

Pervasive Multimedia Tomorrow

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Does the User want Multimedia?

The need is there even today. An Example

Activity	3G Users	Non-3G Users
Internet Browsing	56%	39%
Video Clip Downloads	35%	11%
Video Messaging	34%	11%
Video Calling	35%	N/A
Game Downloads	34%	21%
Full Track Music Downloads	32%	11%
Streaming TV	10%	1%
Online Game Playing	8%	5%

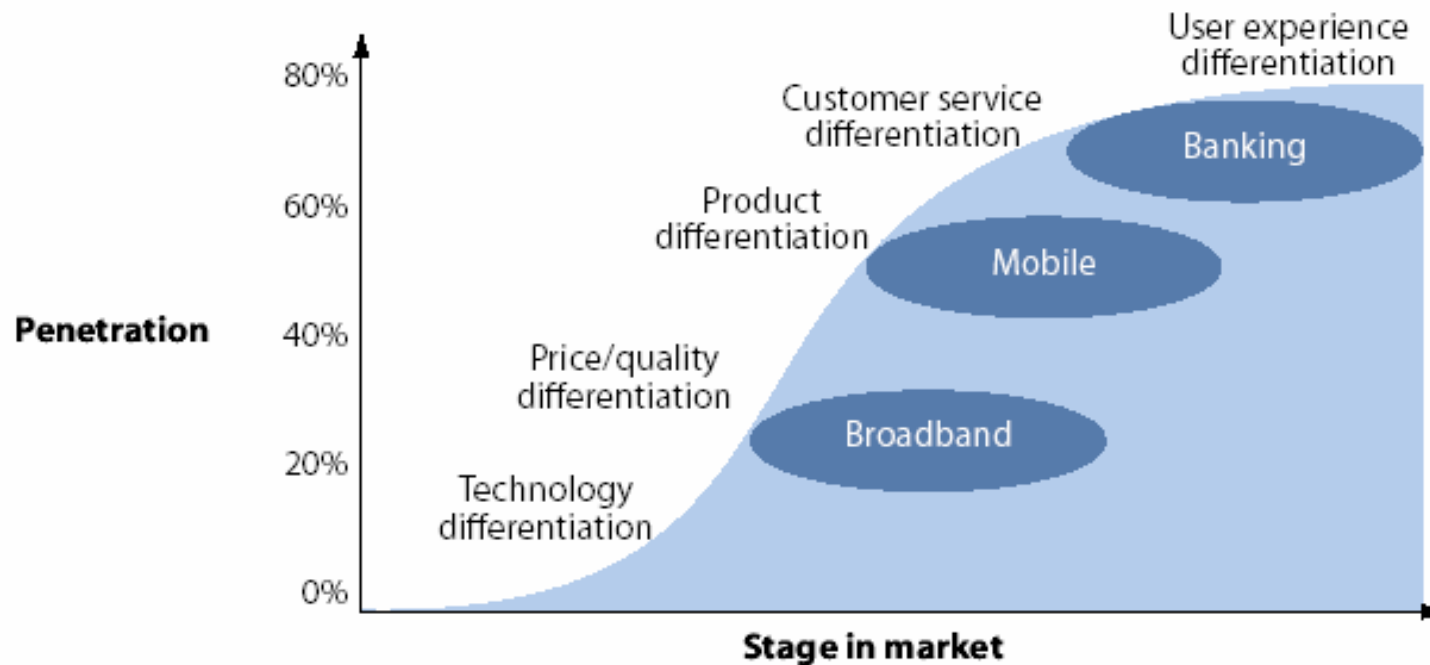
Source: Telephia U.K. 3G Report, Q3 2005

Multimedia Market Trends

- **Powerful Cellular / VoIP handsets will improve multimedia facilities**
 - Replace older handsets, perhaps even desktop computers (Info Tech)
- **Users in Japan want more TV on phones**
 - Survey of 7,905 NTT DoCoMo i-mode users: When asked about what functions and services they want to have featured in their handsets, their most favorite answer was “TV”, followed by “GPS navigation” and “pass/ticket for train and bus”. Also, “key”, “ID card”, and “anti-crime buzzer” were among the best 10 answers.

