Telematics Service Solutions for MM Communications on the Move

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"The Fully Networked Car, A Workshop on ICT in Vehicles"
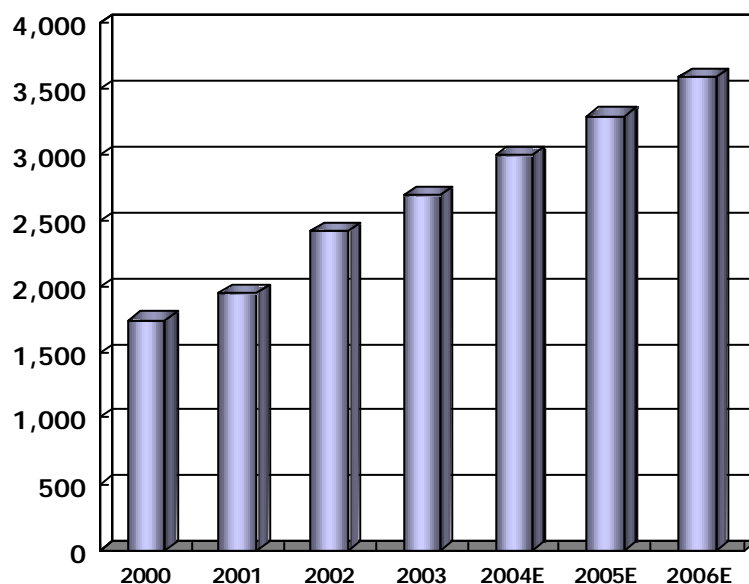*ITU-T Geneva, 2-4 March 2005*

Contents

1. Market Overview in Japan
1. Car Navigation Systems

o 3 million units sold in 2004

o >10 million installed base

o 3.2million units sales expected in 2005 (+8% from 2004)

o 45% of units sold in 2003 equipped with HDD

Car Navigation Sales Units

(thousands)

