular recharging. Battery chargers became significantly small and light, easy to carry in a pocket. Portable battery chargers with normal electric cells are available at "conbini" stores or telephone supply shops. They are small and light, often fashionably designed to use as key chains or "ketai strap". Some "conbini" stores also offer coin-operated instant battery charging service.
- 19. Public transportation system in urban areas consists of combined network of JR (former National Railroad), private railways, subway and bus operated by local government, private bus lines, among others.
- 20. Traditionally graduating from a known university means getting a better job, although it has been changing since the recent economy crisis. Entrance exams for universities and better high schools (or, even certain elementary schools) are very tough, while graduating is rather easy. Typically young people are under pressure as high school students to prepare for the entrance examination, and enjoy life once they are accepted as university students. Situation regarding education in Japan has many similarities to those in Korea and Taiwan. Such life style is closely related to the use of mobile phone among them.
- 21. According to the latest survey on university students' life and their background, cost for education has been high. It is practically mandatory to take special after-school classes to be able to pass examination for universities. Because of the insufficient level of education in public high schools, 70% of students who are accepted to national universities are graduates from private high schools. (<http://dir.biglobe.ne.jp/col/finance/ikujimoney/closeup/CU20040828B/index.htm>) Private high schools are known for hard-to-clear entrance examinations and rather expensive school fee. In Japan, after-school classes have practically become a part of education system. Many high school students join preparatory schools ("yobiko") to prepare for university entrance examination. Yobiko are usually located close to major stations. Typically children in urban area start joining private classes ("juku") at the age of ten or earlier. Smaller scale "juku" are found in each neighborhood and offer rather flexible timetable. More established and competitive juku, to prepare for high school entrance examination, are usually located near major stations, both in central city and in suburb. Classes take place in the evening, from 6 to 9pm or so, to allow children from remote area commute after school. Often parents pick up their children at the nearest station. Mobile phones made such arrangements easier and more reliable.

- 22. Although Japan is still a relatively safe country, women have been targets of sexual offenses and less important crimes such as snatching bags. These often happen as they walk or cycle home after dark.
- 23. Young women's role in consumer market has been widely known in Japan. Picking up what young women regard "kawaii" is considered a key to success in Japanese market for younger generation. Women over twenty and have jobs or rich parents may enjoy traveling abroad and buying "brand" bags or clothes. However, their appetite for nice things and exciting experiences is the other side of still limited role of women in the society. They understand that they could enjoy life fully only when they are young, and that they are allowed to do so because they are more or less outside of the social ladder. The phenomenon of young women becoming more active and adventurous has been reported widely inside and outside Japan since late 1990s. For example, recent BBC produced short documentary on young Japanese women's life style, broadcasted in Finland in September 2004, illustrated the gap between young women's points of view and yet conservative social system.
- 24. It is also observed in the way Finnish young generation, especially girls, use mobile phones, such as exchanging mobile phone photos. Significance of exchanging "emotion" on mobile phone communication is studied in detail in "Mobile Image" written by Koskinen, Kurvinen and Lehtonen, IT Press, 2002.
- 25. See note 5.
- 26. An accident that happened to a businessman in late 90s is an interesting example how mobile phone functioned as an extension of one's office. The businessman was speaking to his client while waiting for a train on a platform, as a product he had sold had some problems. He lowered his head repeatedly in a typical Japanese manner as he apologized, without noticing that the train was approaching. Luckily he was not killed. The case was reported on newspapers with warnings to mobile phone users.
- 27. See the graph.
- 28. It was known that the male population was much higher than female on BBS. (Thus there were male users who disguised themselves as young women to attract attention.) BBS appeared in Japan by late 1980s. PC-VAN and Nifty-Serve were major providers but there were many independent BBS networks as well. Users connected using dial-up connections, either on analog lines or more expensive ISDN lines. It was rather expensive as telephone fee is based on both connecting time and distance, while connecting speed was slow and access point was often far. Although it was still expensive for many students, introduction of late-night discount rate by NTT in 1995 was quite a success. To avoid the dramatic network slowdown around midnight, caused by the service, users started connecting very late. It created a new social problem of young workers and students falling asleep during the daytime. As the Internet became accessible and www became popular, many BBS systems moved to the Internet by the end of 1990s.
- 29. It changed when in late 1990s the stylish iMac became the first popular computer among young women for its "kawaii" (lovely, cute) design. Many of them bought their first computers to run "PostPet", an interesting and very "kawaii" communication software developed by the artist Kazuhiko Hachiya and Sony Communication Network (SCN). On the other hand, the price, size and weight of laptops remained as a problem for many Japanese for years. As most young people spend little time at home and their rooms are usually small, laptop computers could be a better option. However, laptops were bulky and heavy to carry as one commutes, taking train and changing lines up and down steps at stations. The main stream of laptops came from US where they are designed for those who drive.
- 30. JUNET, launched in 1984 by Jun Murai, became the basis of the Internet in Japan. It developed into WIDE Project in 1988, which bridged major Japanese personal computer networks to NSFNET. This made possible to send email to other networks. Acquisition of IP address became possible in Japan in 1992 for corporate users, but it was still very costly to introduce the Internet. Around 1994 access to the Internet became available for personal users, but only limited people started using the Internet from their home computers. Many students got access to the Internet around 1996 when universities started introducing the Internet. Internet service providers added access points nationwide in late 1990s to snatch private users from personal computer networks. Broadband connection using DSL became available and rapidly increased since 2001. Under such circumstance mobile phone has been often a more practical solution for the Internet connection.
- 31. The rapid progress in messaging services took place around 1998 to 1999.

