Overview of “Keitai” (Mobile Phone) Services in Japan

Akira Matsunaga
Strategic Planning Section, Technology Planning Dept.
“au” Technology Division
KDDI CORPORATION

Abstract

This paper overviews the current status of Mobile Phone (known as "keitai") in Japan and gives a bird's-eye-view of a variety of "keitai" services offered in Japan.

1. "keitai" in Japan - Current Status

In Japan, the number of total "keitai” mobile phone subscribers now exceeds 88.5M as of end of July and the penetration of “keitai” to the total population 27M is nearly 7%, whereas the penetration of PC is 78% on per home basis. Most of “keitai” handsets 87% have the internet access capability and in that sense, "keitai” is widely recognized as the most convenient Internet access / data communication tool and seems to have acquired citizenship in Japan.

One of the peculiarities which characterizes Japanese “keitai” is the shift to the 3G third generation platform. 3G platform provides higher data communication capability at lower cost than 2G second generation, i.e. PDC, whereby can support new services with richer contents. As of July 2, 4% of "keitai" subscribers are using 3G capable handsets.

Some recent “keitai” models are equipped with capability to view PC sites and PC documents and in this sense, “keitai” are now approaching the area of PC.

2. Overview of “keitai” services

2.1 Location Based Services

Location Based Service LBS is one of the services which can take full advantage of “keitai”, which utilizes GPS Global Positioning System for system synchronization. Use of GPS for LBS drastically enhances the accuracy of location measurement. If the sufficient number of satellites are visible i.e. four, the location can be calculated based on GPS only. If not, several types of measurement methods are provided depending on the number of GPS satellites visible from handset and supplementary information CDMA pilot phase measurement etc. is used for calculation in order to improve accuracy as much as possible. LBS which are now offered include followings:

- Navigation for a person.

Not only a vehicle but also a man may be navigated by a "keitai”. Map and voice guidance on “keitai” will show the way to the destination.

- Safety and security services

Ex: Inform users of the locations of handsets or family members in search. Alert may be sent if the person in search either enters of leaves the specified area.

- Disaster relief, rescue

- Management of vehicles or workers in the field.

- Amusement, Gaming

Treasure Hunt: “Takara sagashi” using GPS-based location to find treasures.

Play Tag: Virtual “Onigokko”.

In Japan, it is planned that emergency calls to Police, Fire station etc. will be accompanied by location information in the near future, as in E9 in the US.

In LBS, requirement for accuracy may vary depending on usage scenes. In addition, since location information may contain personal information, appropriate care should be taken of privacy protection. It is envisaged that these requirements should be combined in an optimal way to encourage LBS promotion towards the realization of ubiquitous society with a “keitai”.

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2.2 “Chaku-uta®” or use of songs as ringing tone and evolution of music related service

Full song download or “Chaku-uta Full™” is one of the typical examples taking advantages of advanced data communication capability of 3G platform. “Chaku-uta Full” is an evolution of “Chaku-uta” service, in which a part of song is used as ringing tone. At the same time, this enables full song distribution service, by which users can download high-quality full songs whenever and wherever they want. Digital Rights Management DRM is the key technologies for the promotion of music distribution services.

“Chaku-uta full” has an extension capability in combination with other services like Broadcast, Song Search etc. For example, some “keitai” handsets are equipped with song search capability, i.e., by letting a “keitai” handset listen to the song in search or on the air, a handset will find out the song information in association with network and facilitates download of the song.

As for EZ “Chaku-uta Full”, 22 thousand songs are available from 24 sites. “Chaku-uta” and “Chaku-uta Full” are trademark and registered trademark of Sony Music Entertainment.

2.3 Combination of Broadcast and “keitai”

By combining broadcast and interactive capability of “keitai”, a new category of interactive services are now created. Currently, following services utilizing terrestrial analog TV or FM radio receiver capability and “keitai” communication capability are offered:

- A viewer/listener can obtain information related to program on the air while watching TV or listening to FM radio.
- Real time search of a song on the air on TV or FM and download it as “Chaku-uta” or “Chaku-uta full”.
- Providing EPG Electronic Program Guide and link to TV Station Sites.

It is reported that terrestrial digital TV broadcast for mobile terminals ISDB-T segment will be in service in March 26, which is expected to stimulate further collaboration between broadcast and “keitai” to create novel business models.

2.4 Mobile Commerce

The mobile commerce market is growing and it is expected that an adoption of contactless IC card known as “Felica®”, based on ISO/IEC 892 in “keitai” handsets will create new business opportunities. The services to be offered by contactless IC card will include followings:

- “keitai” as a wallet
- Electronic money, transaction
- Electronic tickets for transportation
- Membership/ID card
- Concert tickets

Other than these services, auctions, shopping etc. are offered as M-commerce services. Security is a key component for promoting M-commerce.

Felica is a registered trademark of Sony Corporation.

3. Summary - What is the “keitai” like in the future?

Currently, “keitai” plays following two roles.

1. “keitai” as a personal device
   A variety of features Wallet, Card, Keys, Media Player, Camera, TV, Radio, Magazines, Books etc. are now implemented on “keitai”. It is expected that “keitai” will play an increasingly important role even in a “non-telecommunication” domain, which will lead to the “Everything on “keitai”” concept.

2. “keitai” as a personal gateway
   At the same time, “keitai” will also play a role as a communication hub. Information interaction between local network and the external devices printers, displays, RFID receivers etc., will be realized via most appropriate local interfaces Wireless LAN, Bluetooth, IrDA, RFID etc.

Also in the future, both aspects will continue to grow but which is important will depend on users’ life styles and social environment. Another aspect of increasing importance is the social responsibility reliability, availability, security etc., as “keitai” is recognized as a part of social infrastructure.