Examples of Navigation Systems
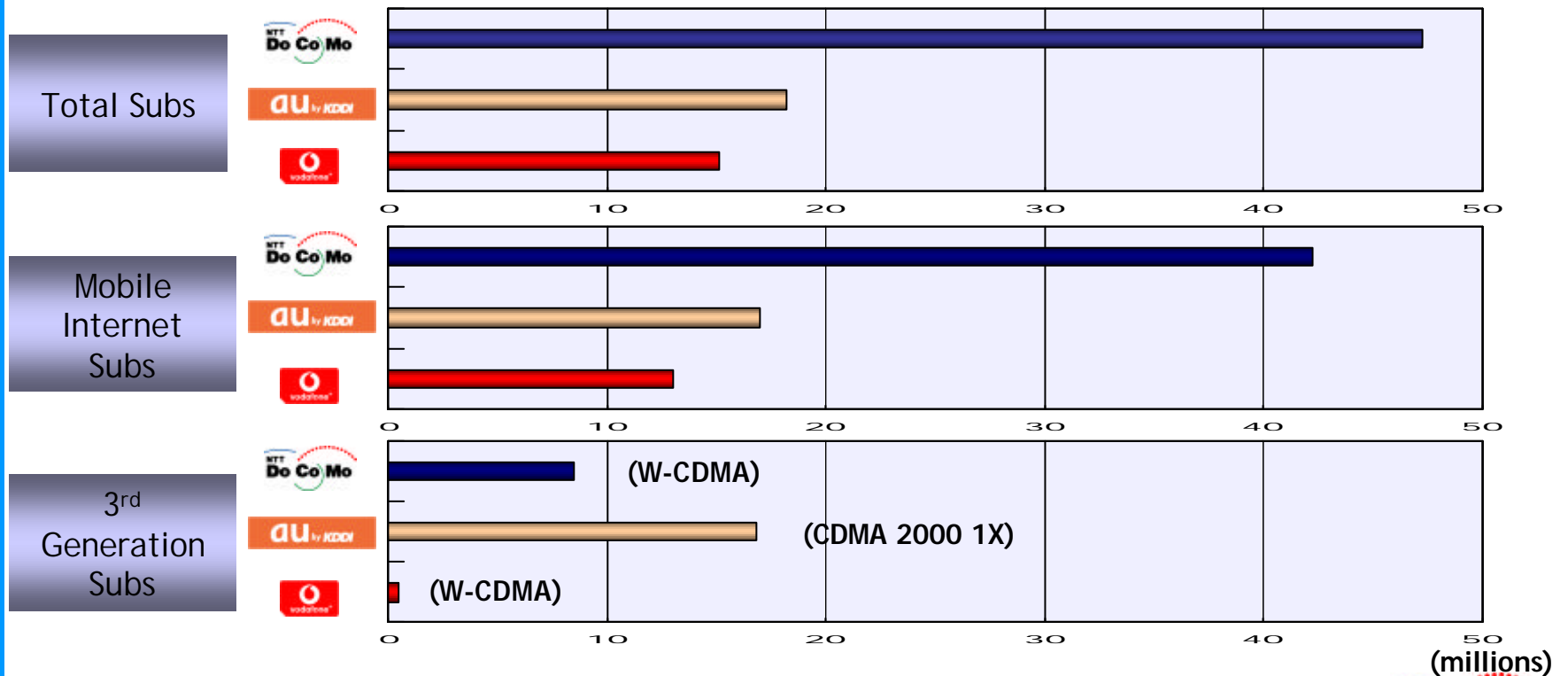

Source: Marketing Publishing
(Japan), 2004

1. Market Overview in Japan
2. Mobile Phones

o Penetration Rate: 67.2% (85.5mil subs)

o Mobile Internet Service: 73.5mil subs

o 3rd Generation Service(WCDMA, CDMA1X): 25.7mil subs

* As of 4Q/2004

Total Subs

Mobile Internet Subs

3rd Generation Subs

(W-CDMA)

(CDMA 2000 1X)

(W-CDMA)

(millions)

ITU-T

"Anytime, Anywhere, with Anyone" (Voice)

"From Volume to Value" (Data)

"Cellular services useful for daily life and business"

No. of Subscribers (millions)

(46.7 mil subs)

(43.0 mil subs)

40

Telecommunications Infrastructure

IT Infrastructure

Life Infrastructure

Infrared transmission

Contactless IC

20

External memory

Bar code reader

FOMA

(8.5 mil subs)

Cellular phone subscribers

i-mode subscribers

'94 '95 '96 '97 '98 '99 '00 '01 '02 '03 '04 '05

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2. Strategies for Telematics Services
2. Growth Strategies

