

# How can we shape personal mobility for the megacity

## Orange Business Services

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FISITA World Automotive summit 2011- Mainz

November 2011

# Summary

partie 1 personal mobility

partie 2 smartphone contribution to mobility

partie 3 Le NFC : a multi-task tool

partie 4 few examples

# Personal mobility

- New mobilities
- Multi modal
- Real time



# Personal mobility (1)

- Personal mobility tends to be **multi modal**. For this reason, each person should have its **own information system**, to be able to choose the most suitable/comfortable transport to go from one point to another, depending on circumstances and state of mind of the person in mobility: walking, cycling, car sharing, taxi-sharing, carpool, public transport usage: tube, bus, railway, tramway...
- It must be possible to **change** the mode of transport during the run. For example, on my usual route by car, my information system inform me :
  - **WARNING** : an accident that blocks the highway at 10 km.
  - **SOLUTION** : it propose to reroute me to a railway station,
  - **SERVICE** : it book a parking place, where I can recharge my EV
  - **COMPLEMENT** : it give me the necessary elements to get around by train and subway in order to reach my appointment with a minimum of delay.
- **Real time** information is crucial to build service

## Personal mobility (2)

- There is **no solution better** than all others : public transport (train, tube, tramway) is appropriate in certain cases, automotive transport in others... Amsterdam constraints (small roads, lot of channels, no tube..) are different than Paris (large avenue, tube, autolib...) or Berlin (large avenue, large perimeter). Solutions must be **optimized for each city**, with various proposition of transport for different people ...
- The information system of a person retrieves **mobility information** from **various ITS** (Intelligent Transportation Systems) that are deployed in major cities:
  - public transport (maps, route, time table, travel time, waiting time...)
  - warning system for traffic jam (for all road transport)
  - reservation systems : car park, tickets, seats...
  - Car or bike booking systems,
  - Car pooling on short distances propositions and booking
- The **social networks** will play a major role in the choices of people for their mobility

# Smartphone and mobility

- Personal programable object
- Connected on internet
- Connected on different information servers.
- Acces to social networks



## annotation

information liée au visuel  
présenté

# Smartphone and mobility (1)

- The smartphone is definitely the **ideal tool** to assist the mobilistic person in his moves.
- People always have it with him ... he forget more his umbrella than his smartphone
- It is **equipped with systems** to provide:
  - Geo localisation (GPS, positioning inside GSM cells)
  - Connection to various ITS, through internet access
  - Multiple modes of connection (Wi-Fi, GSM, 3G, Bluetooth ...)
  - It gets faculties to create relationship between people
  - It accesses rapidly to social networks ...
- It can receive information in **real time** ...

## Smartphone and mobility (2)

### ➤ Use case:

I leave a meeting and I need to cross the city to get back to my office. I ask my smartphone the best possible route.

- It contacts a service platform that will **calculate** my **possible trajectories**.
- For a possible **car-pooling**, it will check if a car belonging to the service will cover **any part of the same route** and provides a linkage (meeting point, common route, type and id of the car...))
- It may **propose to share a taxi**, checking if another person is also on the move (on all or part of the common run), and if a taxi is available nearby
- It will also propose **any solutions** possible for **public transport**
- It will **indicate** me the **closest points** of specific mode (ex : Velib and Autolib), and also the best run to reach destination (navigation, traffic ...)
- It **follows** me during my run and indicates me the difficulties in front of me

# Smartphones NFC



## annotation

information liée au visuel  
présenté

# Smartphone NFC (1)

- A smartphone NFC (near field communication) enables **contactless communication** between two systems to complete a **transaction** and/or an **exchange** of information or **authentication**.
- The first **NFC Smartphones** began their careers in Europe in 2009.
- In the mid 2012, all manufacturers will have at least **one NFC phone in their range** (new Samsung and HTC in Q4).
- **Safety**: The data transferred between platforms and smartphones are encrypted, The security is agreed by the banks. The communication between the two systems during the transaction can not be scanned (only few centimeters of distance)

# Smartphone NFC (2)

## ➤ Numerous and various applications:

- Fast dedicated **payment system** (parking, transport, services)
- **Virtual credit card**
- **token** exchanged or real payment between people (carpooling services)
- Access systems through **virtual keys**: buildings, vehicles ...
- Request for **customized information** to terminals (boarding pass ...)

## ➤ If lost: service with option are possible :

- **A single call** to the “preferred” operator to cancel all functions of the lost phone
- A replacement with a **new configured device**
  - in an phone shop (base service )
  - or send by special courier to a specific place (premium service)

# Exemples

Services or  
experimentations using  
cell phones and  
smartphone capabilities



Image by Steven Topik for YCN.

