

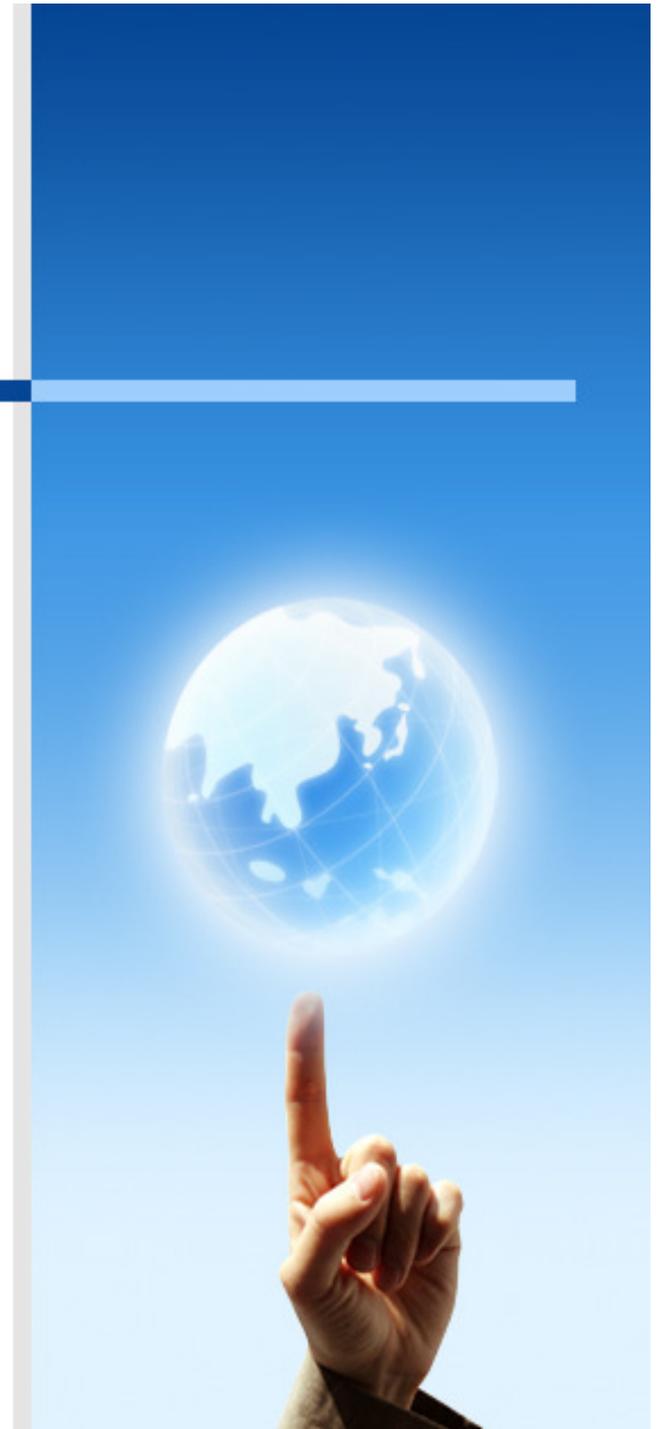
# M – Financial Service

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2012. 04. 18

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National Information Society Agency, Korea



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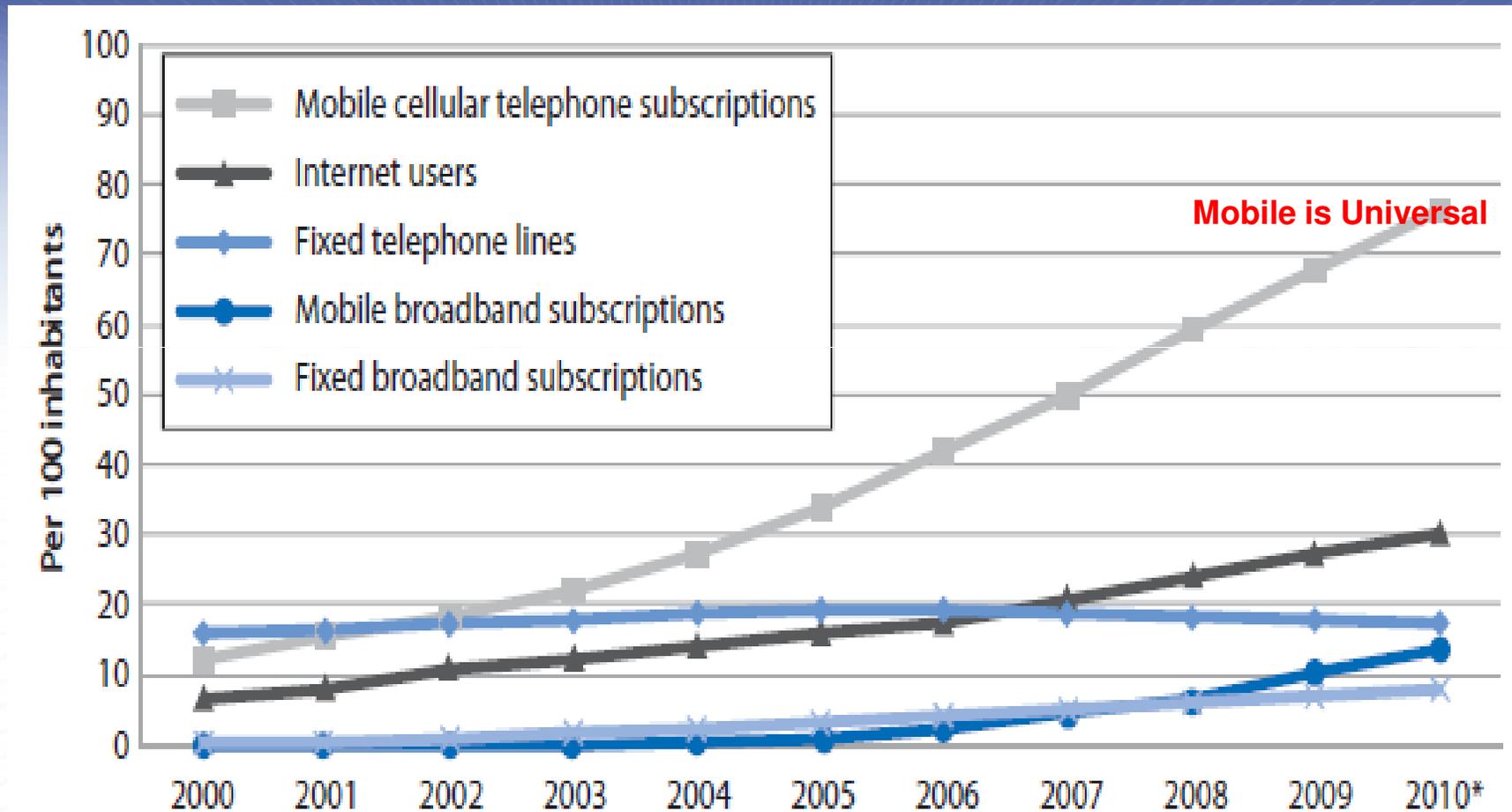
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# I. Introduction