From Voice to Non-Voice

Multimedia

i-mode

2G

Ubiquitous

Globalization

To Anything Mobile

3G

From Domestic to International

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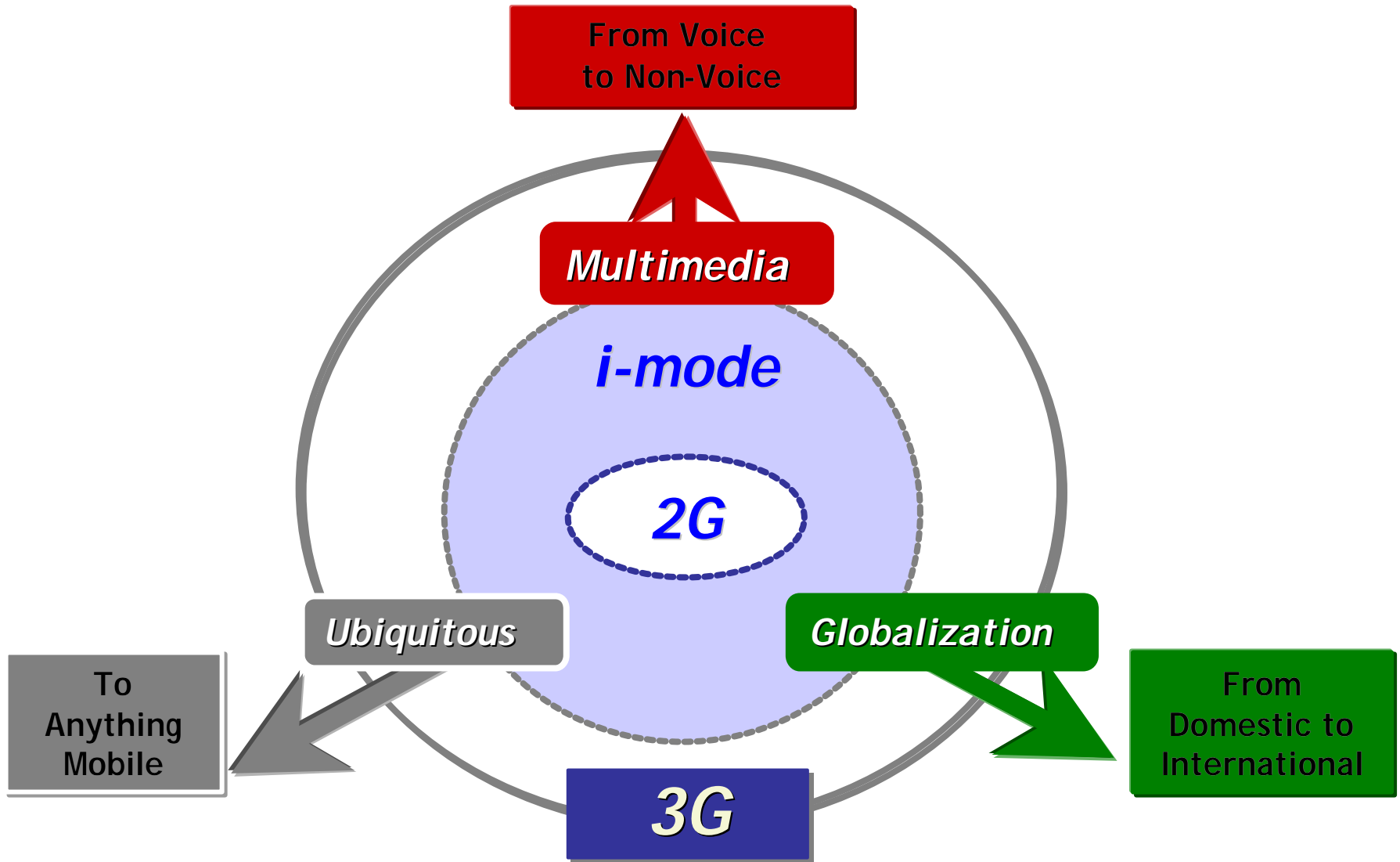
2. Strategies for Telematics Services
3. Vision for Telematics Services

Larger Traffic Volume

Larger Social Roles
(Safer, more comfortable in-vehicle environment)