The question is not whether Multimedia will come, but when, how fast and with what impact

Enablers (1): User Experience



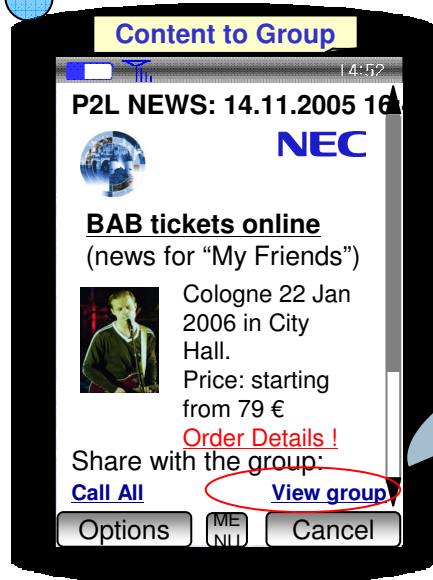
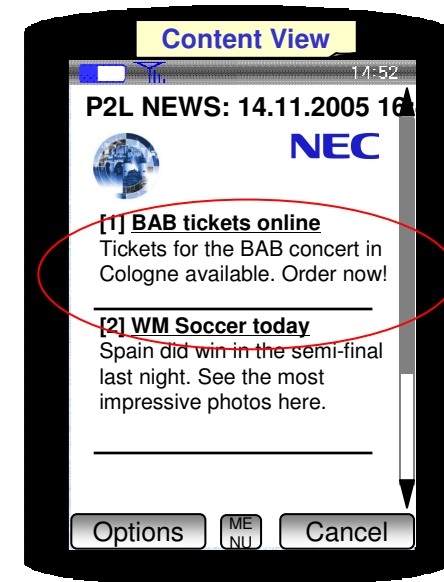
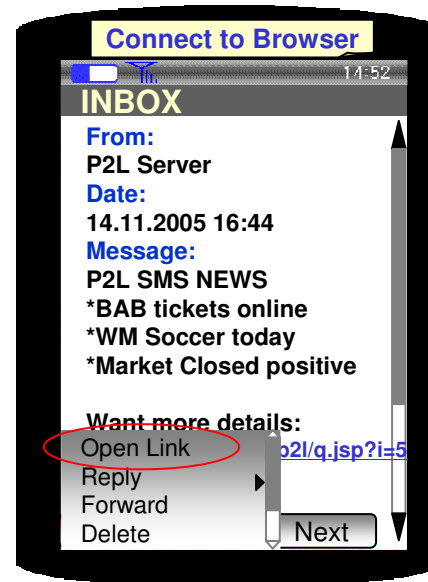
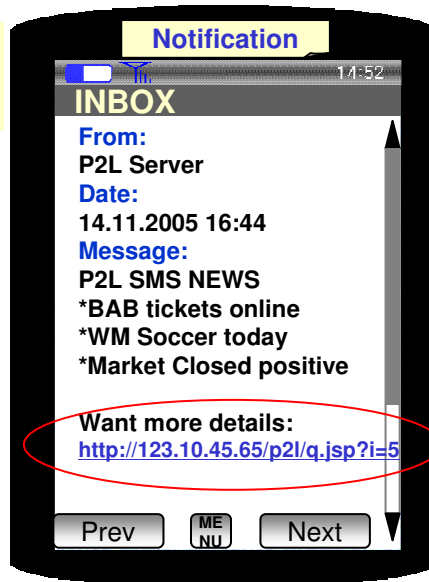
Source: Forrester Research, Inc.

