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

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3. Summary

1. “Keitai” in Japan – Current Status

Evolution of "Keitai" infrastructure in JAPAN

1st Generation

- Already out of Service
- Analog
- Mainly for Speech Communication

2nd Generation

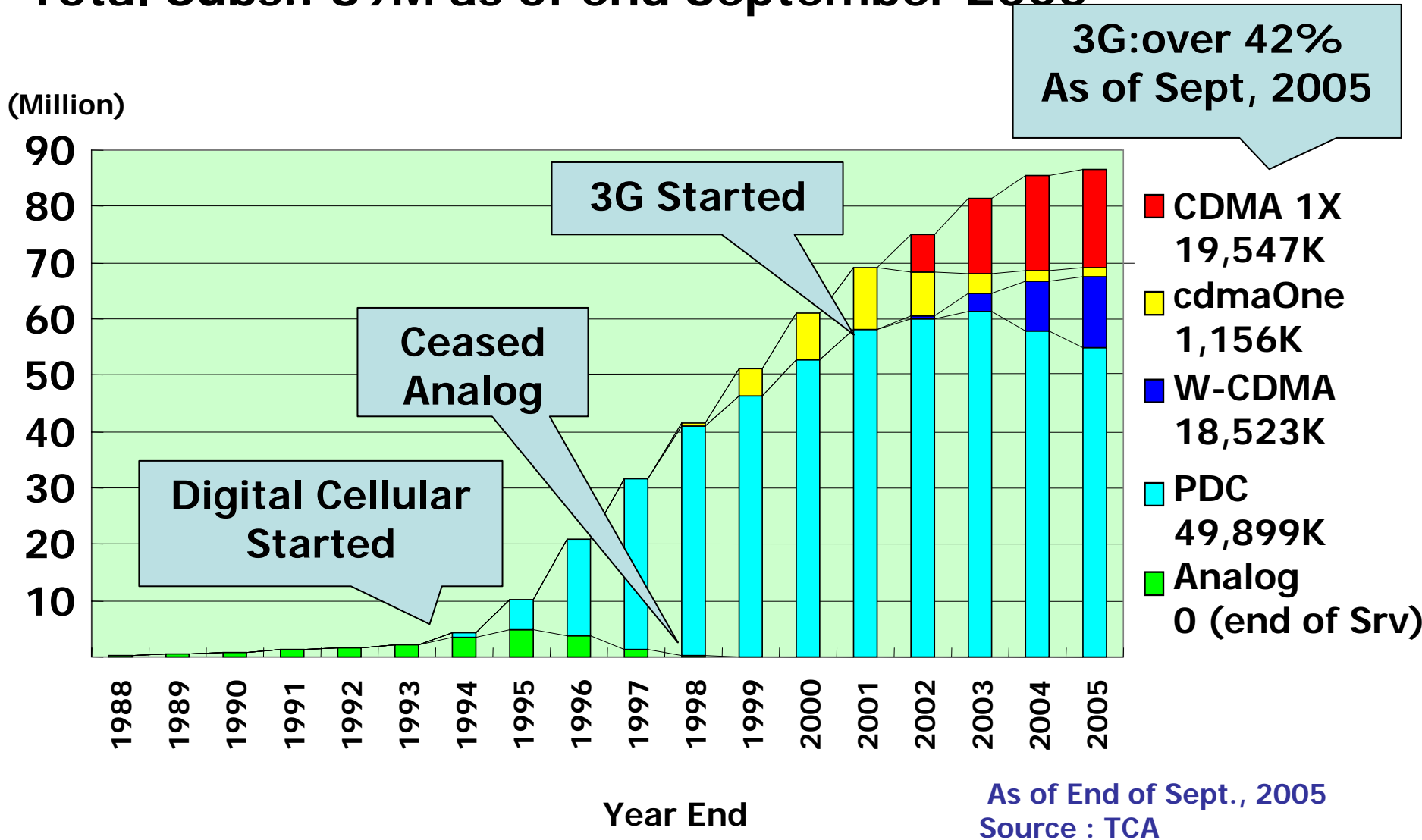
- Started 1993
- Digital (in Japan, PDC system: Japanese Standard)
- Mobile Internet offering started
- Data peak rate typically @9.6-64kbps

3rd Generation

- Started in 2001
- IMT-2000 (W-CDMA, CDMA2000)
- Higher Data Communication Capability
Support of Rich contents, Fixed Rate etc.
- Data Peak Rate up to 2.4Mbps

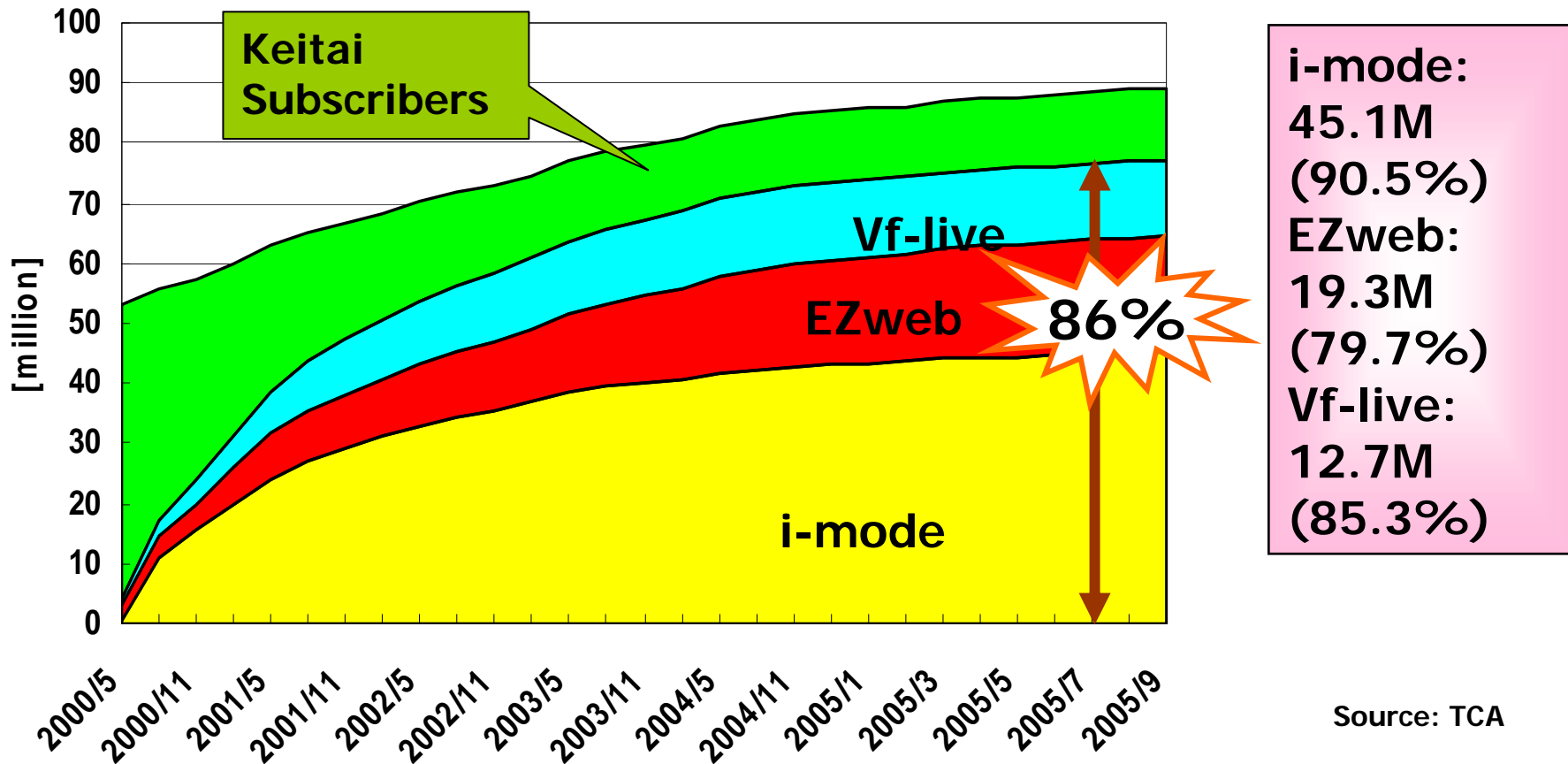
Cellular Subscriber Growth in JAPAN

Total Subs.: 89M as of end September 2005



Increase of Internet Accessible "Keitai"