Enhance DoCoMo's brand equity

Increase in traffic volume from existing customers

Develop integration services b/w mobile phones and car-navigation

Develop new services based on embedded modules

Larger install base of mobile terminals

Increase in new "customer" base

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3. Example of Solution – #1
1. Integration Service of Mobile Phones and Car Navigation System – "Okutto-Keitai"
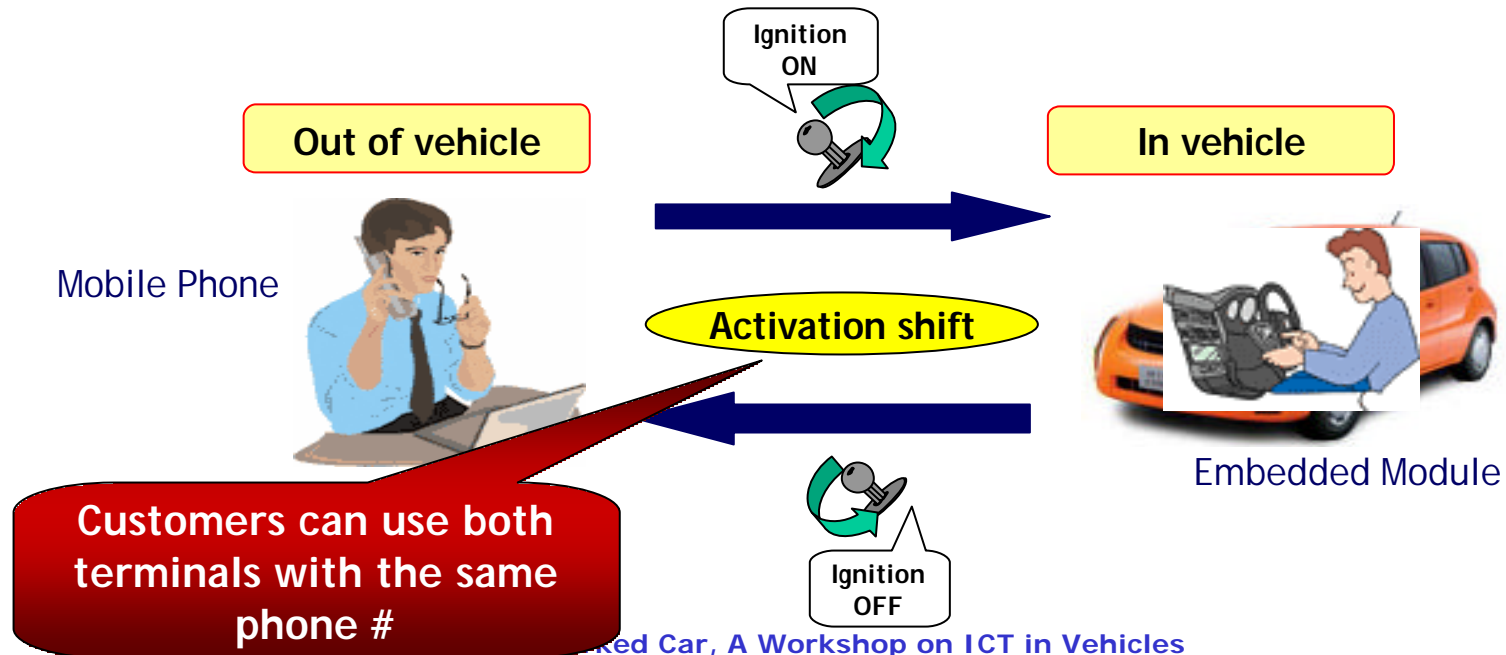
- Developed by collaboration among Nissan, i-mode contents providers, and DoCoMo

- Customer's mobile phone receives value-added data information about locations set by their car navigation system

Car Navigation System

DoCoMo Network

Location info

i-mode Contents Providers

Value-added services
(e.g. map, coupons)