Example: From Content to Communicating

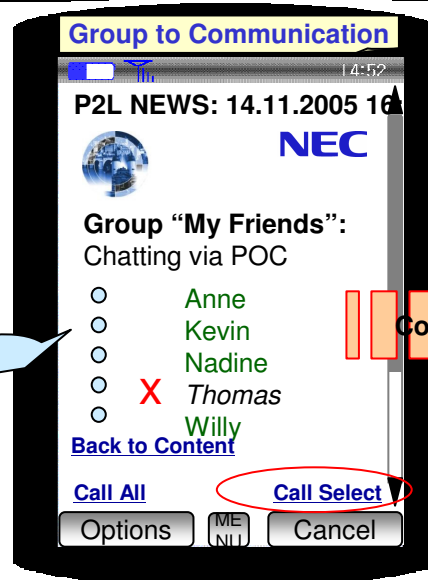
Example:
Notification via SMS

User receives
Content Notification

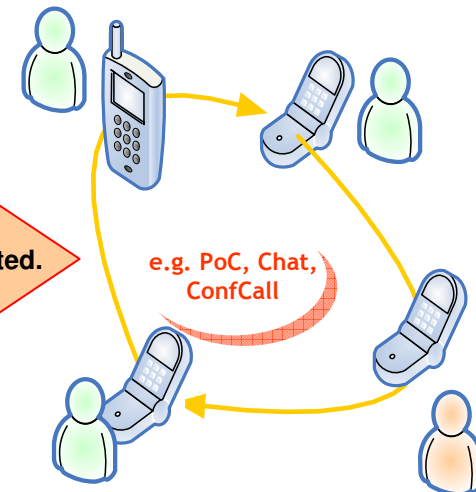
Communication
between service
and user is based
on terminal's
intrinsic
SMS and Browser
clients



Personalized communication



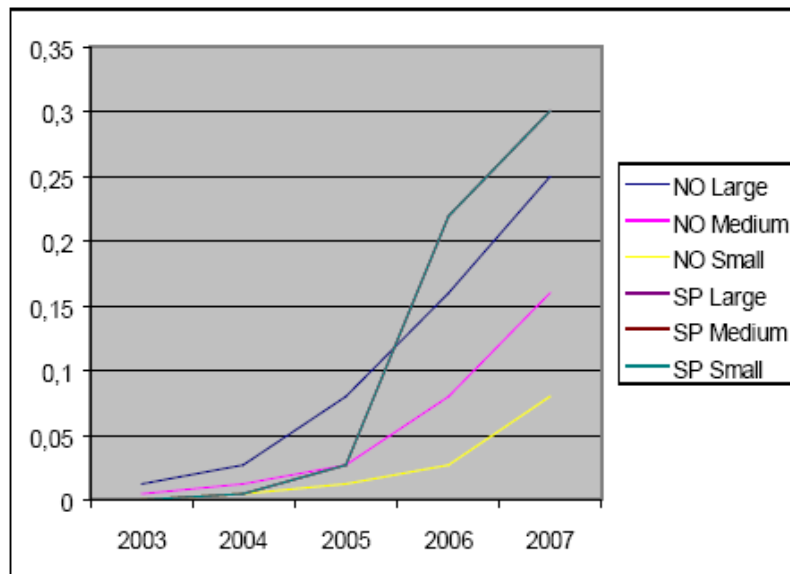
Communication initiated.



Enablers (2): Service Delivery Platform

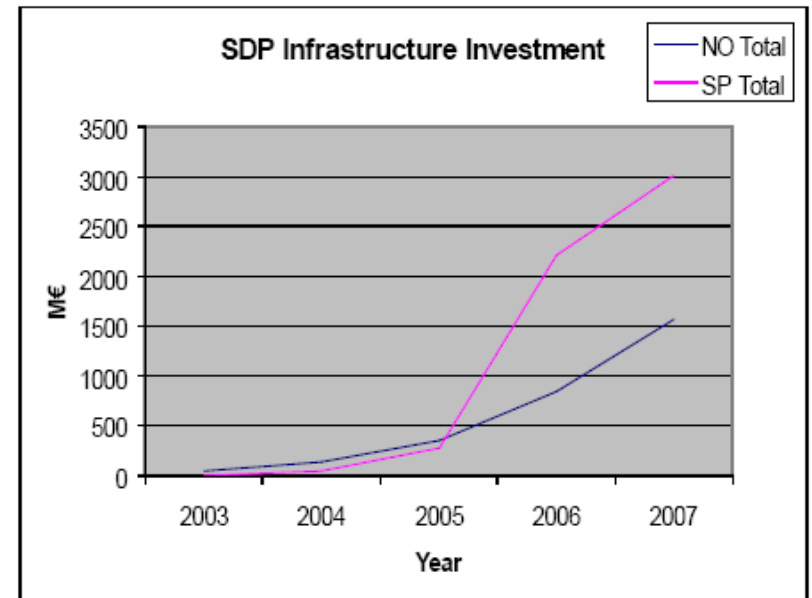
Market Analysts estimate that the total market for global investments in Service Delivery Platforms (SDP) is ~20Bil.€ for the period 2003-2007

Chart 1: SDP growth curves



The chart shows that an accelerating deployment of SDP platforms will begin during 2005.