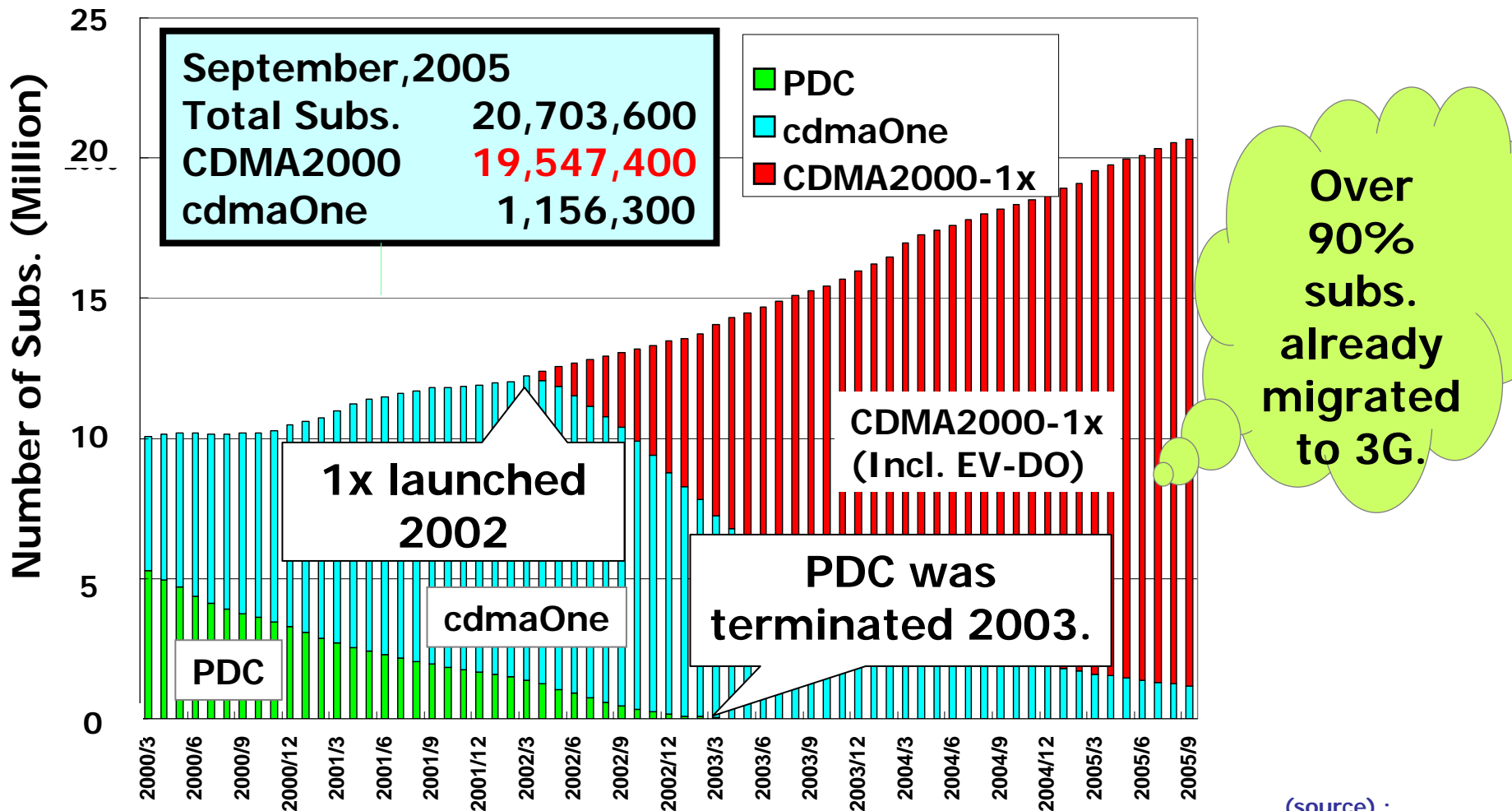
As of September, 2005, 77.2 M "Ketai" (Over 85%) are Internet Accessible. (Total Subs.: 89.1M)