i-mode phones
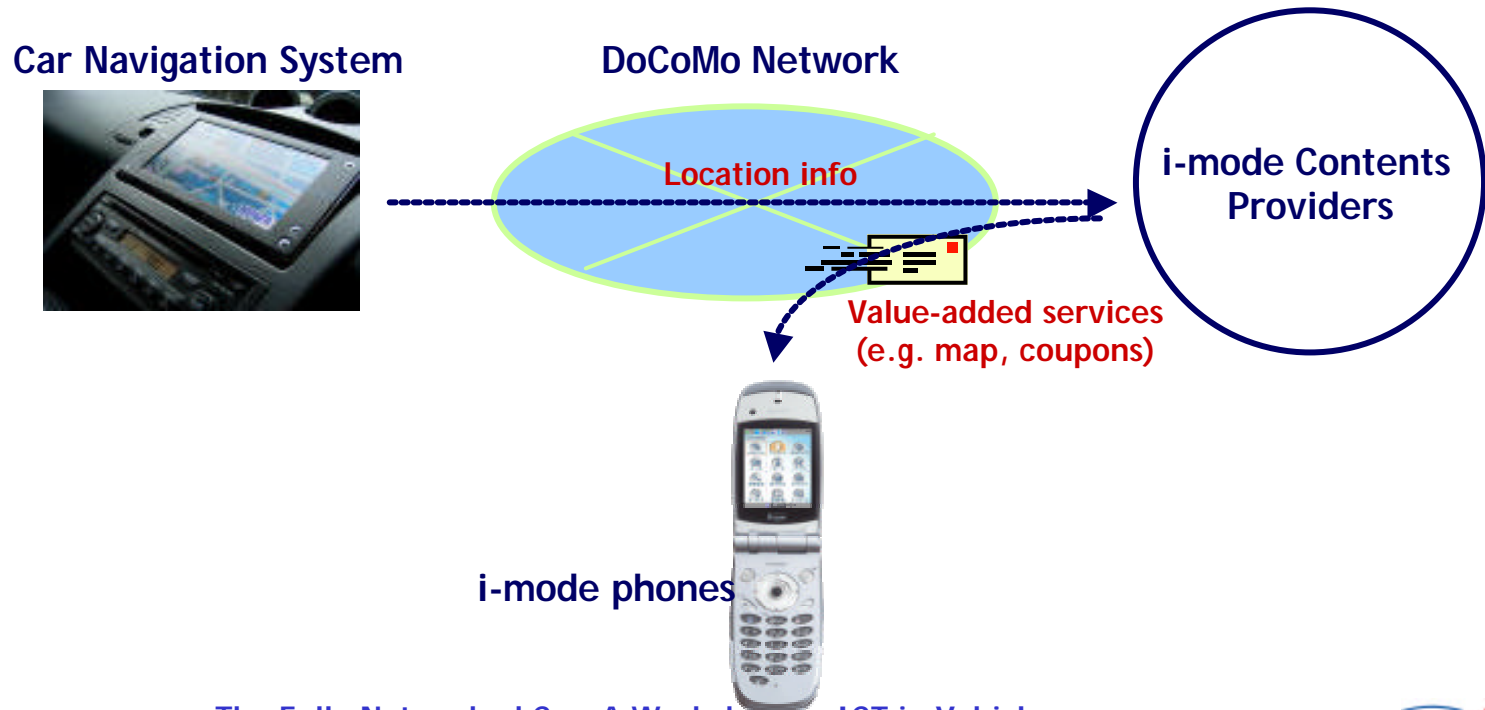
3. Example of Solution - #2
2. Integration Service of Mobile Phones and Embedded Modules – "Switch Phone Service"