# Car key NFC (with Valeo)



- For car sharing : collectivities, companies or small communities : allow users to access and start a vehicle without having to move the key from hand to hand ...
- An **application** allows to book the vehicle, to find it, to take it in account. The **NFC module** of the smartphone **allows** the access, and then, placing the smartphone in a receptacle on the dashboard, allows to start it.
- **Valeo** and **Orange** have presented this system in Paris 'Mondial de l'Automobile 2010'

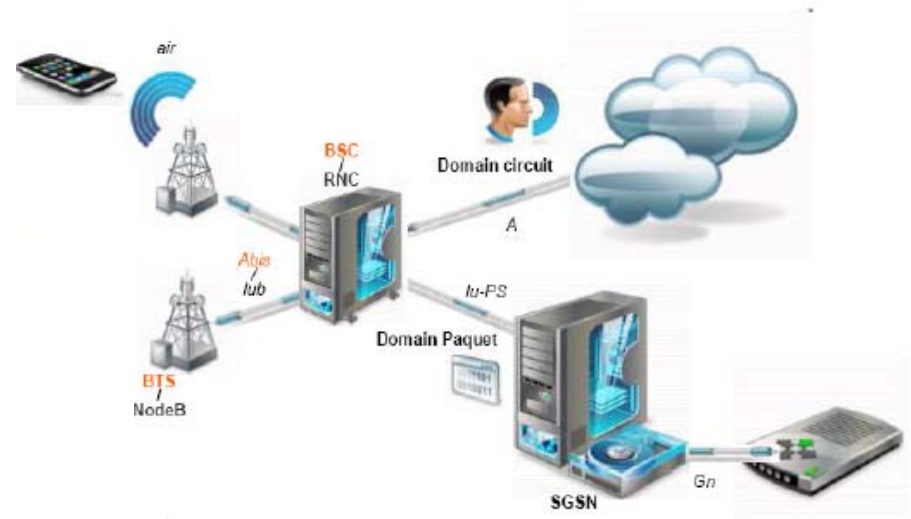


# Orange Traffic

## an innovative solution to enhance traffic information

- a Floating Mobile Data solution

- ✓ **Processing** in real time anonymous signalling data from the network to produce road traffic information
- ✓ **Relying** on our assets related to our cellular network infrastructure and equipments installed
- ✓ **Leveraging** our know-how in network planning and mobile traffic management
- ✓ **Teaming up** with key players of the traffic domain for validation and qualification



- with key advantages

- ✓ **Innovative** : combination of signaling data with network simulation models
- ✓ **Relevant** : high availability
- ✓ **Scalability** : nationwide coverage and no specific hardware
- ✓ **Upgradable** : automatically with network evolutions
- ✓ **Competitive** : cost-effective and fast deployment capabilities

- and key benefits for users

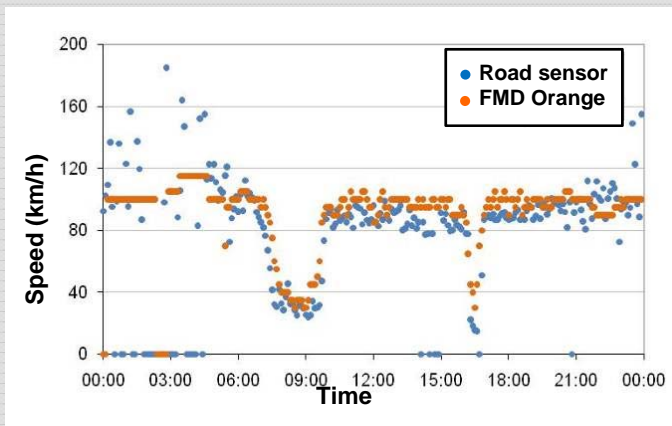
- ✓ **Improved traffic management capabilities** for road operators : more efficiency in congestion detection, traffic flows control, safety operations management, information dissemination...
- ✓ **Improved and value added traveler services** for road users : more accurate, reliable and comprehensive traffic information, more powerful in-car services (route calculation, travel times, navigation...) for an enhanced traveling experience

# Orange Traffic successfully benchmarked with road sensors and GPS probes

## FMD vs road sensor



- Performed by Orange Labs
- Real Data set provided by VINCI/ASF
- Comparison with physical road sensor
- One point = average speed updated every 6 mn



## FMD vs GPS



- Performed by Mediamobile
- Real Data set provided by Orange Labs
- Comparison with cars equipped with GPS system
- One segment = average speed updated every 6 mn

FMD Orange ( — )

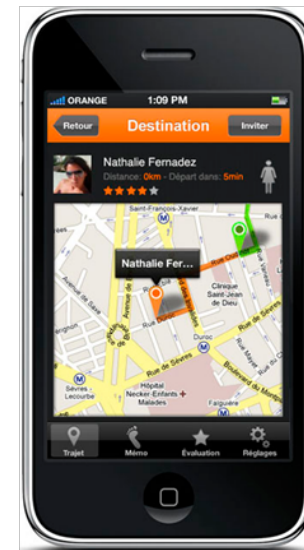
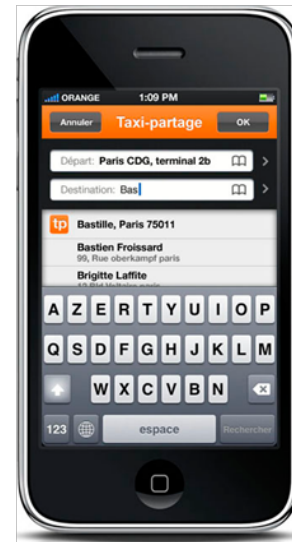
GPS ( — )