- 32. There are reasons behind the importance of arranging meetings. Because of the limited space, home parties are not common. Instead people get together at cafe or restaurants or karaoke places closer to their schools or working places. While Japanese life style does not allow much free time, the size of urban area makes it difficult for people to stay in downtown until late. Already at 10:30 pm people start leaving in order to catch the last train home.
- 33. This deposit (officially called "right to join telephone network") was introduced after the Second World War, to help building the infrastructure. It has been kept since then even though the network is already established. The one-time payment is far higher than its equivalent in other countries, such as 60 dollars or so in NY or 45 Euros or so in Paris according to a survey carried by the government. In late 90s NTT introduced an option to distribute the payment over years ("Lite" option") instead of one-time payment. Currently abolishment of the charge has been discussed. Since a user has to buy a line from NTT for any DSL connection, the system has been an obstacle for young people for enjoying the Internet. (CATV-based connection is usually more expensive than DSL.) Recently dealers are selling the "right" at a discount set price with DSL connection. Because of its value, the "right" is sold or mortgaged for cash at dealers that can be found easily in big cities when a line is no longer needed or there is an urgent need for money. Although there is no statistics available, obviously quite a few young people sold their "right" and switched from house phone to mobile phones. The market value of the "right" has gone down.
- 34. A house phone number -- not a mobile phone number -- is often required for legal or financial processes. Earlier, banks and many public services had phone numbers that could be accessed only from house/desktop phones or payphones. The situation has been changing rapidly in the past few years to meet the reality.
- 35. There is a term "May disease". New academic year starts in April, and then there is a holiday season in early May, before new comers find friends and establish a network. Not a small number of freshmen experience a psychological crisis at this moment as they have no one to meet during the holiday season, and they are not rich enough to go home after spending much money to set up a new flat. Some of them already drop out from school after the holidays.
- 36. It depends on the provider. With Vodafone a call is charged on duration regardless of distance. Docomo and au have different systems.
- 37. Especially in early spring mobile phone campaigns focus on family packages, as students and graduates start preparing for new life. According to recent statistics students living away from home list their family members as people they speak most frequently over phone. Today, with a typical package family members get 25% to 30% discount on the basic fee. Additional discount is often available with connection to a pre-registered number. How "family" is considered and where bills go in each service offers an interesting insight on Japanese society. Until recently - March 2004- NTT's package only allowed a family who shares the same family name, and all the bills were sent to the "main user" which usually means the father. Au's package has been more democratic without any distinction between "main" and "sub" contracts, also allowing different family names within a package.
- 38. Ketai has become the major medium for "Deai-kei" sites (literally meaning 'meeting place', equivalent to "single" ads or party lines), which have always existed with different media and caused problems. Out of 785 criminal cases followed after access to such sites from January to June 2004, half of them were related to juvenile prostitution. 96.9% of the users involved in these cases used ketai to access to these sites. 80.5% of 625 victims were under 18 years old.

Appendix: Mobile phone history of a girl (A former graduate student in science from the University of Tokyo)

1996 (18, 1st year university student, biology major): Pager. Purchased with other girls to enjoy communication. Boys did not have pagers but sent coded messages from pay phones. Internet was accessible at the university, but no one had email address.

1997 (19): Switched to PHS. SMS between PHS users.

1998 (20): J-Phone Ketai (purple, monochrome display, SMS between J-Phone users)

1999 (21): J-Phone, Toshiba, white, monochrome, 3 polyphony, SMS, email messages from PC can be received up to 256 letters

2000 (22, graduate student): J-Phone, Sharp, white, color, 4 polyphony, camera, message up to 3000 letters (send&receive)

2000 (22): Docomo in addition to J-Phone (wider coverage was needed for field

works outside Tokyo) , SMS up to 24 letters

2001(23): J-Phone. Sharp, pink, folding type, camera (110,000 pixels)

2003 (25): Vodafon, Toshiba, camera (310,000 pixels), 64 polyphony, memory card

2004(26): Her friends use video/TV phones. She is considering switching to au, for better offers and design.