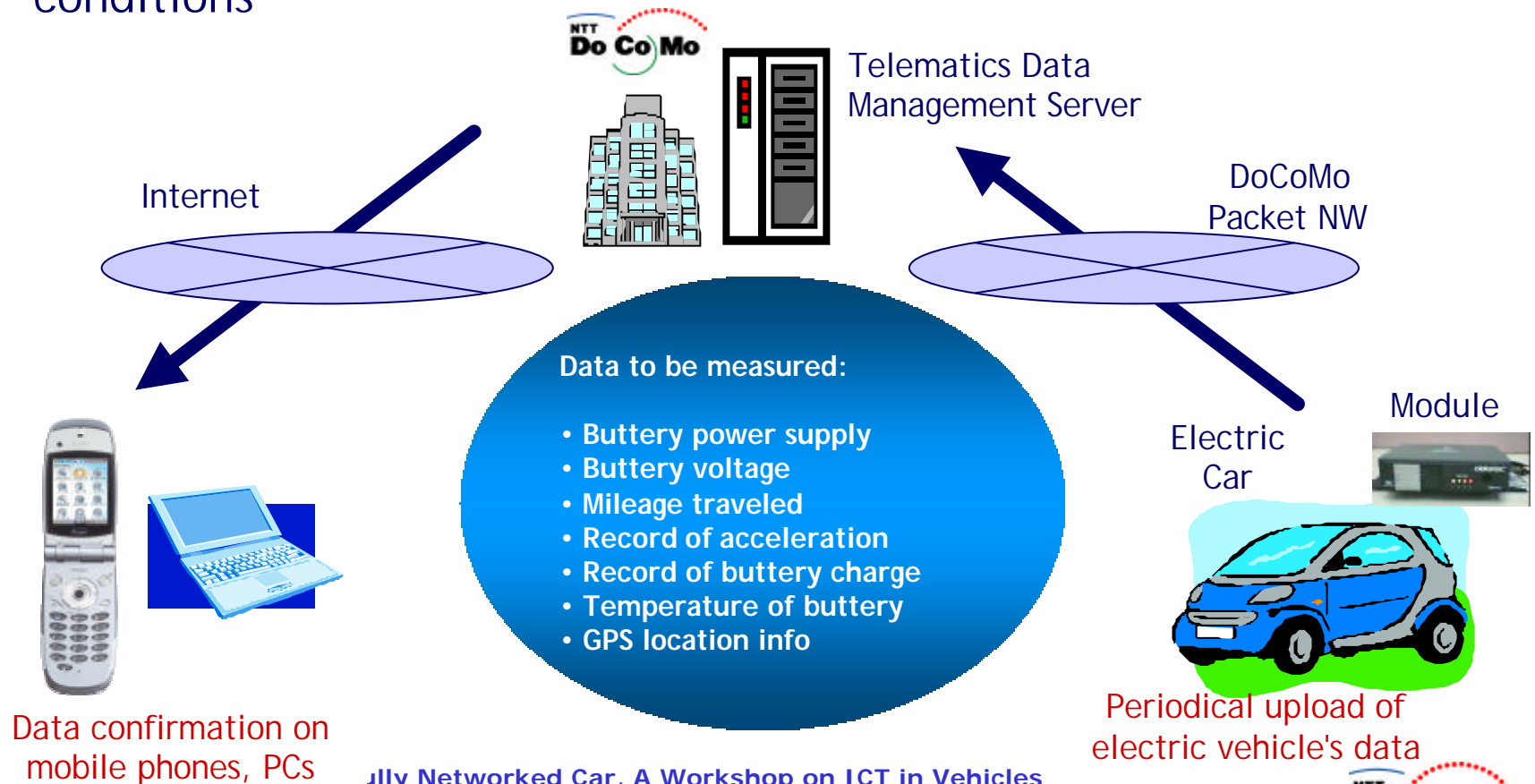
- Customer can make/receive a call through car-navigation system at the same number as its mobile phone's