Source: TCA

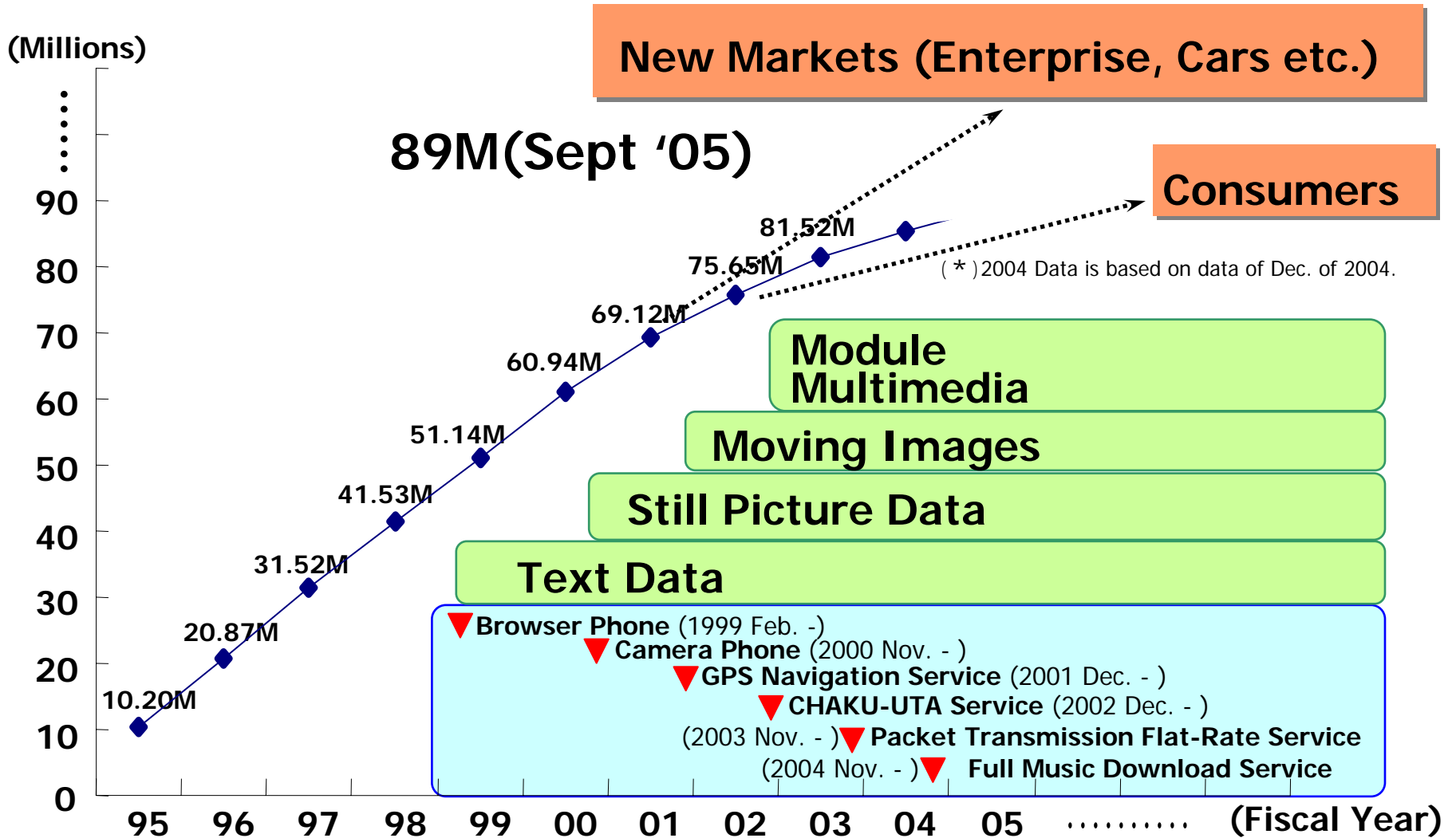
"au" Subscribers Growth

Seamless Migration to 3G Successfully in Progress



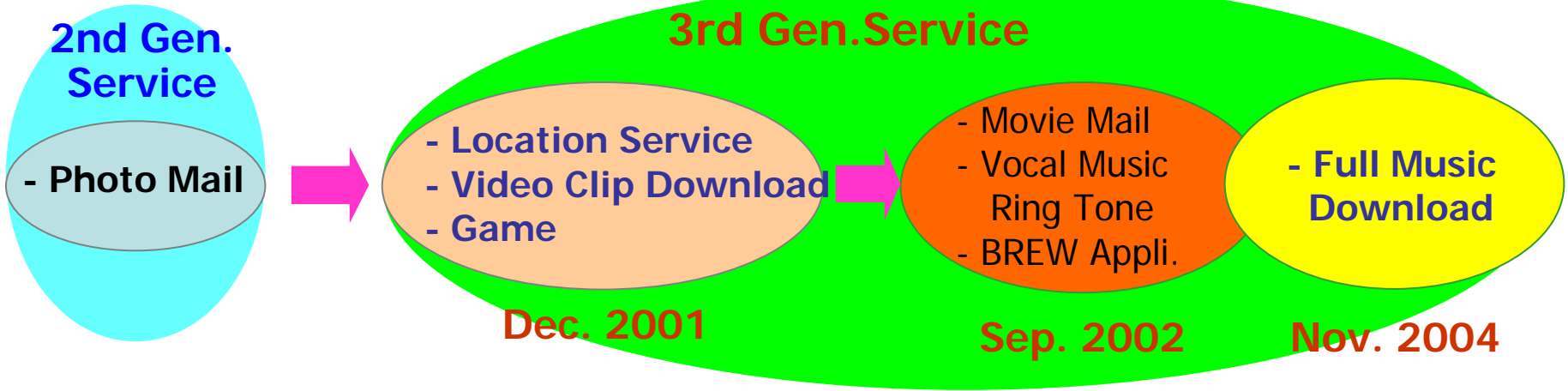
(source) :
TCA

Macro Trend of Mobile Market Evolution in Japan

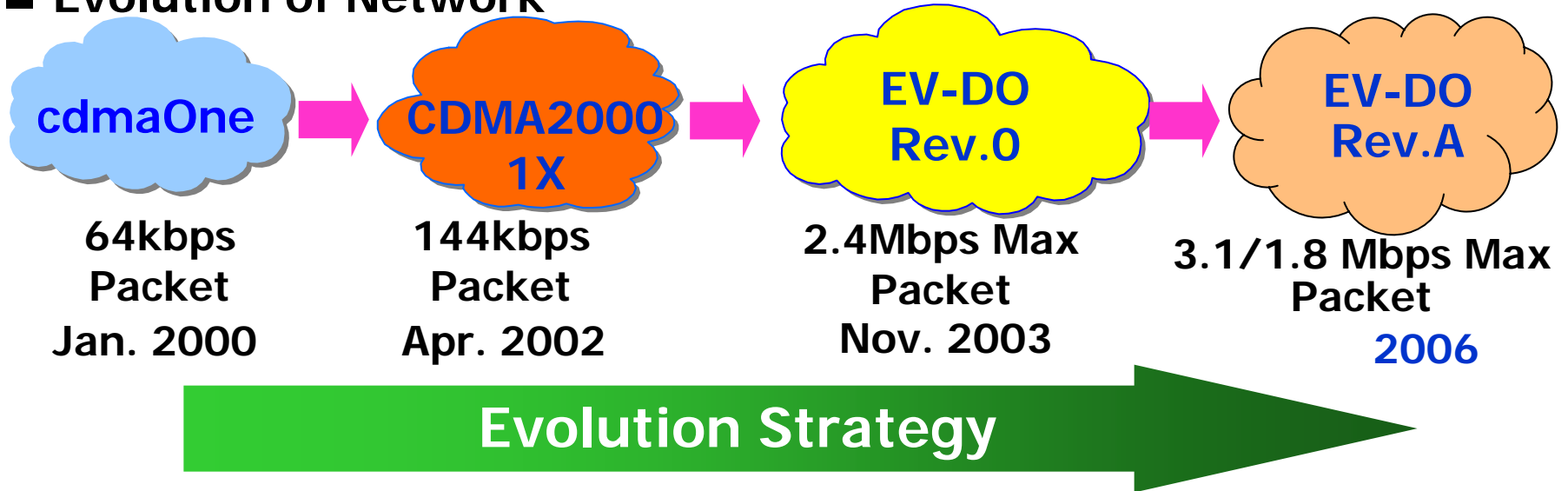


Macro Trend of Mobile Market Evolution in KDDI

■ Evolution of Services



■ Evolution of Network

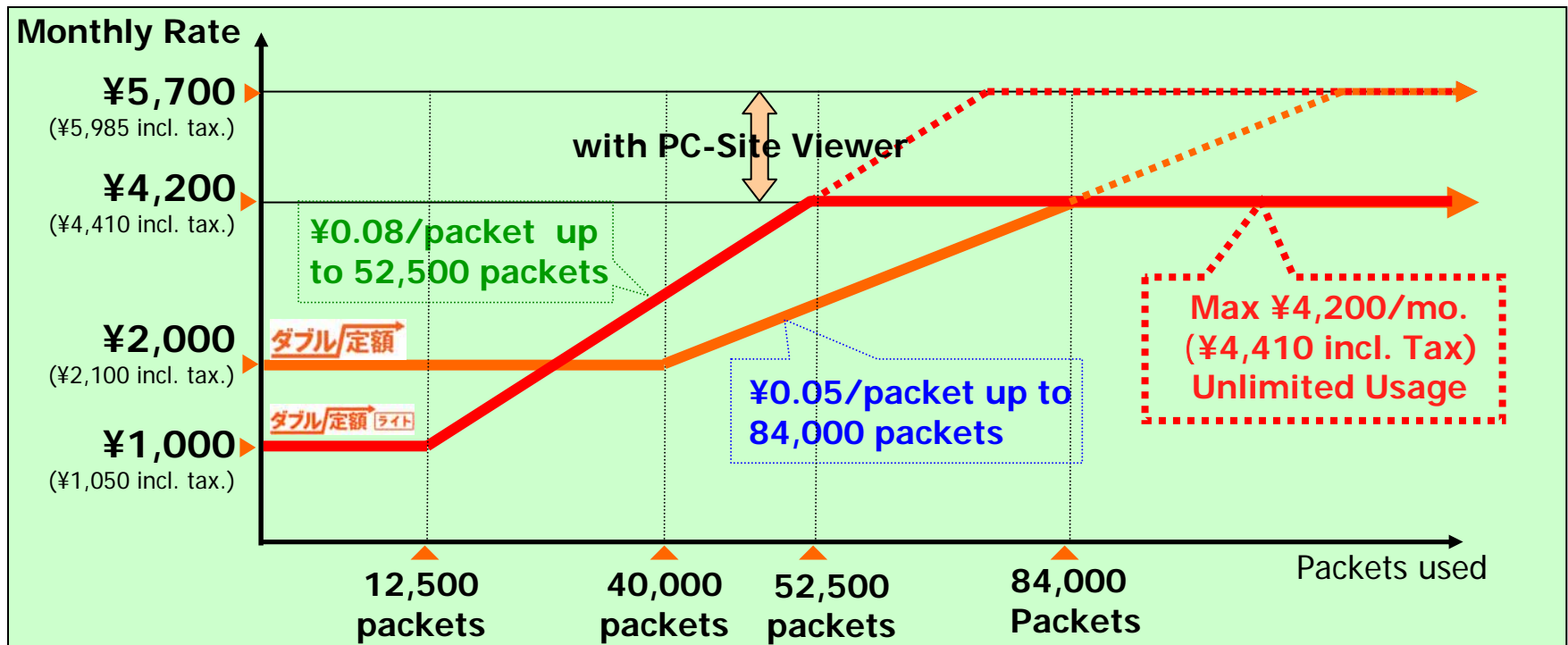


Flat Rate Charging for Packet Service

Example: KDDI launched new flat rate "EZ Double-Flat" on August 1, 2004 and launched "EZ Double-Flat light" on May 1, 2005

ダブル/定額
ダブル/定額 ライト

- EZ Double-Flat: ¥2,000/month (+tax) up to 40,000 packets.
- EZ Double-Flat light: ¥1,000/month (+tax) up to 12,500 packets.
- Unlimited usage at ¥4,200/month (+tax) or ¥5,700/month (+tax) for "PC Site Viewer".