# I.1 Paradigm Shift from e- to m-Service

## □ Subscription of Mobile Phone

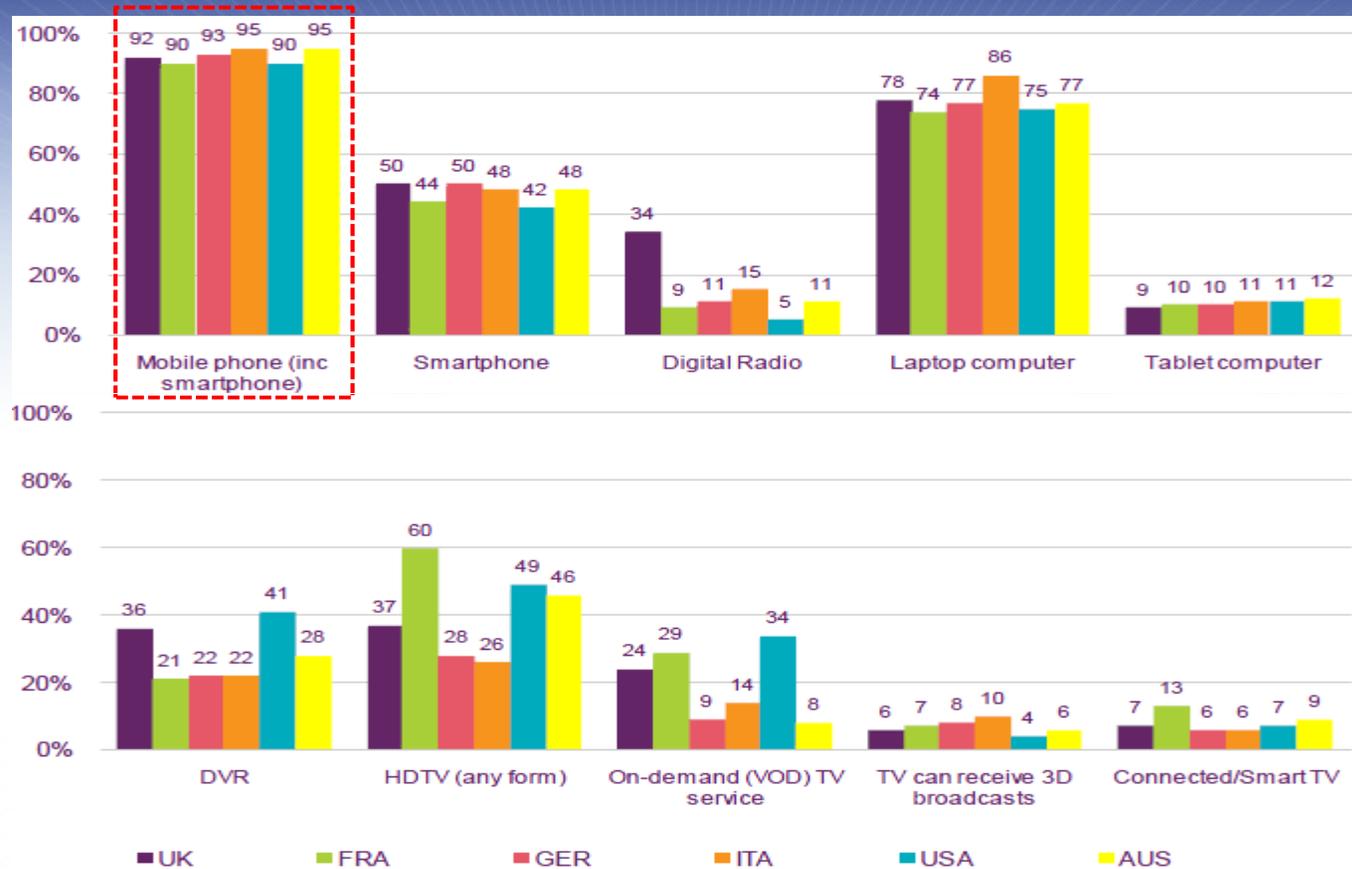


\* Estimates

Source : OECD & ITU, "M-Government", 2012

# I.1 Paradigm Shift from e- to m-Service

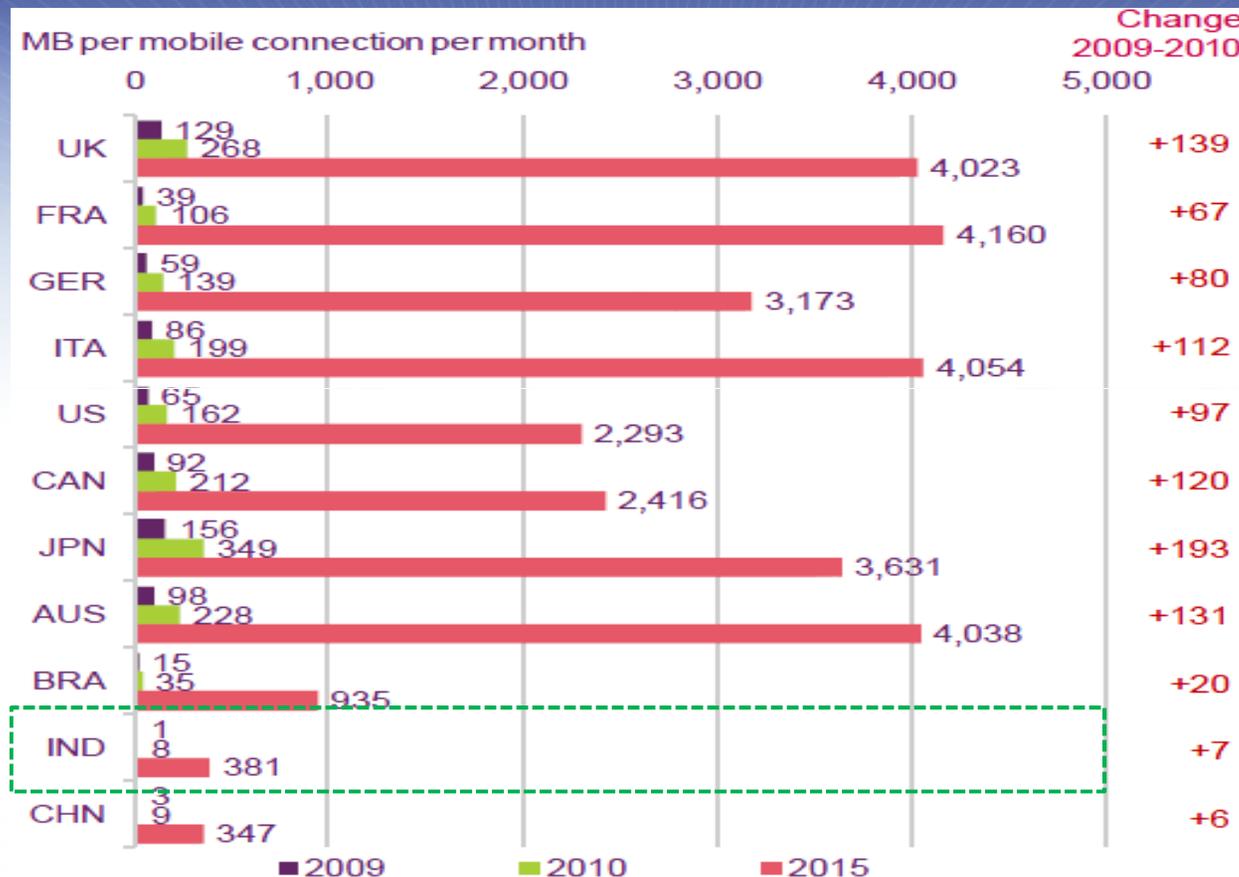
## Ownership and use of devices



Source : Ofcom consumer research, Oct. 2011

# I.1 Paradigm Shift from e- to m-Service

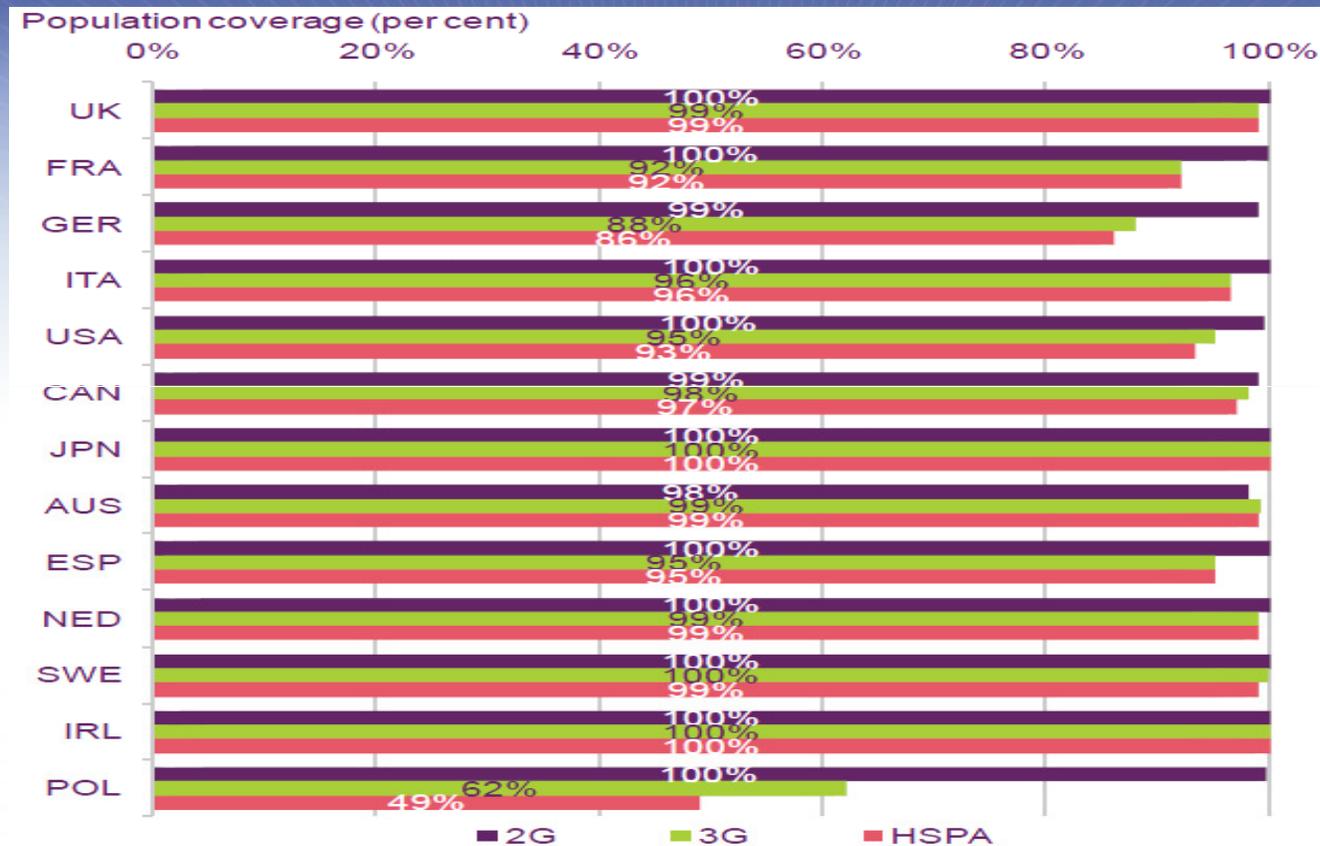
## □ Mobile Data Traffic : 2009, 2010 and 2015



Source : Cisco Systems' Visual Networking Index

# I.1 Paradigm Shift from e- to m-Service

## □ Mobile availability for the large operators by technology : 2010

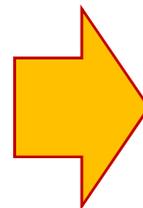


Source : IDATE and Ofcom, " Oct. 2011

# I.1 Paradigm Shift from e- to m-Service

- ① Seamless connectivity to M-Services, anywhere anytime
- ② Communicate with citizens using SNS all the time
- ③ Innovations in working process

| Area               | E-Service[As-is] |
|--------------------|------------------|
| <b>Terminal</b>    | ·PC based        |
| <b>Infra</b>       | ·Wired Network   |
| <b>Service</b>     | ·PC based WEB    |
| <b>Users</b>       | ·PC users        |
| <b>Place, Time</b> | ·Restricted      |
| <b>Direction</b>   | ·Unidirectional  |



| M-Service (To-Be)                   |
|-------------------------------------|
| · <b>Smart phone, Smart pad etc</b> |
| · Wireless Network                  |
| · Seamless Service, mobile web/app  |
| · Smart phone/pad, Smart TV Users   |
| · <b>Anywhere, Anytime</b>          |
| · <b>Interactive (Open, Share)</b>  |

# I.2 Mobile Status of Korea

## □ Mobile Subscription

- Over 80% of households subscribe the broadband Internet ('09)
- 78% of citizen use internet (May, 2010)