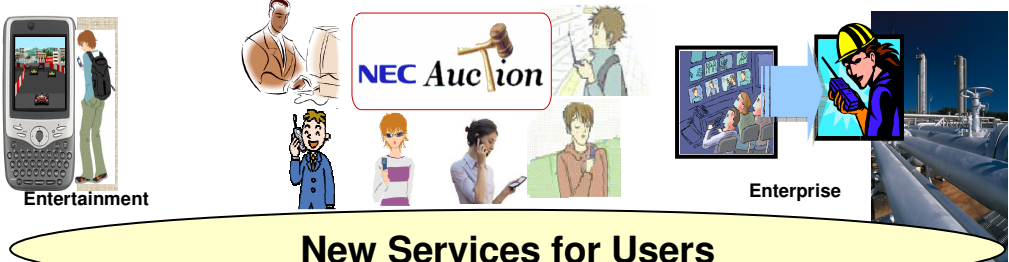
Chart 2: SDP infrastructure investment



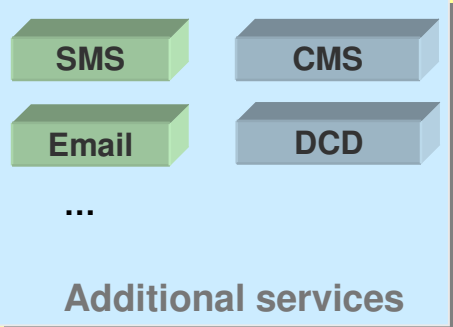
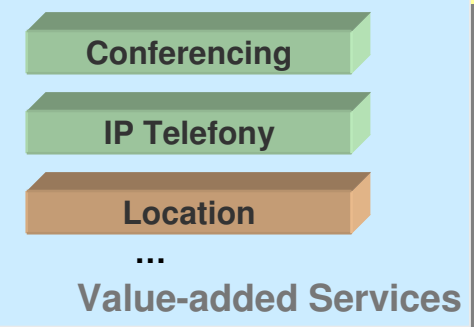
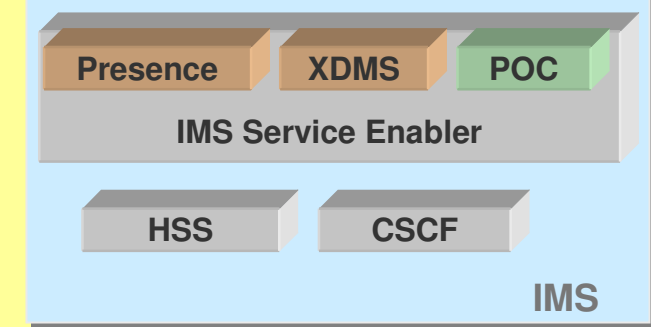
NO...Network Operator
SP....Service Provider

Source: Moriana Group

NEC Labs: Service Integration over SIE



- Communication services
- Content services
- Group and Context support



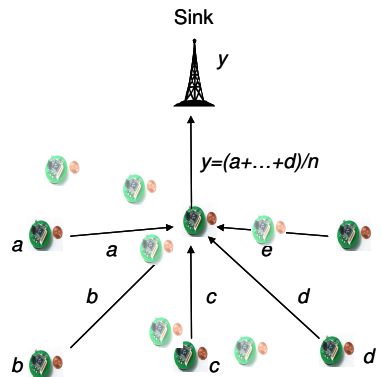
Enablers (3): Mobile Pervasiveness

Handheld



Mobile, handheld, wearable.
Focus is on mobility, services, Content

WSN



Secure Wireless Sensor networks, Provide environmental information (roads, agriculture, cars)