2. Overview of “Keitai” Services

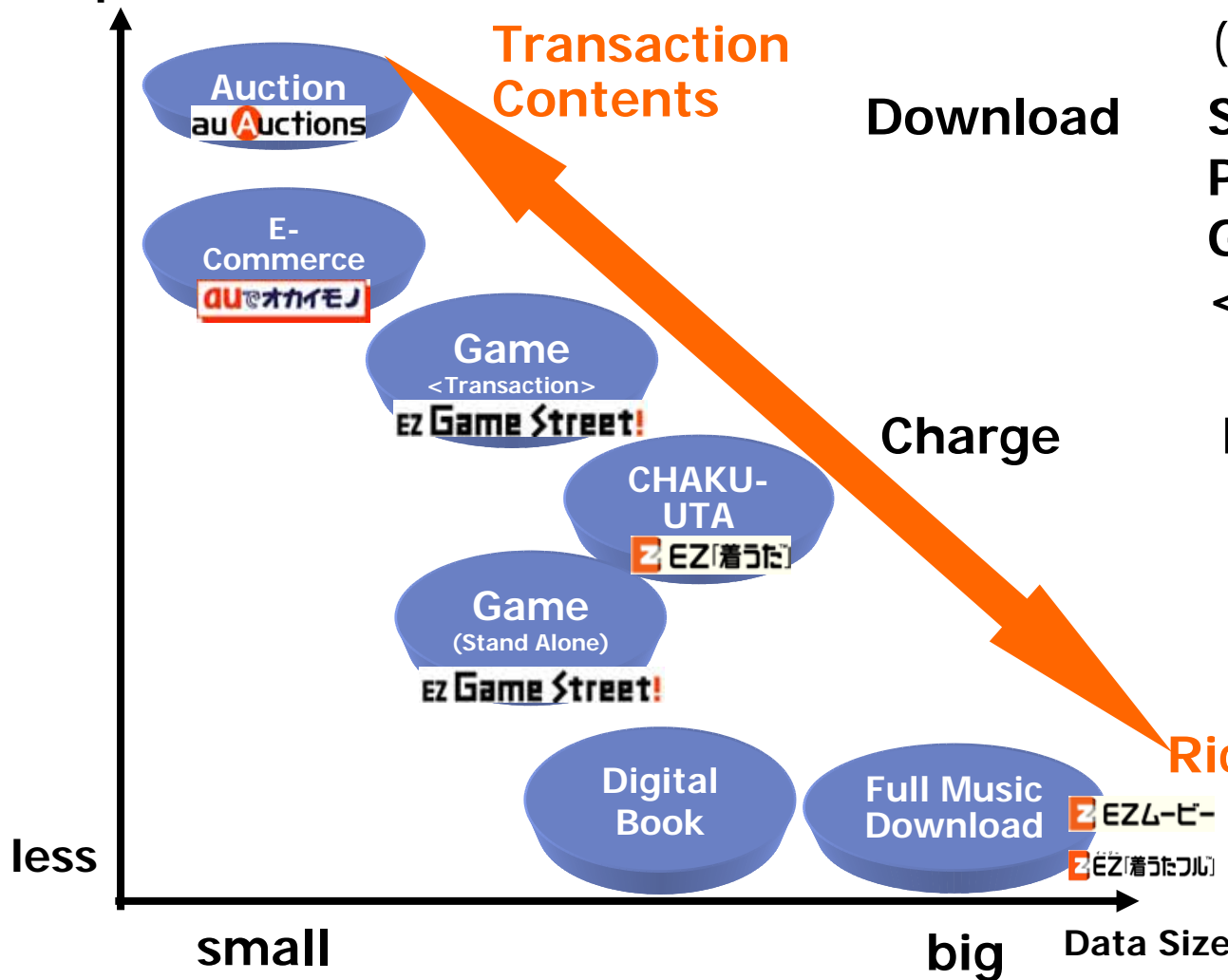
Trend of Contents toward Next Generation

Frequency
frequent

Evolution of Contents

Web	HDML	C-HTML (WAP2.0)	HTML (Opera)
Download	Download	Sound (Music/Voice) Picture (Still/Movie) Game, Digital Book	
		<DL speed> 9.6k	144k
		Measured	Fixed

Transaction Contents



Rich Contents

Charge

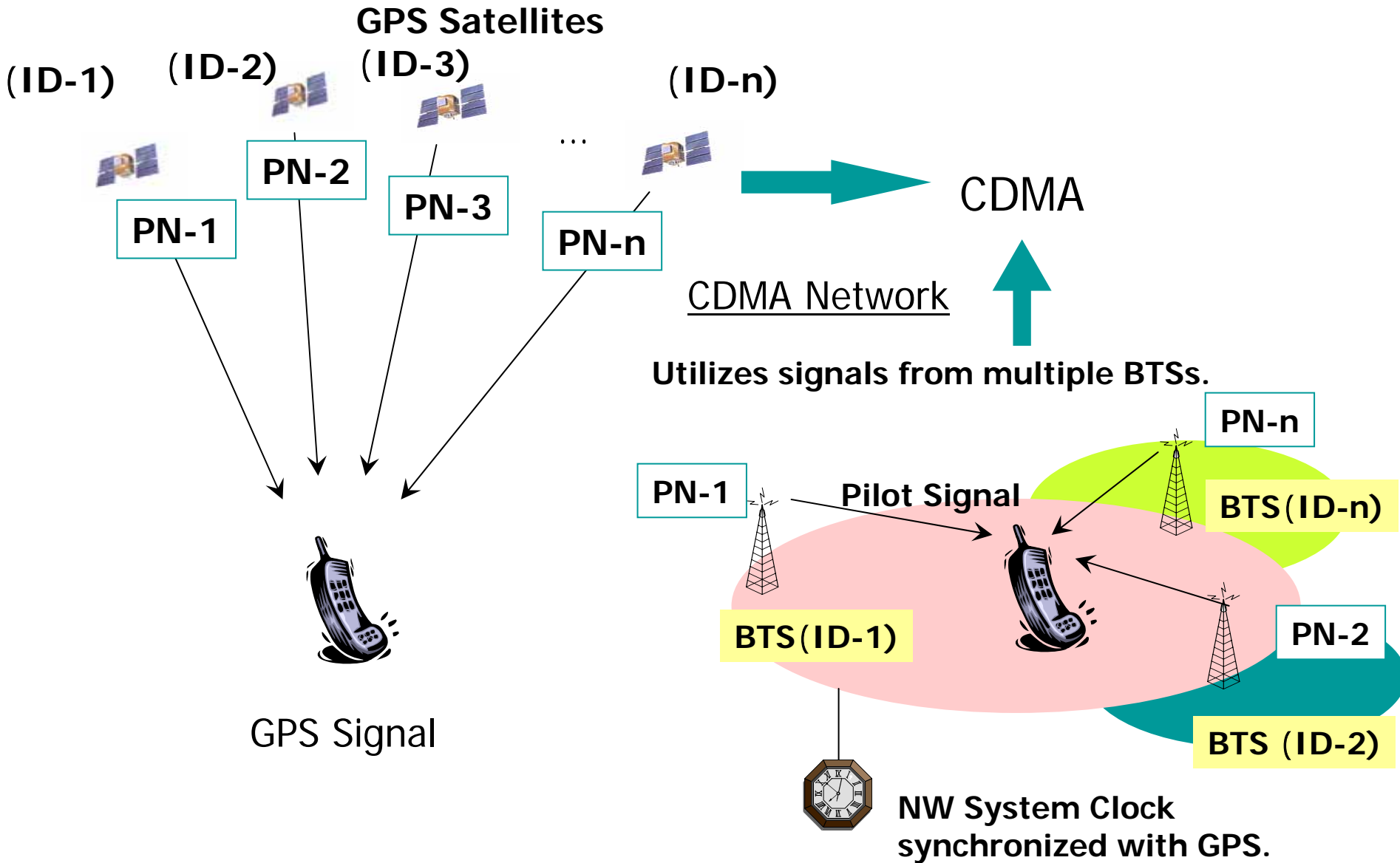
small

big

Data Size

2.1 Location Based Services

GPS and CDMA Network



gpsOne™ Position Fix Types

Accuracy

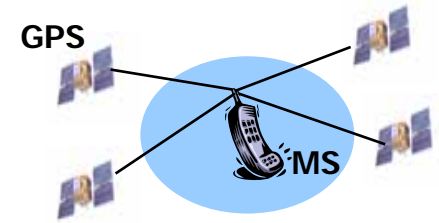


More
Precise



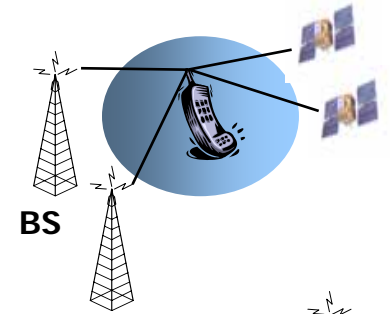
1. GPS Fix ... open sky

- Requires GPS measurements 4.