2010 Census (ended by 15 Nov. 2010)

39.7% of households(7.5 millions) participated the Census online  
=> Reduce the budget(\$18 millions)

- 98% of citizen use mobile phone (Sep, 2010)
- Despite late introduction of i-Phone (Nov, '09)
- 10million(Mar.2011) -> 20 million Smartphone users (Dec, 2011)

Very high demand for mobile services

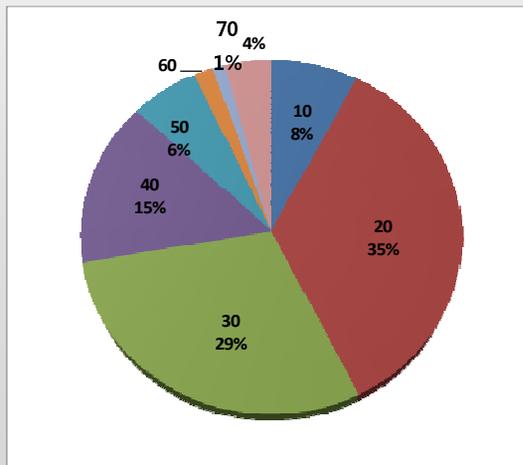
# I.2 Mobile Status of Korea

## more Statistics

- Ages : 20<sup>th</sup> and 30<sup>th</sup> are majority of Users – 20<sup>th</sup> (35%) 30<sup>th</sup> (29%)
- OS : Android(60%), IOS(27%), MS-Windows(11%)
- **Mobile Traffic** : 449TB(Jan. 2010)→5,463TB(Jan. 2011, 11 Times ↑)  
10,000TB(Jun. 2011)

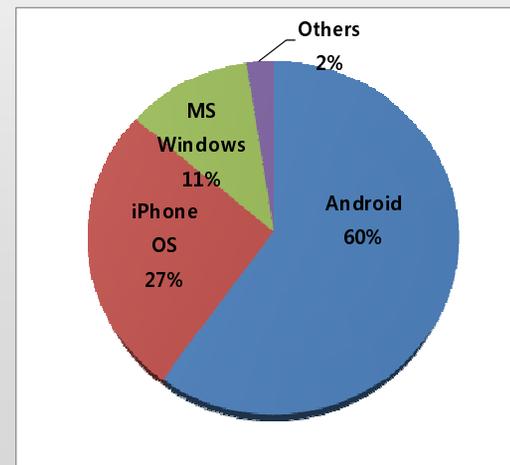
※ Smartphone traffic constitute about 91% in mobile traffic(4,985TB)

[ Ages ]

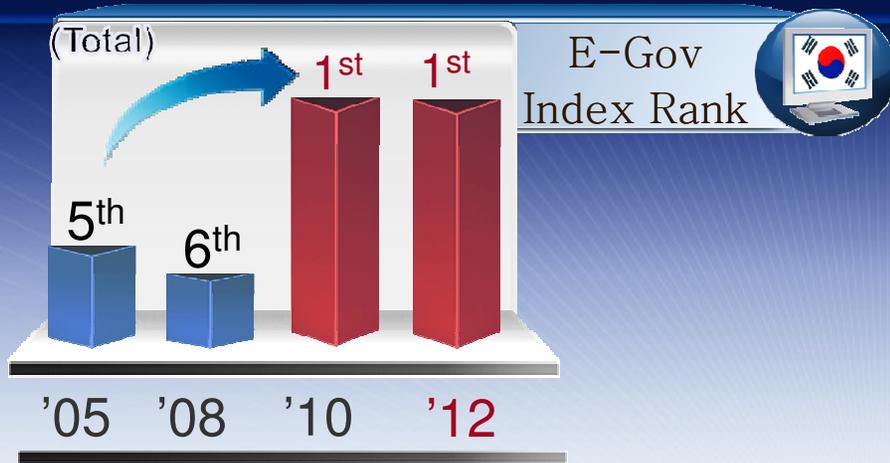


Source : KCC, Mar. 2011

[ Smart Phone OS ]



# I.2 Mobile Status of Korea



| E-Gov Development Index(1 <sup>st</sup> ) |   | On-Line Participation Index(1 <sup>st</sup> )   |   |
|---|---|---|---|
| <b>Service (1<sup>st</sup>)</b>           | Policy Information, Integrated Civil Services, Tax, Health, etc | <b>On-Line Info SVC (4<sup>th</sup>)</b>        | Provide public policy information on on-line            |
| <b>Infrastructure (7<sup>th</sup>)</b>    | Internet Users, Penetration rate of PC/Cell Phones, etc         | <b>On-Line Participat ion (1<sup>st</sup>)</b>  | Online policy participation and discussion in real-time |
| <b>Human Capital (6<sup>th</sup>)</b>     | Literacy Rate, Employment Rate                                  | <b>On-Line Policy Decision (1<sup>st</sup>)</b> | Policy decision through on-line                         |

Source : United Nations, " E-Government survey 2012", 2012

## I.2 Mobile Status of Korea

| Area  |                                     | 2008                    | 2010                    | 2012                        |
|---|-------------------------------------|-------------------------|-------------------------|-----------------------------|
| UN Global<br>e-<br>Governm<br>ent<br>Survey<br>2012 | e-Government development<br>Index   | 6 <sup>th</sup>         | 1 <sup>st</sup>         | <b>1st</b>                  |
|   | Online Service                      | 0.82(6 <sup>th</sup> )  | 1.00(1 <sup>st</sup> )  | <b>1.00(1<sup>st</sup>)</b> |
|   | Telecommunication<br>Infrastructure | 0.69(10 <sup>th</sup> ) | 0.64(13 <sup>th</sup> ) | <b>0.84(7<sup>th</sup>)</b> |
|   | Human capital                       | 0.98(10 <sup>th</sup> ) | 0.99(7 <sup>th</sup> )  | <b>0.95(6<sup>th</sup>)</b> |
|   | E-Participation                     | 0.98(2 <sup>nd</sup> )  | 1.00(1 <sup>st</sup> )  | <b>1.00(1<sup>st</sup>)</b> |

- ▶ Achieved the top e-Government among 193 countries
- ▶ Ranked the 1<sup>st</sup> both in the e-Government development and the e-Participation index  
 E-Government development index : 1<sup>st</sup> → 1<sup>st</sup>, e-Participation Index : 1<sup>st</sup> → 1<sup>st</sup>
- ▶ Marked full scores on 'the Online service' part and 'the e-Participation' part

## I.2 Mobile Status of Korea

### Box I.6 World leader in e-government development 2012: Republic of Korea



The Government's main website has developed into an integrated portal where citizens can find almost every service they want, on both national and local level. The main government portal is a gateway to services through multiple channels, by theme and subjects; citizens can also have a customized channel by inputting their own age, gender and services of interest. Back-office integration across many departments brings together a powerful search engine offering advanced categorizing function, which can list results by websites, services, and news, including at the local level.

