

# Lessons learnt from UMTS deployments in Europe

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ITU/BDT Regional Seminar

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## UMTS experience

1. UMTS: the GSM operators choice
2. Innovative Services with UMTS
3. UMTS and its evolutions for User comfort
4. Harmonised spectrum for UMTS deployments
5. Conclusions



# UMTS - the only viable solution for the GSM operator



## Most of the existing GSM sites are reused and turned in GSM/UMTS sites

- some pure UMTS sites are added when the existing GSM grid is not sufficient to provide the throughputs necessary in a given area

## GSM/UMTS co-siting is possible since both radio systems can coexist

- both the analysis of the counters and the different measurements showed that the UMTS equipment do not cause any quality degradation on the service provided by the collocated GSM equipment

## GSM/GPRS/EDGE services can be implemented in the UMTS network

- speech, SMS, Voice Mail, MMS, WEB browsing, data transfer ...

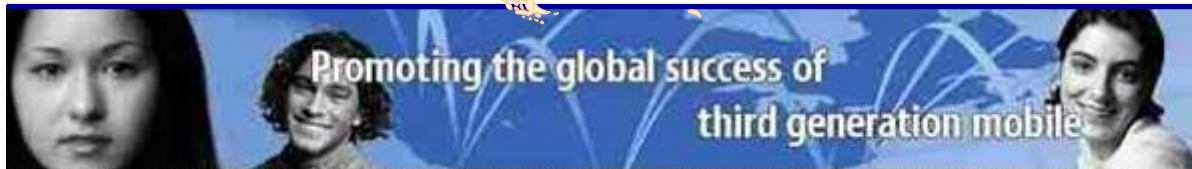


# A world coverage with UMTS in the harmonised bands



- When using a GSM/UMTS terminal, the UMTS subscribers are offered a world coverage thanks to UMTS roaming agreements
  - August 2006: already more than 82 Million UMTS/WCDMA subscribers worldwide
- UMTS users benefit also from the present GSM roaming agreements
  - More than 690 GSM networks across 213 countries
  - GSM represents 82.4% of all global mobile connections

In 10 years, the importance of telecommunications in household budgets has doubled in Europe



# More than 2 billion GSM users

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**comfone**

## Essential elements for roaming

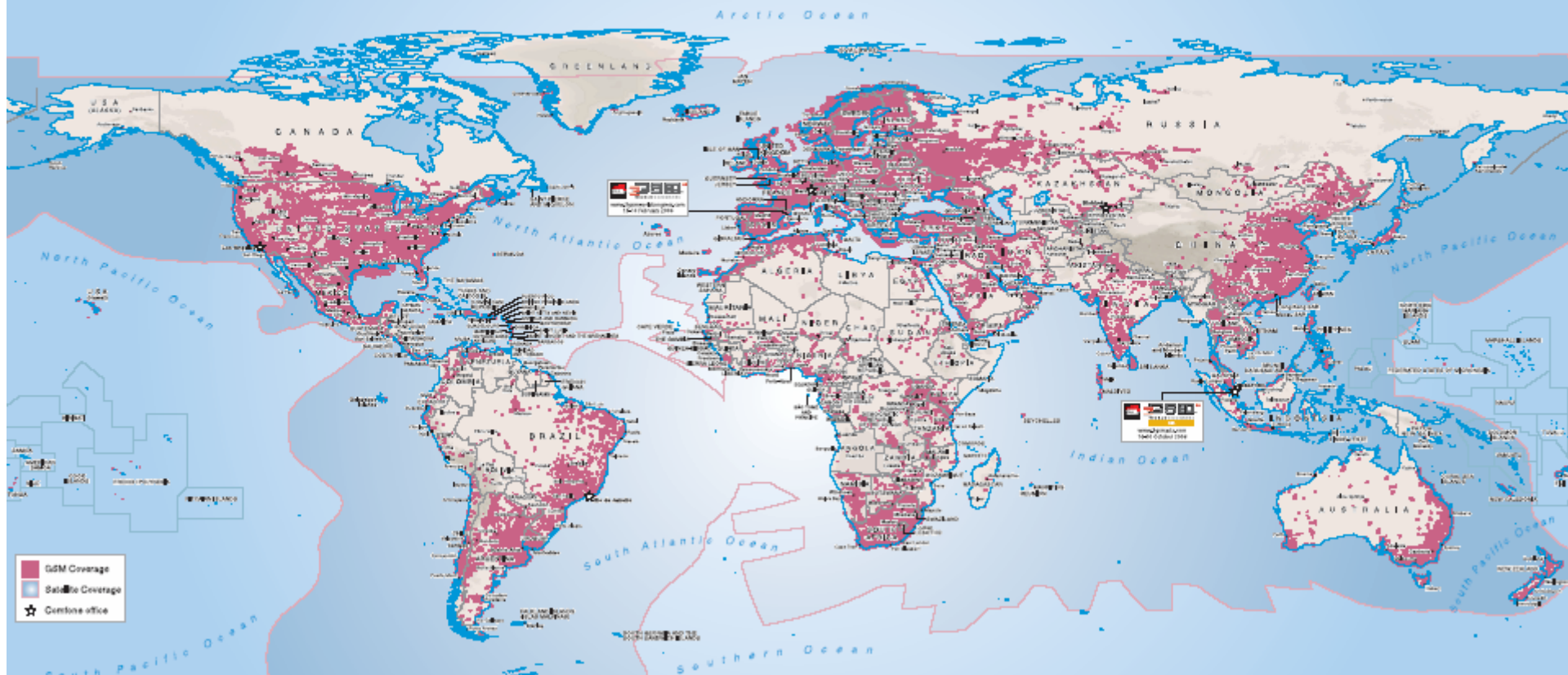
Signalling Services

Data Services

Broker Services

Clearing Services

www.comfone.com



Source: GSM Association



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# Innovative Services with UMTS