2. Hybrid FIX ... partial view of sky

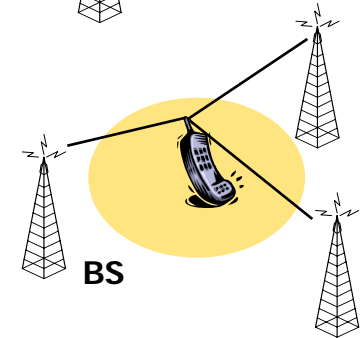
- Activated when GPS Fix fails.
- CDMA pilot phase can be used as virtual GPS measurements.



3. AFLT FIX ... indoors

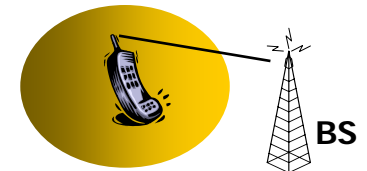
- Used if Hybrid Fix fails when no GPS measurement is available.
- Requires CDMA pilot phase measurements

3



4. Cell Sector Center FIX ... indoors

If CDMA pilot phase measurements < 3 , cell sector center is used as the location.



Examples of Location Based Services (LBS)

Navigation

 EZナビウォーク

EZ 助手席ナビ

Find out one's own location

 EZナビウォーク

EZ 助手席ナビ

Track other's location



GPSMAP

Security, emergency

安心ナビ

HELPNET

コココムEZ



EZ Navi Walk

GPS-based navigation service for pedestrians



Voice guidance 1
"Start Voice Navigation"

Map is automatically scrolled.

Real time pinpointing the user's location.

Map is always heading toward the user's direction.



Voice guidance 3
"You have reached the destination ."



Voice guidance 2
"To the left, 50m ahead"



START

GOAL

EZ “Josyu-seki” Navi – Navigation for a Navigator (1)

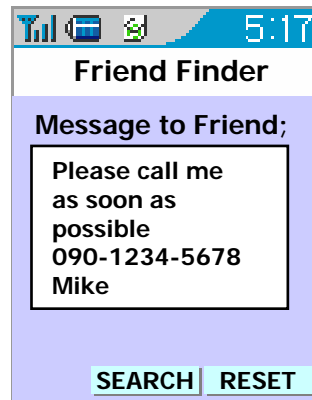


- EZ “Josyu-seki” (a seat next to a driver’s seat) Navi helps a navigator to support a driver in showing the way.
- Provides verbal navigation guide to the destination, traffic information, parking space availability info. etc.



Features include:

- Identify the location of lost “keitai” by PC.
- Show where your friend stays now, etc.
- Forward a message to your friend.

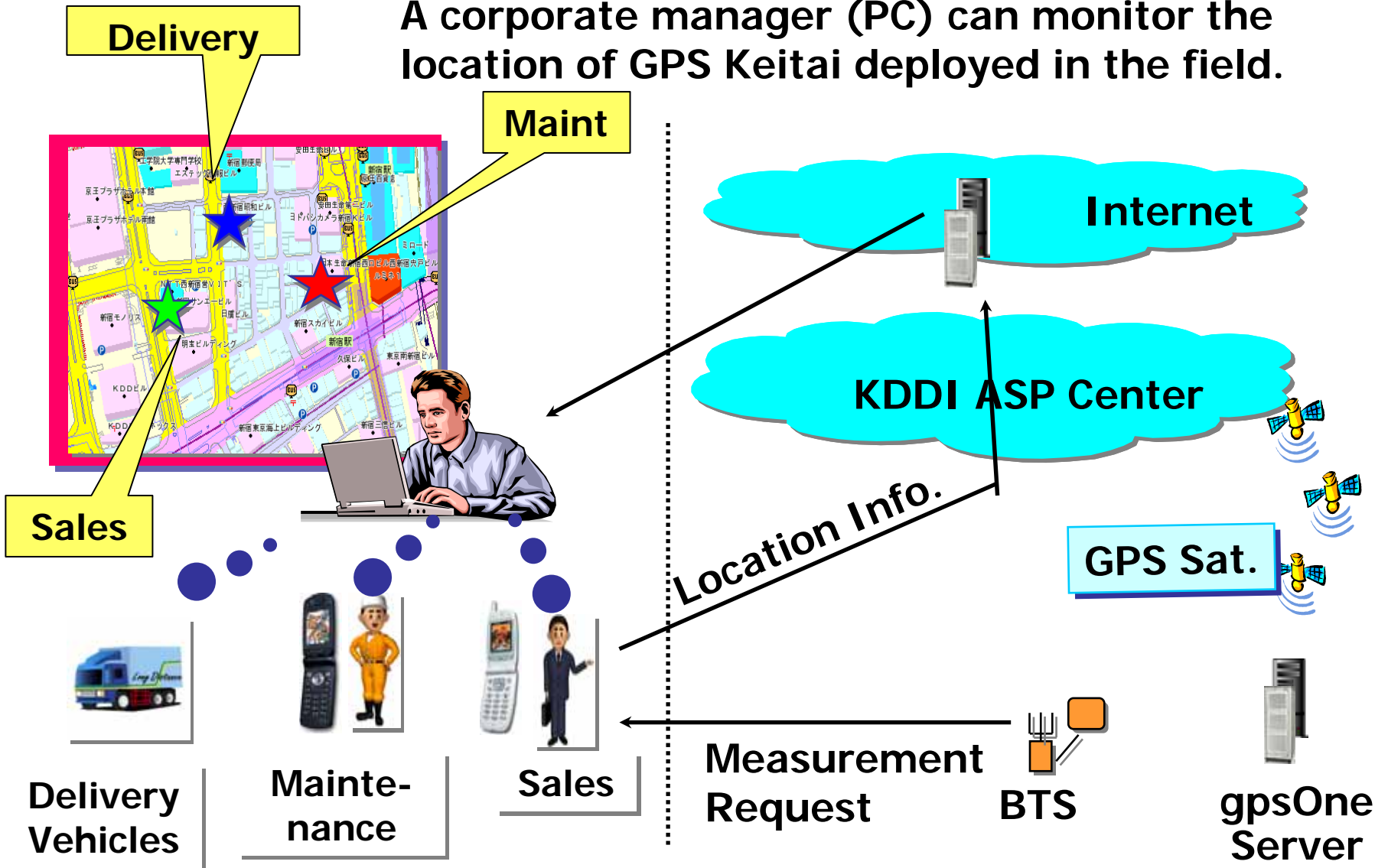


gpsOne-processed
Position to indicate
'Your friend stays
here'

© Shobunsha Publications, Inc.

GPSMAP

A corporate manager (PC) can monitor the location of GPS Keitai deployed in the field.



Gaming

❑ Treasure Hunt or "*Takara sagashi*"

Search treasures (= Cards) hidden somewhere in Japan using GPS "Keitai".

❑ Play tag or "*Onigokko*"

Players may trace other players' location by GPS "Keitai".

"Anshin" (Safe) Navi Navigation for parents to monitor Kid's location (1)



安心ナビ エリア通知

お子さまの居場所を、メールで自動的にお知らせ



Parents will be informed
-if a child approaches the specified
area
or
-of the location at specified time.

Navigation for parents to monitor Kid’s location (2)

安心ナビ 位置確認

お子さまの居場所をケータイで探せる

Parents can find out kid’s location by Keitai,

位置確認メール

if the kid acknowledges the location info. request mail from the parent.