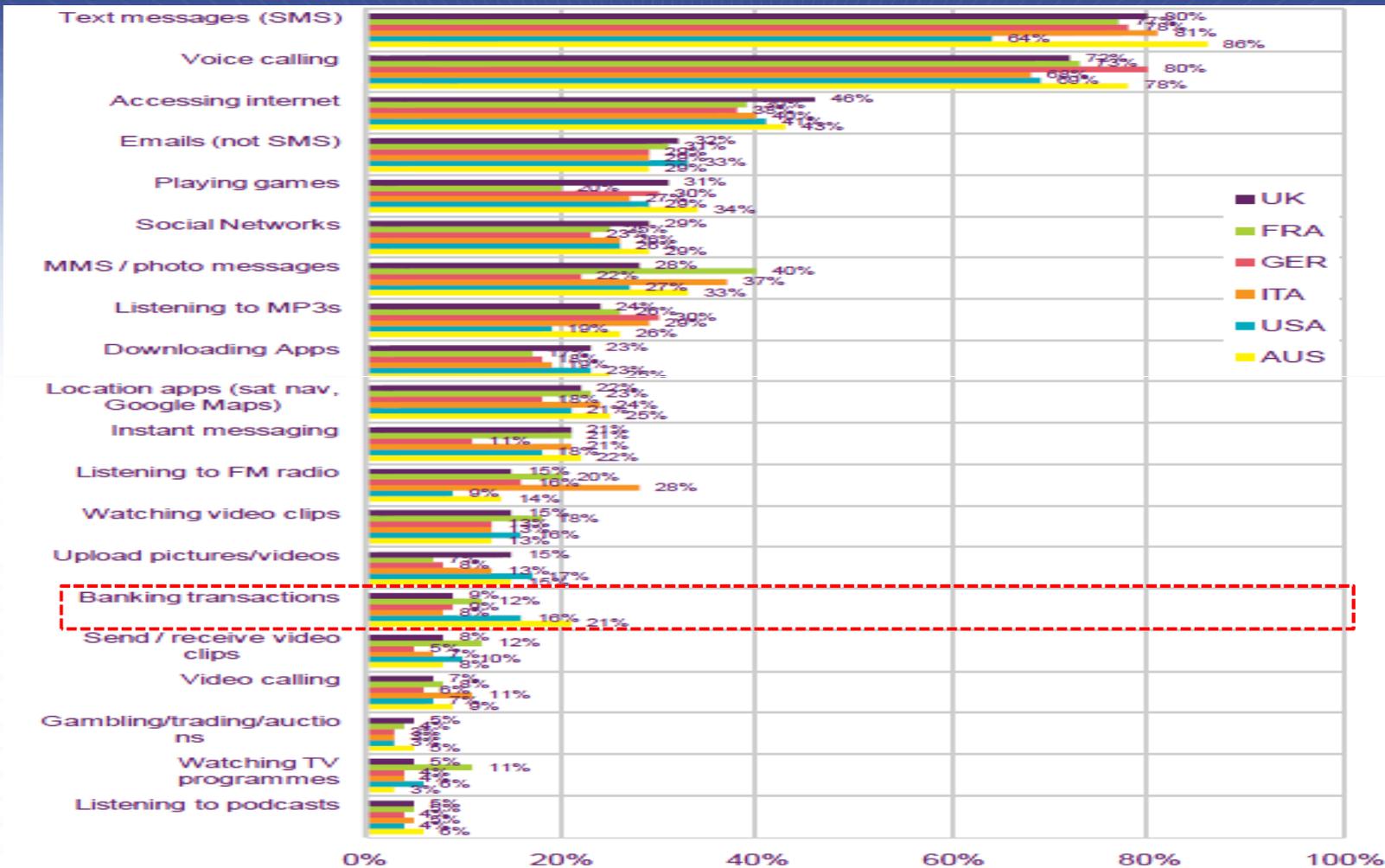
A key reason for continued leadership in world e-government progress is significant development and provision of downloadable mobile applications that are available from its national portal. The cross sector mobile apps for citizens are both iPhone and Android compatible including for e-Learning, which allows students to learn on their mobile phone in areas such as social studies, math and English. For employment opportunities, *Jobcast* provides information on availability of jobs in the Republic of Korea along with the relevant legislation governing labour. ♦