Relevant correlation  
High availability all day long  
Strong capacity in congestion detection

# Taxi sharing

- The application **Taxi Share** presented **allows to connect** two people that are in the queue, with their mobile phone (iPhone) and give them the **opportunity to share** the taxi
- The users benefits are :
  - **Waiting time reduced**
  - **Cost shared** on the common road by the passengers
  - **Carbon impact shared** by the two passengers.
- For Orange, it is a **first step** toward a new mobile phone usage as a “smart mobility” tool. It could be followed by a larger application for car pooling.



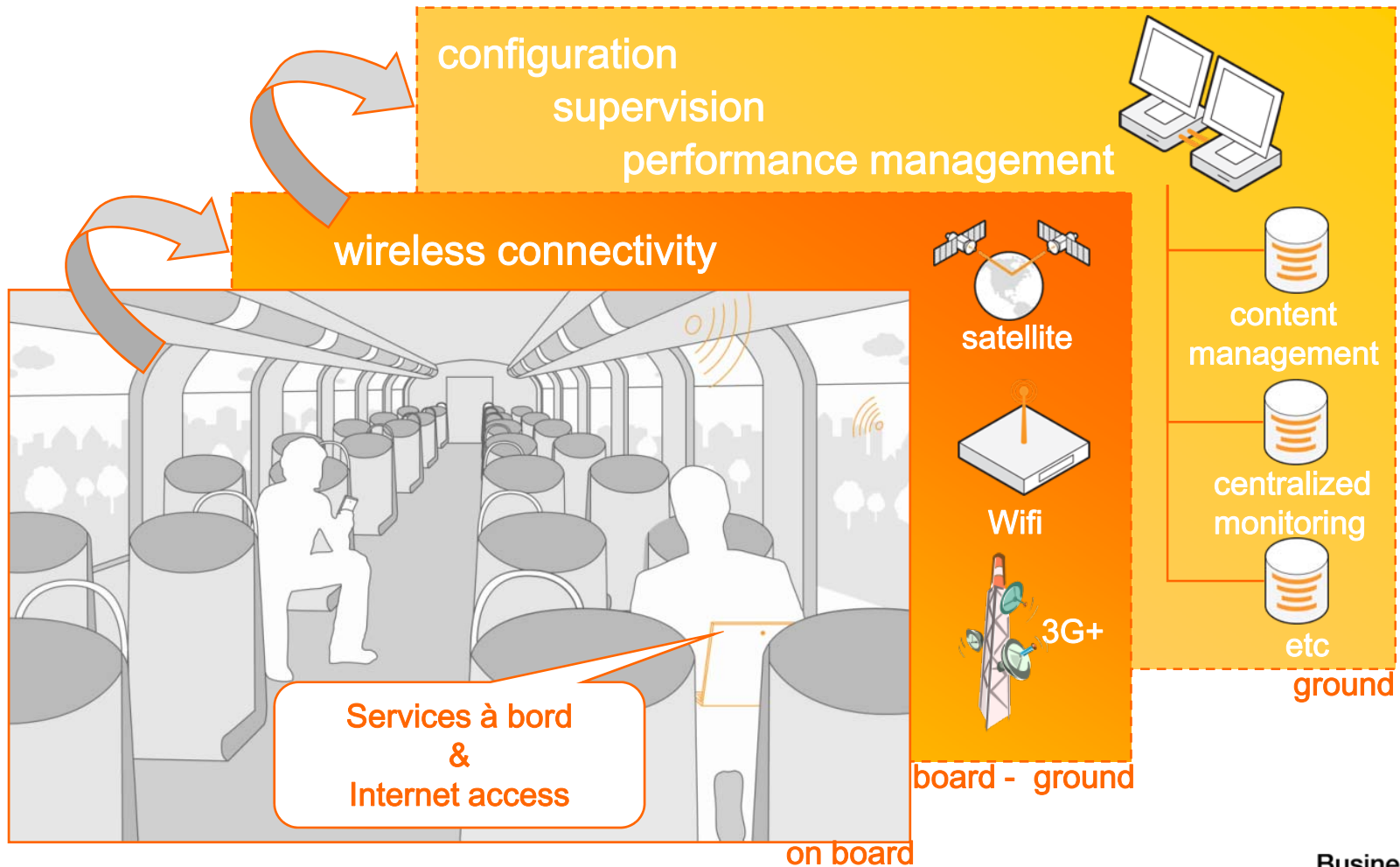
# Multi media connected



**multimedia connected – TGV Eastern Lines**

Internet at high-speed (320km/h)

Onboard portal, VoD, Satellite, Wifi, HSxPA, etc.



# Thank You

page finale pour toutes les présentations externes : Orange Business Services  
note aux utilisateurs : supprimez cette note après lecture