お子さまが同意すると確認できる

アドレス帳に登録しているお子さまにメッセージを付けてメールを送信。お子さまが位置送信に同意すると、位置情報が通知され、居場所がわかります。

いつでも位置確認

or even without the kid’s consent.

お子さまをいつでも確認できる

お子さまが [位置確認メール] に気付かない時など。事前のカンタン設定だけで、いつでも居場所を確認できます。

2.2 “Chaku-uta® ” and Evolution of Music Related Services

Music Download Deployment

* Digital rights management is essential for service expansion

**Full Music Download Service*
launched November 2004**



**Evolution of the Vocal Music Ring Tone
as a Music Download Service**

*Vocal Music
Ring Tone*

*Ring Tone
Movie*

**Melody
Ring Tone**

Ring Tone



**Evolution of the Vocal Music Ring Tone
as a part of the Ring Tone Evolution**

Full Music Download or "Chaku-uta" full

Digital rights management is essential for service expansion



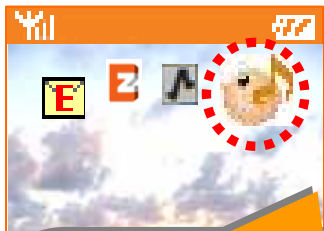
D/L full music by air
Easier than i-pod

Excellent sound quality
of CD level, w/ jacket
photo, word, etc.



EZ Music Download 

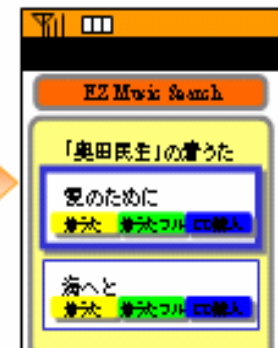
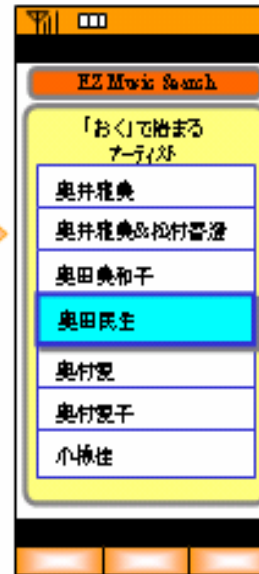
 EZ「着うたフル」™



Accessible
from new
music portal
"EZ music"



- ▶ Search by song/artist
- ▶ New song info
- ▶ Top D/L ranking
- ▶ etc.



- ▶ Full music D/L
- ▶ Partial music D/L
- ▶ CD net urchase

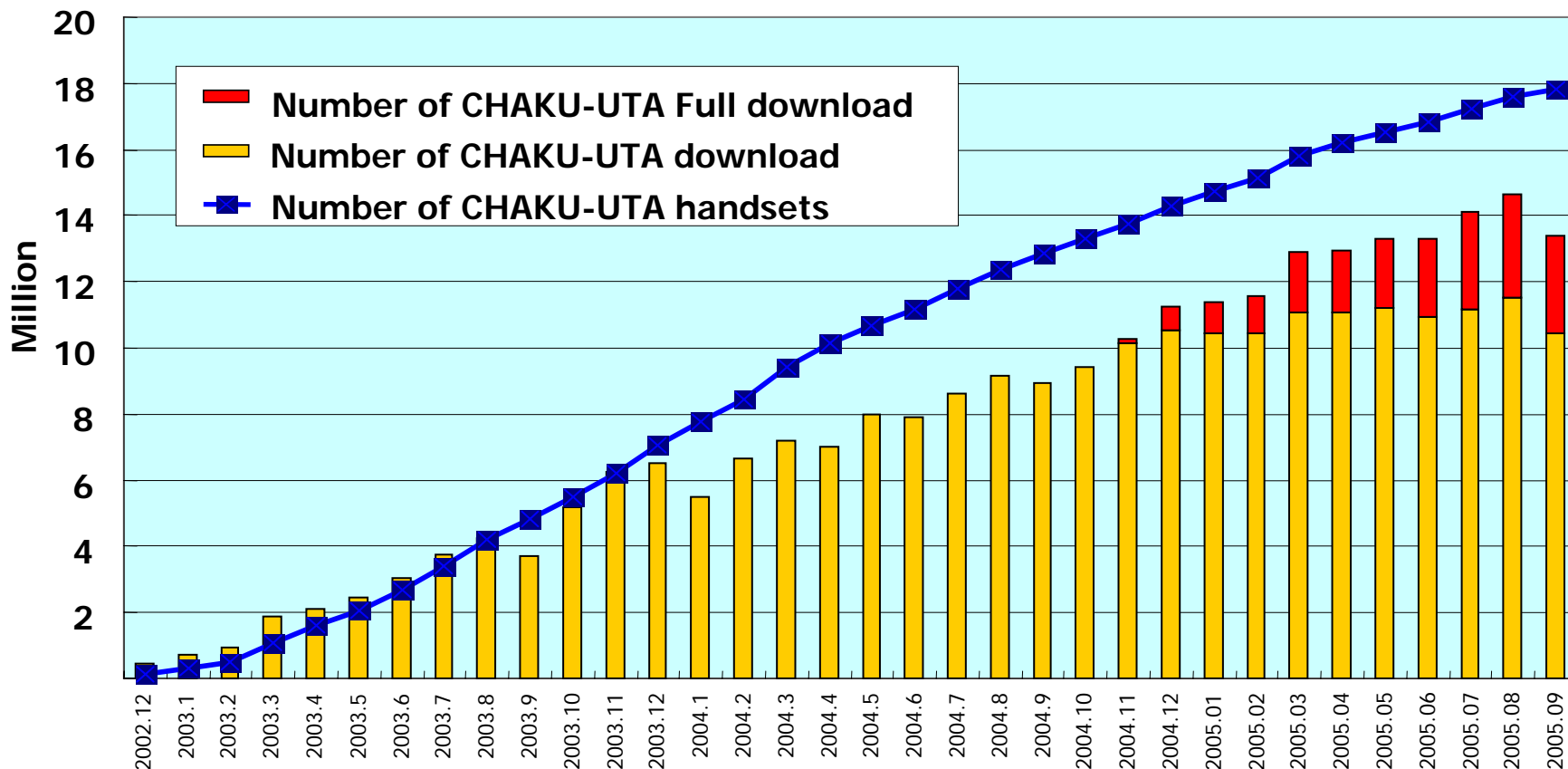
"Chaku-uta" and "Chaku-uta Full" are trademark and registered trademark of Sony Music Entertainment.

Growth of "CHAKU-UTA" & "CHAKU-UTA Full"

-280 thousand "CHAKU-UTA" available from 247 sites. (Apr. '05)
 -60 thousand "CHAKU-UTA Full" available from 46 sites. (Sept. '05)

Cumulative Downloads

"CHAKU-UTA" Over 200M, Apr. 2005, "CHAKU-UTA Full" Over 20M, Sep. 2005



“Kikasete kensaku” or Song Search

聴かせて検索

Step 1



Activate Search Engine

Step 2



Input a song by letting “Keitai” listen to the music

Step 3



Display search result

Step 4



Step 5

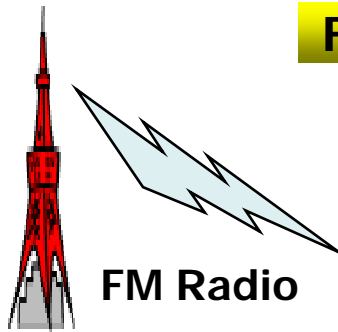


Download “Chaku-uta” or purchase CD

2.3 Combination of “Keitai” and Broadcast

Collaboration with FM Radio by "FM Keitai"

Create New Business Model by collaboration between Analog FM Radio and "Keitai". Listeners can obtain Program-related information on air on the spot they are listening.



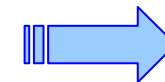
FM Keitai



Interactive Ads. by the same sponsor as the Program on Air.

While listening to FM Radio, a listener can

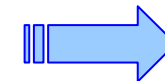
- Exchange E-mails
- Access EZ Web
- Obtain Program Info. on air
- Send a Message or Request to the Program.



One Click !