Embedded

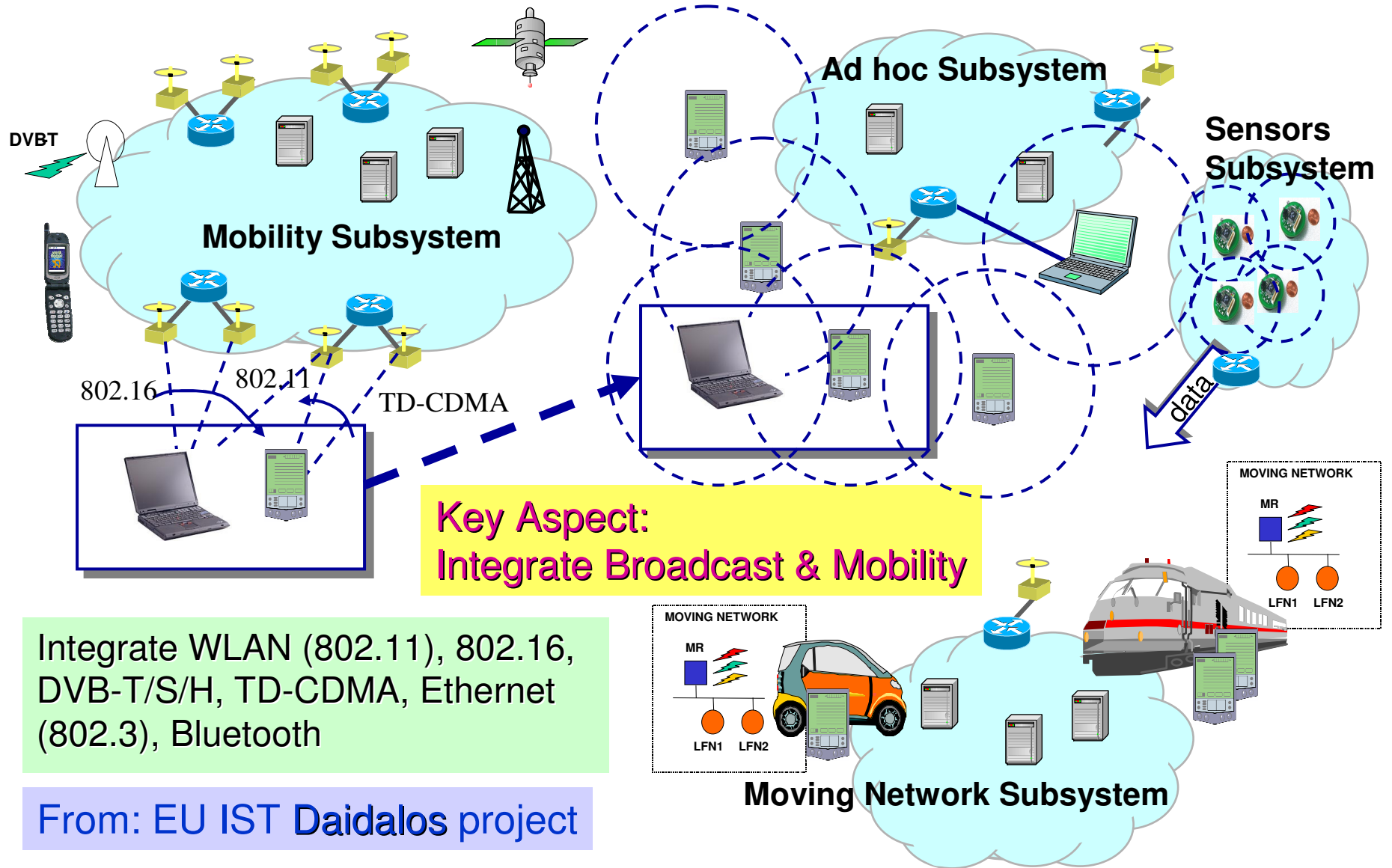


Specialized devices and sensors, public & shared devices, wireless services, PANs, active spaces.

Global, managed (chargeable) pervasiveness needed!