Source : United Nations, " E-Government survey 2012", 2012

## II. Market of the Financial Service

# II.1 Maturity of Mobile Market

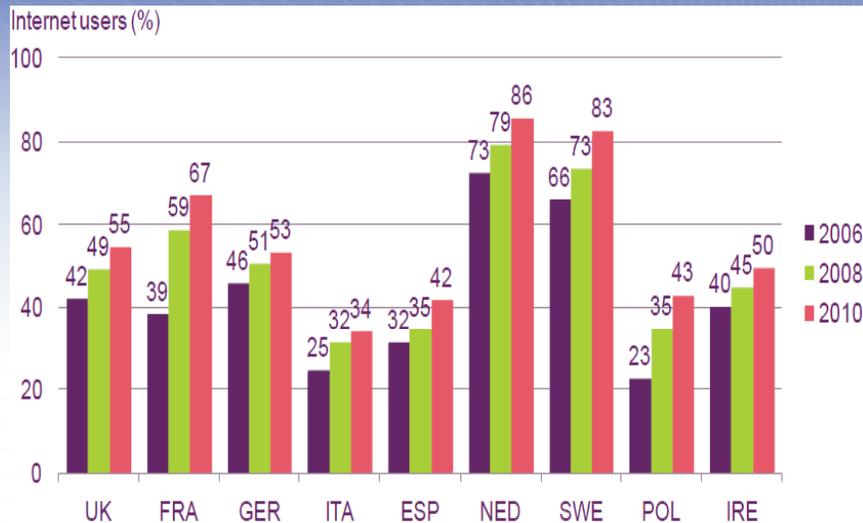
## □ Maturity of Mobile Market



Source : Ofcom, "International Communication Market Report 2011", Oct. 2011

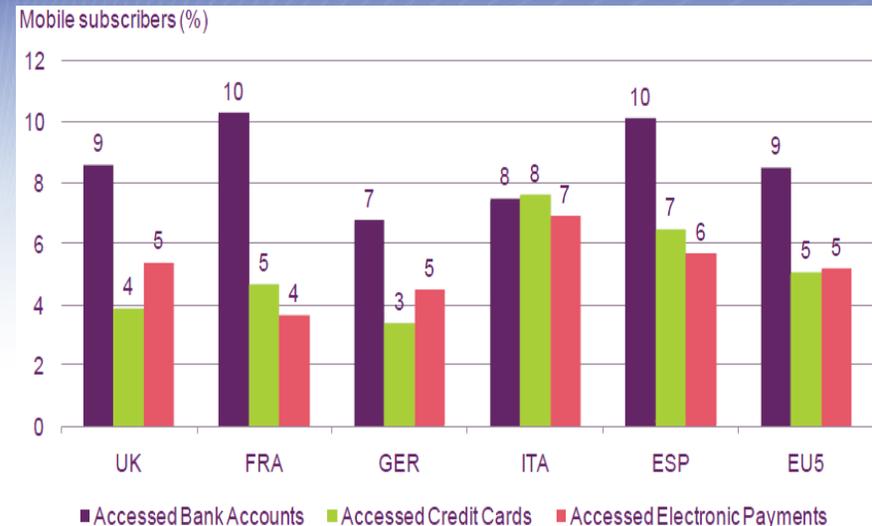
# II.1 Maturity of Mobile Market

< Internet users using online banking >



Source : Eurostat

< Use of online financial services on Mobile Phones >



Source : Ofcom, "International Communication Market Report 2011" Oct. 2011

- Less matured than online banking
- Mobile devices have more **ubiquity, mobility and convenience** of use
- In the near future, financial services on mobile devices will be expected to be rapidly expanded.

## II.2 Mobile Financial Market

### Global Mobile Transaction

|                           | 2011           | 2015                 | CAGR |
|---------------------------|----------------|----------------------|------|
| Global Mobile Transaction | \$ 241 billion | <b>\$ 1 trillion</b> | 56%  |
| NFC-enabled phone         | 7 million      | 203 million          | 208% |

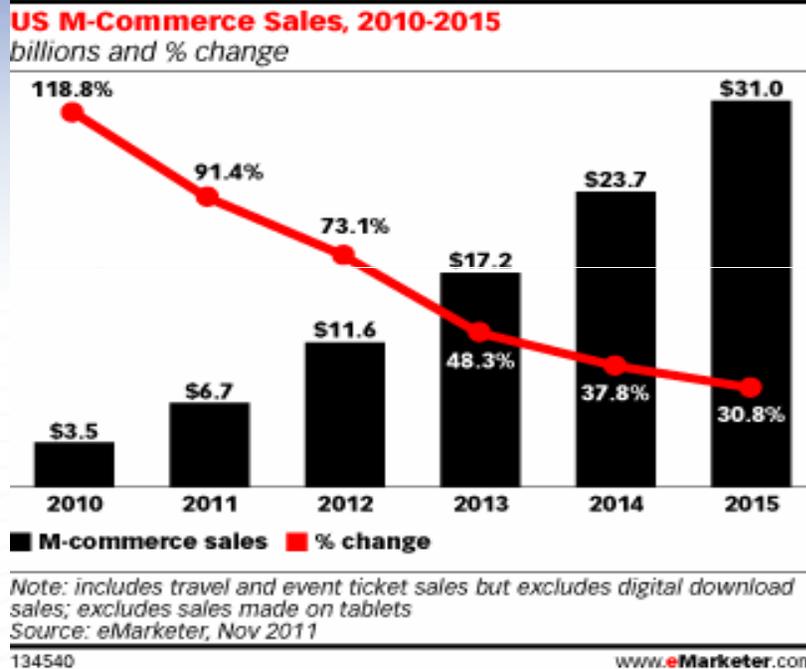
### Mobile Transaction by Region

|         | EMEA | North America | Asia-Pacific | Latin America |
|---------|------|---------------|--------------|---------------|
| % Ratio | 41%  | 35%           | 22 %         | 1 %           |

Source : Yankee Group, Jun. 29<sup>th</sup> 2011

# II.3 Status of Global Market

## □ USA



## US Mobile Buyers, 2010-2015

|                                     | 2010         | 2011         | 2012         | 2013         | 2014         | 2015         |
|-------------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|
| <b>Mobile buyers (millions)</b>     | 17.9         | 26.8         | 37.5         | 46.1         | 53.8         | 61.8         |
| —% of mobile phone users            | 8.0%         | 12.0%        | 16.5%        | 20.0%        | 23.0%        | 26.0%        |
| <b>Smartphone buyers (millions)</b> | 13.7         | 25.6         | 36.4         | 44.9         | 52.9         | 61.1         |
| —% of smartphone users              | 23.0%        | 29.0%        | 35.0%        | 38.5%        | 41.0%        | 42.5%        |
| <b>—% of mobile buyers</b>          | <b>77.8%</b> | <b>95.3%</b> | <b>97.0%</b> | <b>97.3%</b> | <b>98.3%</b> | <b>98.9%</b> |

Note: ages 14+

Source: eMarketer, Nov 2011

134542

[www.eMarketer.com](http://www.eMarketer.com)

## II.3 Status of Global Market

### □ England

#### < M-Market >

| 2011                | 2021                 | CAGR(2011~2016) |
|---------------------|----------------------|-----------------|
| <b>£1.3 billion</b> | <b>£19.3 billion</b> | <b>55%</b>      |

#### < Best items >

| items  | 2011         | 2021         |
|--|--------------|--------------|
| Supermarkets and Grocery Store                   | £300 million | £5 billion   |
| Electrical Goods                                 | £290 million | £2.1 billion |
| Personal Care<br>(hair care, beauty, dental etc) | £63 million  | £3.1 million |