Connect to the Web Site of FM Station



Obtain CHAKU-UTA from air

Example of Harmonization with Broadcasting Service (EPG)

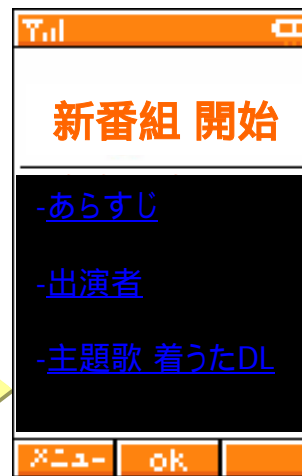
Terrestrial Carrier, BS, CS, EPG

TV, VCR, DVDR Remote controller

■ Cooperation with TV Broadcasting by using EPG

Application Remote Controller EZ

Information Window
Broadcast station uses this window to inform new programs or ads. of events, and so on.



• Information or Original contents relatives to the program
(ex. Chaku-uta, Chaku-movie, etc.)

35 broadcasting stations use this window

(Jan.2005)

Information Window

Attract audience to mobile services

Example of Harmonization with Broadcasting Service (Emergency Report)

Provide users with Emergency Report.

1. Register the area on web site.



[Standby screen]

2. In case of emergency, jump to broadcasting contents automatically.



地震速報

8日04時17分頃地震がありました。
震源地は茨城県南部で震源の深さは約50km、マグニチュードは4.8と推定されます。

戻る メニュー 詳細

Click button

3. Jump to the web site providing information in the area.



地震速報

震度3 千葉県
震度2 関宿町東宝珠花
津波警報 柏市旭町
 佐原市佐XXXX

千葉市役所 : 0295-65-7890

戻る メニュー

Handset with Terrestrial Digital TV Receiver



- Terrestrial Digital TV broadcast for mobile terminals (ISDB-T 1 segment) will be ready for service April, 2006.
- A prototype handset was exhibited at CEATEC JAPAN 2005, October.
- Wide 16:9 display.
- TV & Data Broadcast Receiver.
- Interactive capability using cellular communication capability.
- A variety of services will be offered by combining broadcast and communication.

2.4 Mobile Commerce

Examples of Mobile Commerce



Real goods/products

au **R**ecords

CD / DVD shop

au **A**uctions

Mobile auction site

au **auでオカイモJ**

Shopping

Mobile shopping
site / portal

Payment
option

Phone Bill

Credit Card

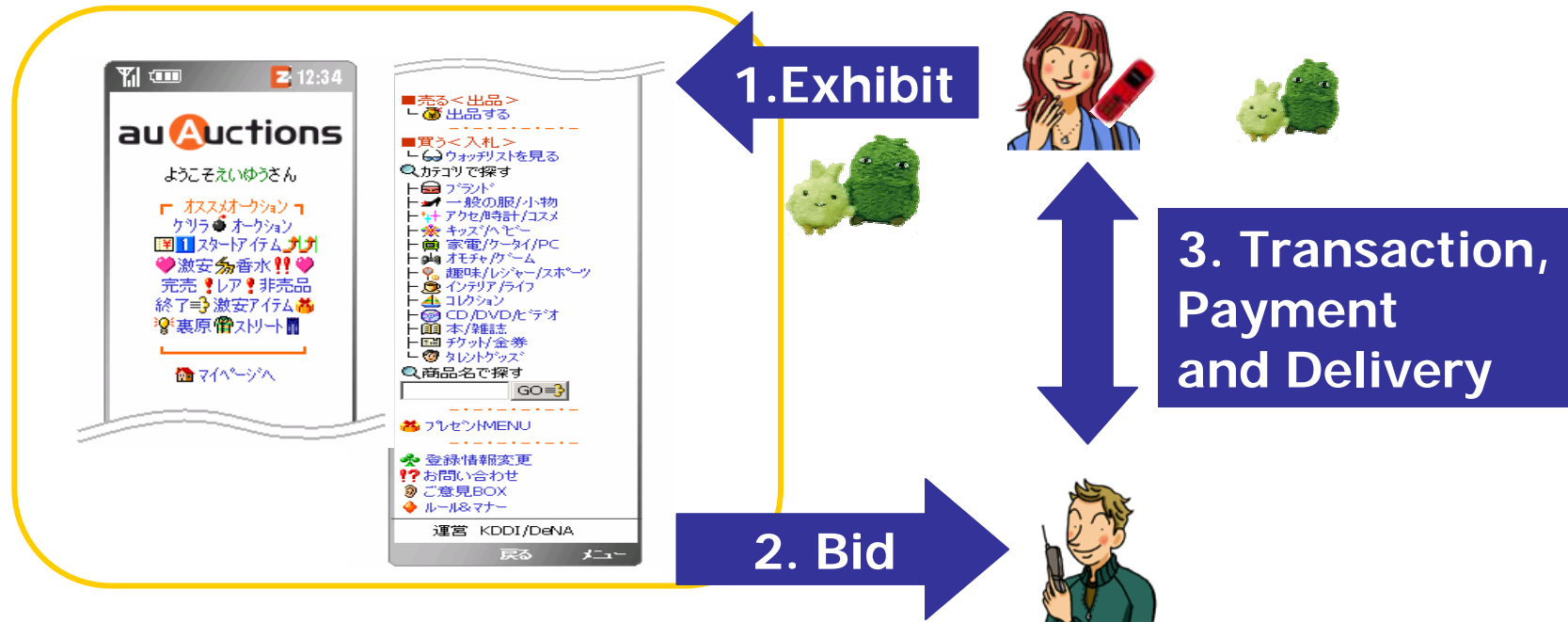
Pay at
Delivery

Examples of Mobile Commerce

au Auctions

An user may participate in an auction using “Keitai” any time, anywhere.

Enhanced convenience by Built-in Camera and BREW applications.



Handsets with Contactless IC Card

Contactless IC Card (Felica ISO/IEC 18092) and R-UIM equipped

- ✓ Full Music Download
- ✓ 3D Surrounding Stereo Speakers
- ✓ Music Download from PC via USB
- ✓ 1.3 M Pixel Camera
- ✓ QVGA display
- ✓ 42 MB & 256 MB external memory
- ✓ PC site viewer & PC document viewer

- ✓ Full Music Download
- ✓ 3D Surrounding Stereo Speakers
- ✓ 1.3 M Pixel Camera
- ✓ QVGA display
- ✓ 45 MB & 2 GB external memory
- ✓ IrDA
- ✓ Style-up panels

W32H



W32S

Felica is a registered trademark of Sony Corporation.

The applications of contactless IC card



交通機関のご利用もケータイでOK!
長い行列を横目にチケットの発券や
搭乗手続きも即完了。行動派のあなたを
スマートにバックアップ。



コンビニやスーパーで手軽にお買い物!
日常の買い物に、休日のショッピングに、
店頭でケータイをかざすだけで
お会計も簡単・スピーディー。



The applications of contactless IC card include:

- Passenger ticket, bus fares
- Shopping using Electronic money
- Employee ID, Student ID



クレジットカードとしての
ご利用もOK!



ポイントカードとしておトクに活用!
肝心な時にポイントカードが見当たらない!
なんてこともなし。カードでかさばっていた
お財布もスッキリ。



ネットショッピングの代金支払いも
手間いらず!



会員証としてもいつでも利用可能。
おトクなサービスも受けられる!



会員専用のサービスも
お楽しみいただけます!



チケットの購入もカンタン!

“Osaifu Keitai” will add convenience to a variety of use cases. Example: going to a concert.



2.5 Other Applications

PC Site Viewer

PC Site Viewer gives users an access to web sites typically developed for PC.



WEB site image on PC



Image of PC Site Viewer

The PC Site Viewer is provided by the Internet browser "Opera Browser," made by Opera Software ASA (based in Oslo, Norway; CEO: Jon S. von Tetzchner).

Digital-Book Service

“Digital-Book” service spreading for PDA, is also available for “au” mobile.

Merit

Digital-Book service is provided by EZ channel. Digital-book can be enjoyed also in off-line mode.

In the Past

It was difficult to receive heavy contents (hundreds to Mega bytes), due to low transmission speed and expensive rate.

1. Provided by EZ Channel

Contents include stories, cartoons etc, typically heavy in size.

Advertising media of “Digital-Book” service

2. On demand basis

Heavy size data download made possible by EV-DO.