From: EU IST Daidalos project

Seamless Mobility for Heterogeneous Networks

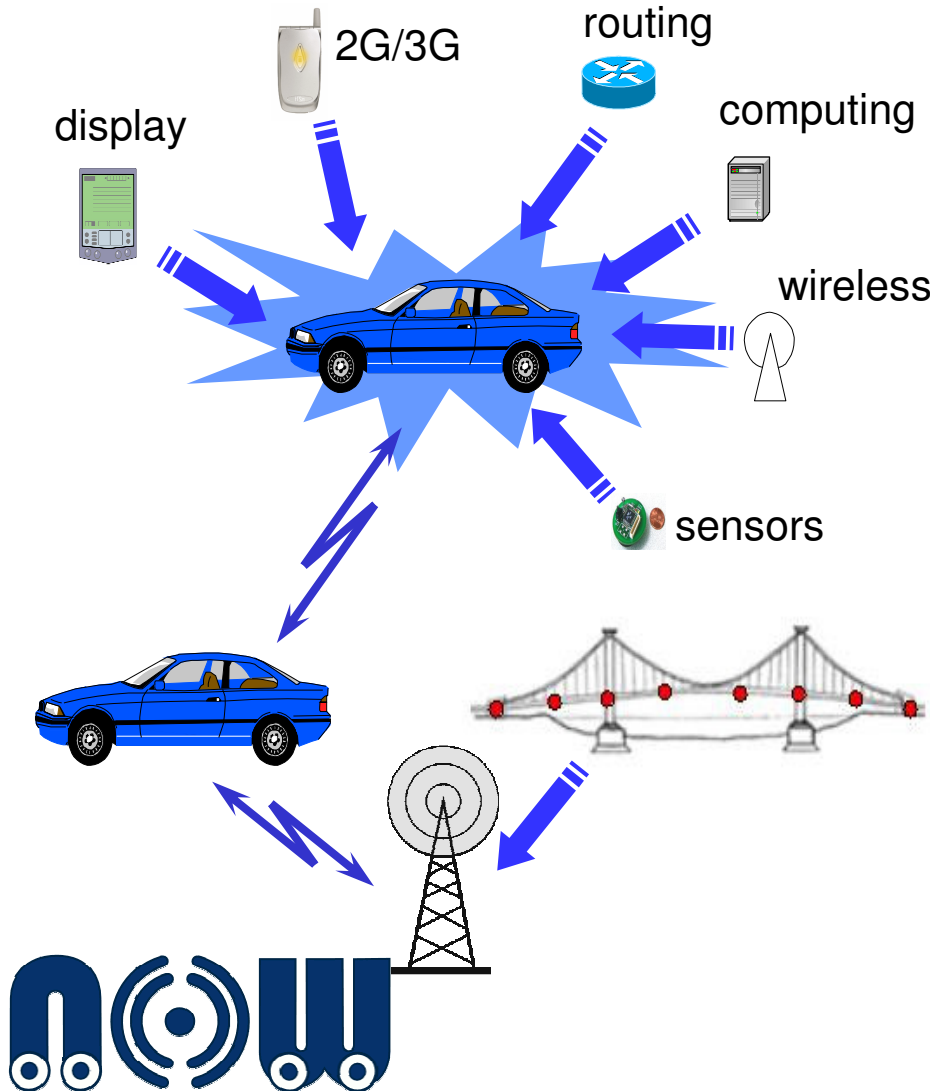


Integrate WLAN (802.11), 802.16, DVB-T/S/H, TD-CDMA, Ethernet (802.3), Bluetooth

From: EU IST Daidalos project

Mobile Pervasiveness of a Different Kind

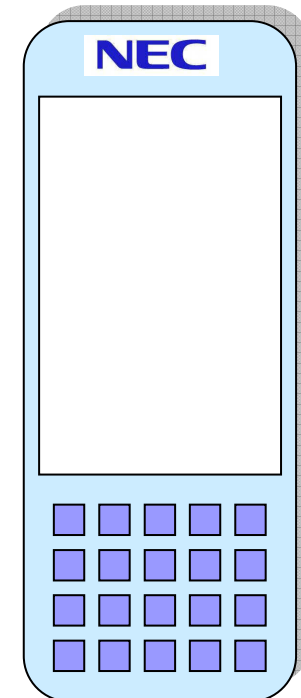
Pervasiveness in Vehicles



- **Powerful devices disappear or embedded in vehicles**
 - **Ample computing and battery power available in cars**
 - **Increased communication capacity to other cars, roadside and environment**
- Powerful computing and networking allow new generation of vehicle-based services and applications**
→ **Safety and Assistance are key!**

Finally: Wireless Identity?

- User wants a limited number of operators enabling universal access to everything
- Such an identity becomes so powerful that very strong security, reliability and privacy concepts are needed
- Several profiles, roles and contexts must be supported
- Knowledge of available services, networks, content, .. wherever the user may be
- **User must remain in control!**
- A secured wireless identity → RFID+++ or identity PDA?



Tomorrow's Multimedia Vanity Device may become user's identification and permit access to everything

Wireless Identity will affect Business

- “**Big players**” have the **trust** of their customers and their complete **understanding** of the open infrastructure and the rules of the game
 - They may become future Identity Providers
- **Specialized providers** can set up and sell **customized** solutions (e.g. vehicular networks, hot spots, community networks) via big players
- New competition? Providers may compete with credit card companies
 - Both compete for and have customer trust
 - Providers lead in understanding services
 - ... so far ...