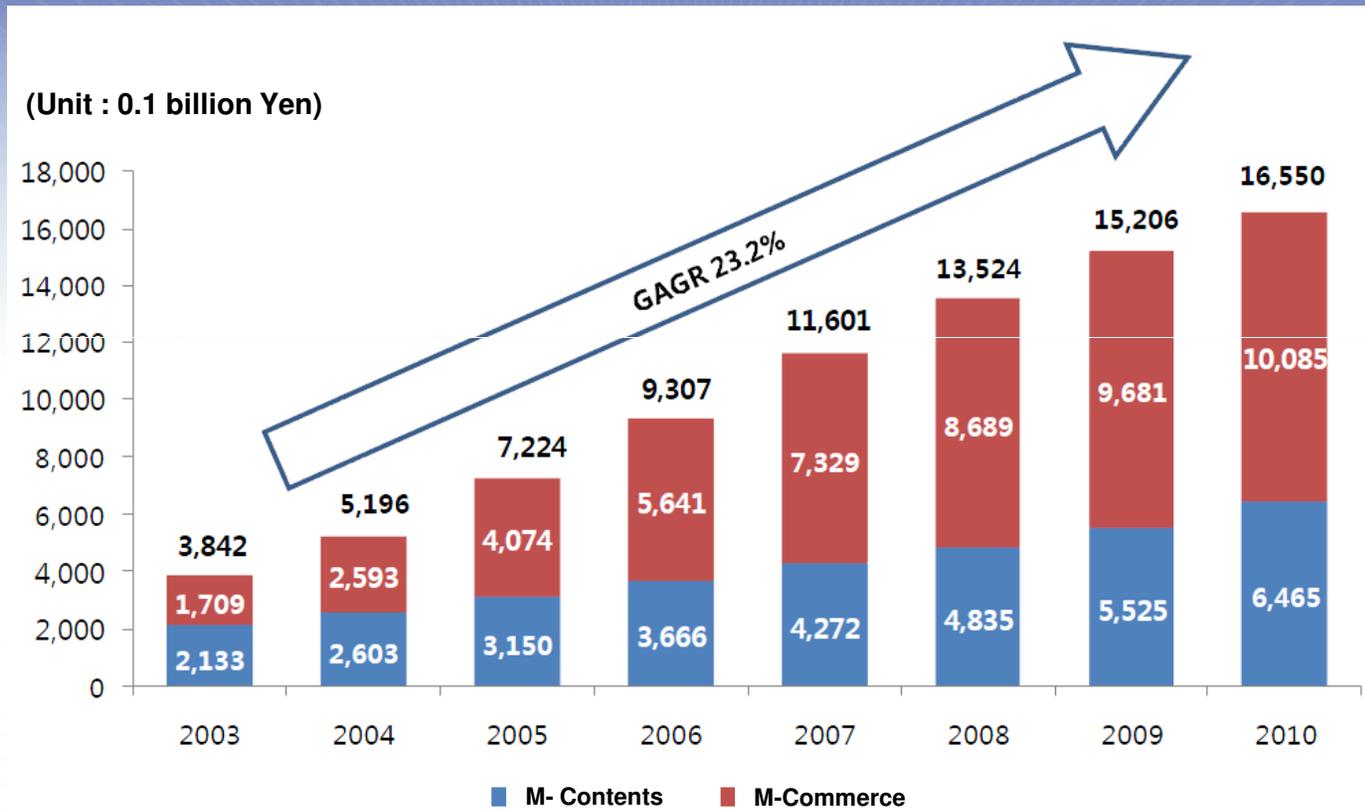
#### < Proportion of M-Market to Total Retail Market >

| 2011        | 2021        |
|-------------|-------------|
| <b>0.5%</b> | <b>4.9%</b> |

Source : Cellular-News, Oct. 17<sup>th</sup> 2011

# II.3 Status of Global Market

□ Japan



## II.4 Status of Korean Market

### □ Statistics on Mobile Banking Service I

#### < Users using Mobile Banking Service >

| 2010          | 2011   | % Change               |
|---------------|--|------------------------|
| 15.8 million* | <b>23.7 million*</b><br>( smart phone user : 10 million) | <b>50.6%</b><br>(297%) |

\* This Statistics includes duplicative

#### < Ratio of Mobile Banking to Internet Banking >

|                    | 2008 | 2009 | 2010  | 2011        |
|--------------------|------|------|-------|-------------|
| No. of Transaction | 4.7% | 6.5% | 11.2% | 19.7%       |
| Amounts            | 0.7% | 1.0% | 1.4%  | <b>2.0%</b> |

Source : The Bank of Korea, Feb. 7<sup>th</sup> 2012

# II.4 Status of Korean Market

## □ Statistics on Mobile Banking Service II

### < Daily Mobile Banking Service >

( unit : thousand)

|  |   | 2008    | 2009    | 2010              | 2011            |
|--|---|---------|---------|-------------------|-----------------|
| No. of Transaction<br>(% Change)             |   | 1,058   | 1,721   | 3,736             | <b>7,697</b>    |
|  |   | (47.8%) | (62.7%) | (117.1%)          | (106.0%)        |
| (Smart phone)                                |   |         | 19      | 907               | <b>5,910</b>    |
|  |   |         |         | <b>(4,673.7%)</b> | <b>(551.6%)</b> |
| <b>Enquiry Service</b><br>(% change)         |   | 899     | 1,462   | 3,334             | 6,931           |
|  |   | (50.3%) | (62.6%) | (128.0%)          | (107.9%)        |
| <b>Money Transfer</b>                        |   | 159     | 259     | 403               | 766             |
|  |   | (34.7%) | (62.9%) | (55.5%)           | (90.1%)         |
| Amounts(KR Won)<br>( 1 \$ ≒ 1,150 KR<br>Won) |   | 150.8 B | 266.2 B | 415.6 B           | 652.6 B         |
|  |   | (42.1%) | (76.5%) | (56.1%)           | (57.0%)         |
| (Smart Phone)                                |   |         | 0.0     | 46.7              | 372.7           |
|  | Source : The Bank of Korea, Feb. 6 <sup>th</sup> 2012 |         |         | (—)               | (698.1%)        |

## II.4 Status of Korea

### □ Statistics on Mobile Banking Service

#### < Users enrolled for Mobile banking >

(unit : thousand)

| Categories       | 2008     | 2009    | 2010    | 2011     |
|------------------|----------|---------|---------|----------|
| Embedded IC Chip | 4,694    | 4,627   | 4,579   | 4,434    |
|                  | (6.4%)   | (-1.4%) | (-1.0%) | (-3.2%)  |
| Virtual Machine  | 3,783    | 6,528   | 8,561   | 8,928    |
|                  | (533.7%) | (72.6)  | (31.1%) | (4.3%)   |
| Smart phone      |          | 13      | 2,609   | 10,358   |
|                  |          |         | (—)     | (297.0%) |
| Total            | 8,477    | 11,168  | 15,748  | 23,720   |
|                  | (69.2%)  | (31.7)  | (41.0)  | (50.6%)  |

Source : The Bank of Korea, Feb. 6<sup>th</sup> 2012

## II.4 Status of Korea

### □ NFC Payments Service(Source : KCC(Korea Communications Commission))

- Service area : whole area of Korea(Feb 23. 2012)
- Number of Store available for NFC Service : 22, 056
  - Mart, Coffee Shop, Department store, Gas Station and so on
  - Number of installed NFC Reader : 55,830
- Number of Smart Phone available for NFC Service : around 7 million  
(estimate)

# III. Case Study

## II.3 Status of Global Service

### □ World Bank(**Financial DataSets App**)(Source : Asia Pacific Future Gov, , Nov/Dec. 2011)

- provide data from World Bank Finances Website
- Services
  - Real time access to Bank's Financial Information
  - Information on country, project and loan level from IBRD and IDA
  - Share information via SNS
  - Report issues to data accuracy, corruption and fraud by Citizens

### □ USA(**Google Wallet by New Jersey**) (Source : Government Technology)

- Service : pay for train and bus tickets by Google Wallet(Oct. 2011)
- Service Area : 165 rail stations, 60 light rail stations, 19,000 bus stops