Typical data size; a comic book : 600-800 KB, a novel : 300 – 500KB

Various menu including comics, magazines, etc. tailored for target users.

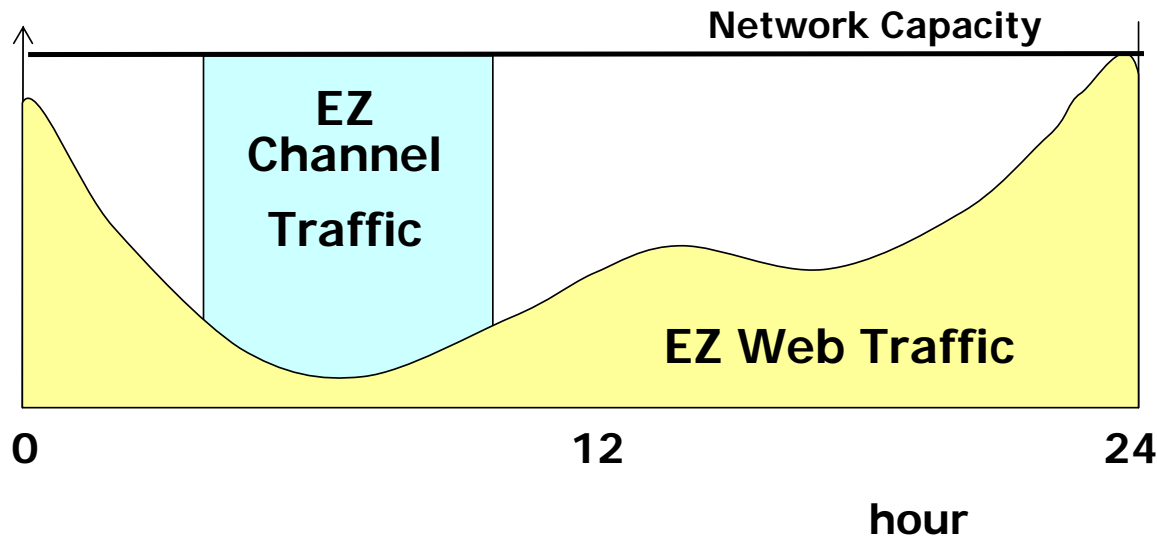
Program Distribution Service

EZ Channel :Multimedia program distribution service specialized for WIN

- Select and register a favorite program on EZweb, and multimedia contents (up to 3MB, compliant with SMIL technology) will be downloaded automatically.
- Contents are updated once a day, once a week, etc.

Efficient Utilization of Facility and Spectrum.

Amount of Data Traffic



Program Distribution Service

Contents Examples



Wide variety of channels

☑ Music / Movie	7
☑ E-book / E-comic	5
☑ Sports news	4
☑ TV / Entertainment	7
☑ News / Weather / Traffic info.	2
☑ Hobby / E-learning / Gourmet	3

28 programs as of Jan.17, 2005

3. Summary

What is “Keitai” like in the future?

Now, "Keitai" is recognized as a social infrastructure, and becomes a part of culture.

- Requirement for Mobile depends on lifestyles and social environment, culture of each region.

- "Keitai" in Japan reflects Japanese Culture.

- "Keitai" will bear more social responsibility (Security, Reliability, etc)

Everything on "Keitai"

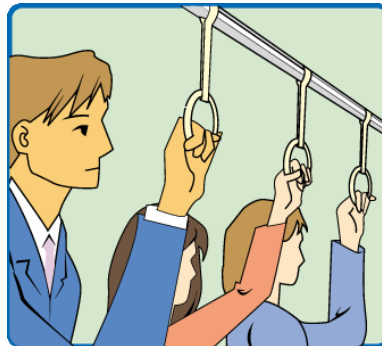
– We need more for happier life

Japan - Constraint on living environment

- ❑ Limited Housing Space
- ❑ Commuting by Public Transportation (Trains, Bus etc.)
- ❑ Come home late, spending little time at home

❑ "Everything on "Keitai"" is surely convenient

Home is home, however small.



Everything on "Keitai"

– We need more for happier life

Whereas in US and Europe...

Tendency to enjoy an affluent, exuberant life

- ❑ Spacious, ample Housing Space
- ❑ Commuting by a Private Car
- ❑ Spend more time in a private Environment
- ❑ Enjoy Movies and Music by "Home Theater" or Car Audio



- ❑ Mobiles may be used mainly for communication (telephone and short messages)



Everything on "Keitai"

- We need more for happier life

Objective: Enjoy "broadband" whenever and wherever possible.

- "Keitai" should play a more important role in a "non-telecommunication" domain in order to realize this objective.
- Independent of the technological progress from 3G to 3.5/4G, this trend will be accelerated.
- From mere telecommunication tools, "Keitai" will become essential existence something like air and water.

Two Approaches: "Keitai" as a

Personal Device:
Everything on "Keitai".

and/or

Personal Gateway:
"Keitai" as a
Communication Hub.

“Everything on Keitai” Mobile as a Personal Device

“Everything on Keitai” will provide human life with various useful features.



Each device function will be assembled.



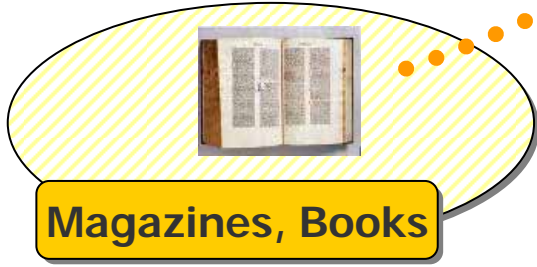
Wallet, Card, Keys, etc.



Car Navigation Sys.



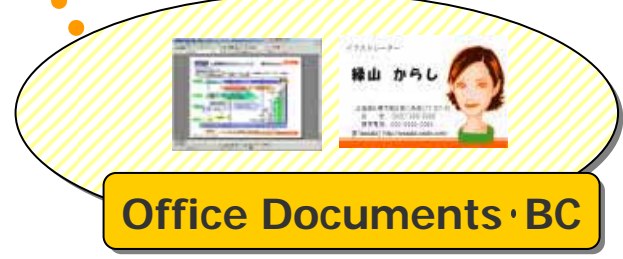
Media Player · Camera



Magazines, Books

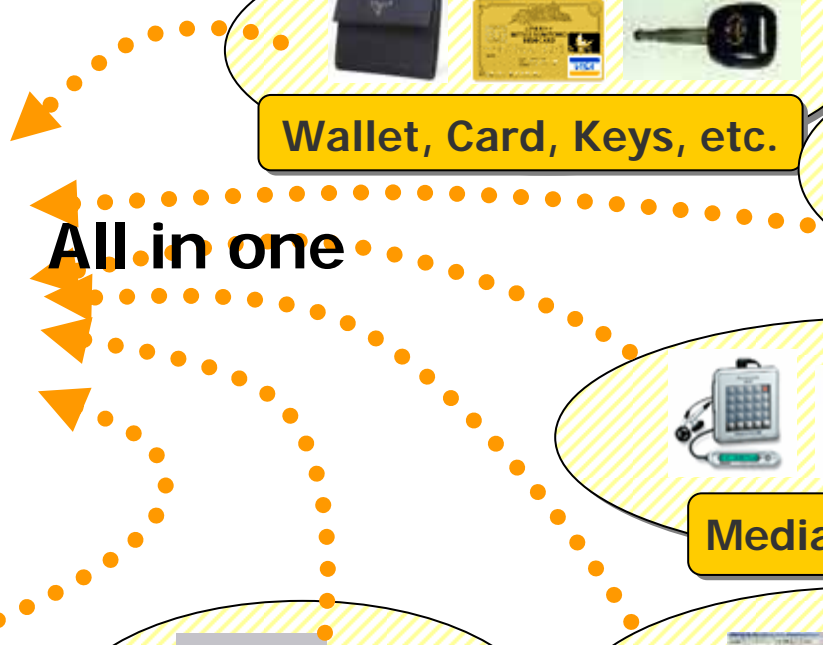


TV/Radio



Office Documents · BC

All in one



"Keitai" as a Personal Gateway

Information interaction between local network and the external devices will be realized by HUB function of Mobile.



Ubiquitous Solution Company



Please visit our website @

<http://www.kddi.com/>