- The activation shift between its mobile phone and embedded module will be done as network function

- The shift can be geared by a turn-on/off of a vehicle's ignition

Out of vehicle

Mobile Phone

Ignition ON

In vehicle

Activation shift

Ignition OFF

Embedded Module

Customers can use both terminals with the same phone #
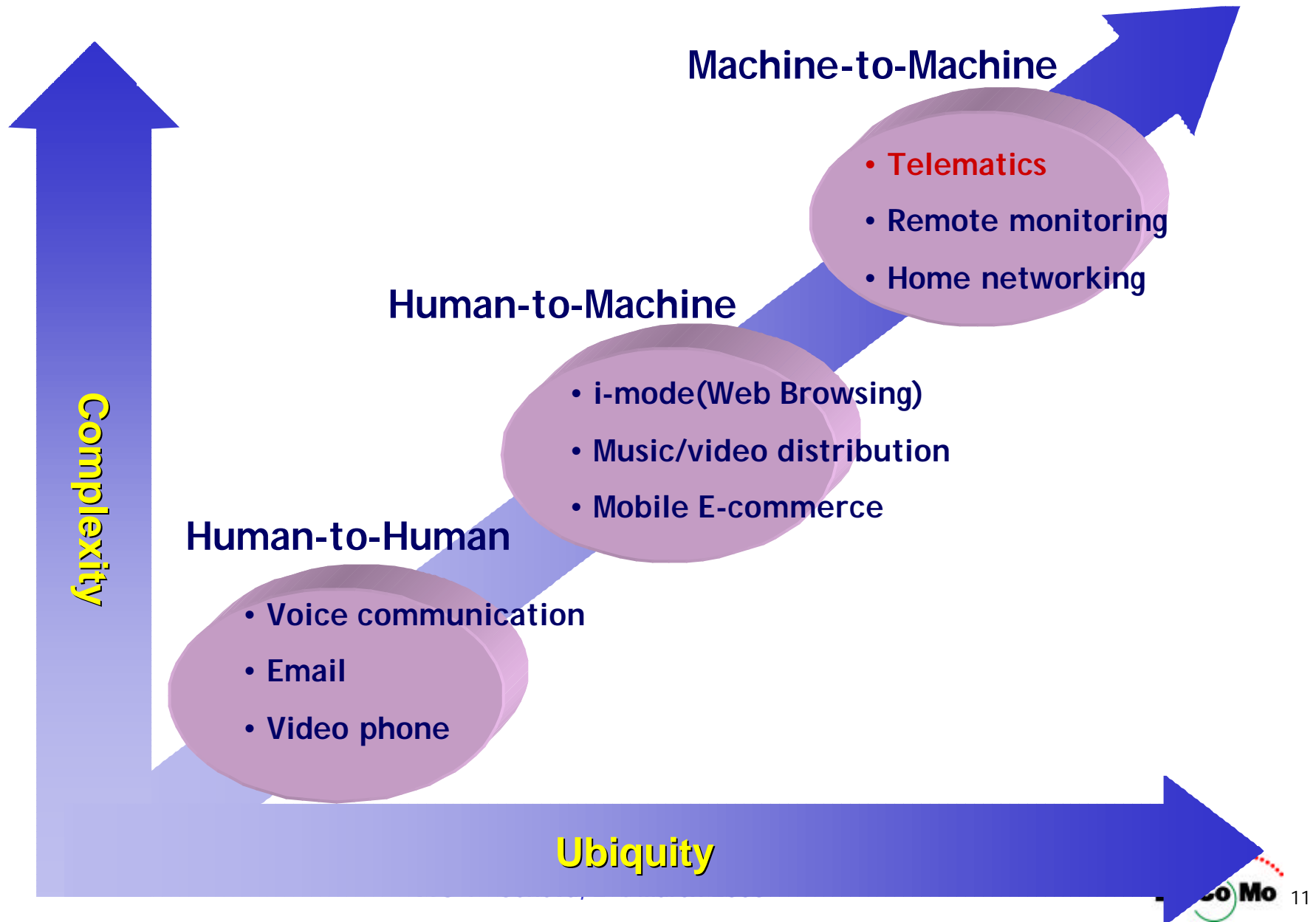
3. Example of Solution - #3

3. New Service Trial Based on Embedded Modules – "Eco-Drive Project"

- Joint trial of NTT DoCoMo and an electric power company to promote electric cars
- Established a system for remote monitoring of the electric car conditions

Telematics Data Management Server

Internet

DoCoMo Packet NW

Data to be measured:

- Buttery power supply
- Buttery voltage
- Mileage traveled
- Record of acceleration
- Record of buttery charge
- Temperature of buttery
- GPS location info

Module

Electric Car

Data confirmation on mobile phones, PCs

Periodical upload of electric vehicle's data

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4. Conclusions

1. Telematics Services on Business Portfolio

Machine-to-Machine

- **Telematics**
- **Remote monitoring**
- **Home networking**

Human-to-Machine

- **i-mode(Web Browsing)**
- **Music/video distribution**
- **Mobile E-commerce**

Human-to-Human

- **Voice communication**
- **Email**
- **Video phone**

Complexity

Ubiquity

11

4. Conclusions
2. Key Issues to Develop Telematics Services

■ Difference of product life cycle between mobile phones and auto vehicles

- \>10 years for auto vehicles, 1-2 years for mobile phones

■ Seamless/integrated service available for both on-board and off-board is the key

- Japanese people spend only 30 minutes per day in their vehicle

- "Okutto-Keitai" and "Switch Phone Service" are in the line with this concept

■ Interface between mobile communications network and car navigation systems

- Cable? Bluetooth? Embedded modules?

International Telecommunication Union

Thank you