## II.3 Status of Global Service

### □ Kenya(M-Pesa) (Source : Financial Times, Mar. 21<sup>st</sup>, 2012)

- M-Pesa : system of mobile payment
- Pay school fees, buy groceries, air ticket, beer and so on by Mobile Phone
- 15 million people use
- Transaction Amounts : \$8.8 billion

### □ Singapore(Next-Generation e-Payment) (Source : IDA, Oct. 25<sup>th</sup> 2011)

- Launching date : in the middle of 2012
- Service
  - pay for purchase at more than 20,00 retail points and taxis with NFC

## < OECD & ITU, “M-Government”, Jan. 2012 >

### • • Dowa Emergency Cash Transfer Project (DECT)

Country: **Malawi**

<http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.114.9379&rep=rep1&type=pdf>

[www.wahenga.net/node/797](http://www.wahenga.net/node/797)

The Dowa Emergency Cash Transfer (DECT) project was designed and implemented by Concern Worldwide Malawi, as a humanitarian response to a localised food and livelihoods crisis in Dowa District in Central Malawi. DECT aimed to provide cash transfers to 11 000 needy households for five months (December 2006 to April 2007) to enable them to cover their “missing food entitlement” (MFE) through food purchases.

DECT also aimed: (1) to develop and test innovative modalities for delivering [cash transfers, including mobile banking and the use of technology \(smart-cards and biometric recognition\)](#) for beneficiary registration and verification; (2) to explore market responses to cash transfers in rural areas.

DECT incorporated several innovative design features that had first been devised by Concern Worldwide for its Food and Cash Transfer (FACT) project in 2005/06. These included linking the cash transfer level each month to the local price of food, to protect poor purchasers of staple foods against extreme price rises; and adjusting transfer payments by household size, as this *per capita* approach ensured a more equitable access to food than a uniform payment per household.

- • **SMS based services for Challan status enquiry**

**Country: India**

[www.mgovworld.org/News/income-tax-department-of-india-launchessms-based-services-for-challan-status-enquiry](http://www.mgovworld.org/News/income-tax-department-of-india-launchessms-based-services-for-challan-status-enquiry)

**Tax Information Network (TIN)**, hosted by National Securities Depository Limited (NSDL) on behalf of Income Tax Department (ITD), **offers a facility to verify whether banks have correctly uploaded the details of tax deposits to ITD through SMS.** The tax payer will get the information against which TAN/PAN the payment has been accounted with the confirmation whether amount entered is matched or not. There will be special charges for these SMS. These charges may vary from one mobile service-provider to another. The charge structure can be obtained from the concerned service-provider.

- • **Ticket payment online**

Country: Spain

[www.malaga.eu/](http://www.malaga.eu/)

The Municipal Transport Company of the City of Málaga since 2008 offers the possibility to pay your ticket using your mobile device. There are two versions of the service, an operational one based on the use of SMS and another pilot version using NFC technology.

- • **SMS Parking Payments**

Country: **Estonia**

*[www.tartu.ee/data/Mobilepercent20servicespercent20inpercent20Tartu.pdf](http://www.tartu.ee/data/Mobilepercent20servicespercent20inpercent20Tartu.pdf);*

In the Estonian city of Tartu, 50% of parking payments are made through mobile devices.

- • **SMS Rail Ticket**

Country: **Austria**

[www.orange.at/Content.Node/presse\\_englisch/press\\_releases/press\\_releases/20040929.de.php](http://www.orange.at/Content.Node/presse_englisch/press_releases/press_releases/20040929.de.php);  
[www.nfc-forum.org/resources/presentations/Christoph\\_Koessler\\_Mobilkom.pdf](http://www.nfc-forum.org/resources/presentations/Christoph_Koessler_Mobilkom.pdf);  
[http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTINFORMATIONANDCOMMUNICATIO  
NANDTECHNOLOGIES/EXTEDEVELOPMENT/0,,contentMDK:21180737~menuPK:3320268~pa  
gePK:210058~piPK:210062~theSitePK:559460,00.html](http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTINFORMATIONANDCOMMUNICATIO<br/>NANDTECHNOLOGIES/EXTEDEVELOPMENT/0,,contentMDK:21180737~menuPK:3320268~pa<br/>gePK:210058~piPK:210062~theSitePK:559460,00.html).

In Austria, train e-tickets can be purchased by passengers before boarding the train.

## • • Trenitalia mobile

**Country: Italy**

*[www.trenitalia.com/cms/v/index.jsp?vgnextoid=e5b343c296a3e110VgnVCM1000003f16f90aRCRD](http://www.trenitalia.com/cms/v/index.jsp?vgnextoid=e5b343c296a3e110VgnVCM1000003f16f90aRCRD)*

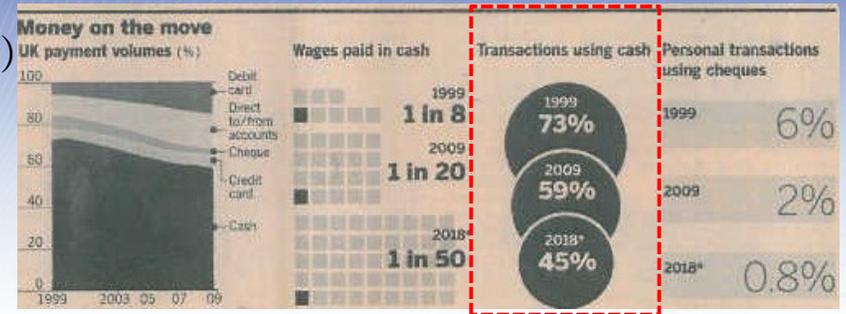
Trenitalia developed several mobile application to access the services, the main are Prontotreno and mobile.trenitalia.com:

- Prontotreno is the new service to download into all “java” mobile phone to see timetables, buy tickets, make booking changes and check on punctuality.
- Mobile.trenitalia.com is a web based service that allows to buy train ticket, change booking, get information on timetables and train punctuality, directly from mobile phone with an Internet connection.

# IV. Conclusions

## ❖ In the near future conventional payment market will be replaced by mobile payment

- Market of mobile payments is now explosively increased((CAGR : 56%)
- high penetration, mobility(anytime, anywhere)  
convenience of use. real time transaction,



## ❖ Government should play a key role to activate Financial Service

- In the near future, international m-transaction, visiting to other countries or Staying in other countries will be getting popular
  - Interoperability, Standard, privacy -> Government's role
  - International collaboration is getting important

## ❖ Korea Government has a strong will to cooperate with other countries

- M-Financial service is now at the beginning stage.
- I think that m-financial environment can be implemented earlier via International collaboration

**Thank You!!**