- Video telephony - Live TV - Audio/video streaming - Download of multimedia content - Infotainment - Off-line games, on line games - Video messaging via MMS - Live sport Event - Video responder – Presence – Email - Intranet access - web conferencing ...



**Infotainment**  
Internet services on your mobile




Pour vivre l'information en direct!

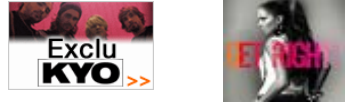
**Live TV**  
54 channels on your mobile



**Orange World Video**  
All videos with 1 click



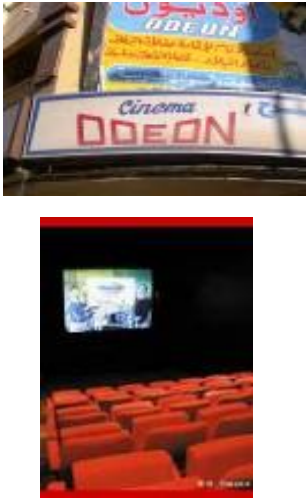
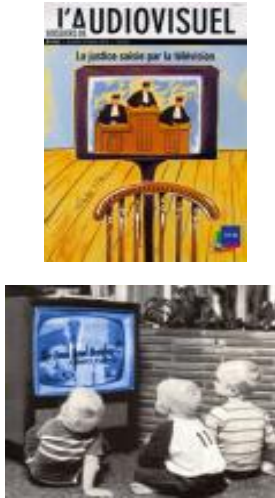

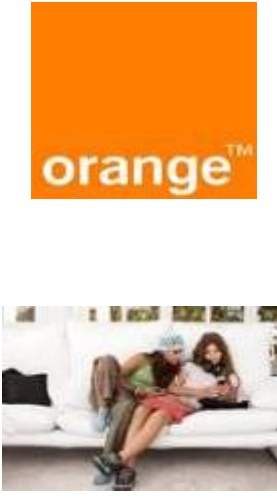
**Orange World Music**  
The best songs on your mobile



The success of innovative services relies mainly on our ability to fall into line with customer demand in terms of optimisation and usability



# Mobile: 4th screen for all everywhere

				
	<b>Movies</b>	<b>Television</b>	<b>Computer</b>	<b>Mobile</b>
<b>Where?</b>	Outside	At home	At home/in the office	<b>Everywhere</b>
<b>What?</b>	Programs	Bouquet of channels	Large contents offer	54 TV channels 5000 videos
<b>How?</b>	Collective	Familial / Individual	Individual	<b>Individual</b>

**Orange World Portal: 5 millions of customers each month and 30 millions of connections per month**



# Example of Orange France Live TV : 54 channels, largest offer on the market

Orange exclusive



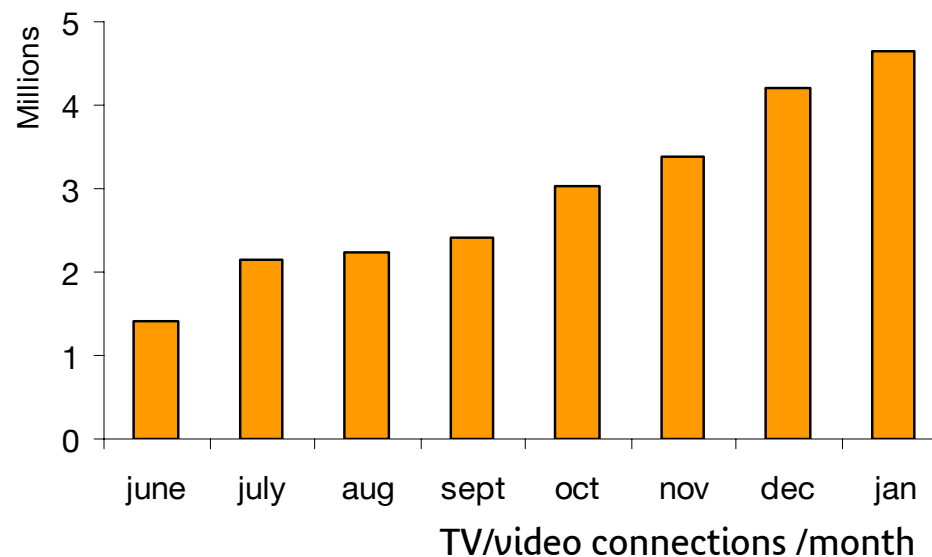
Other channels





# TV and VoD in Orange France

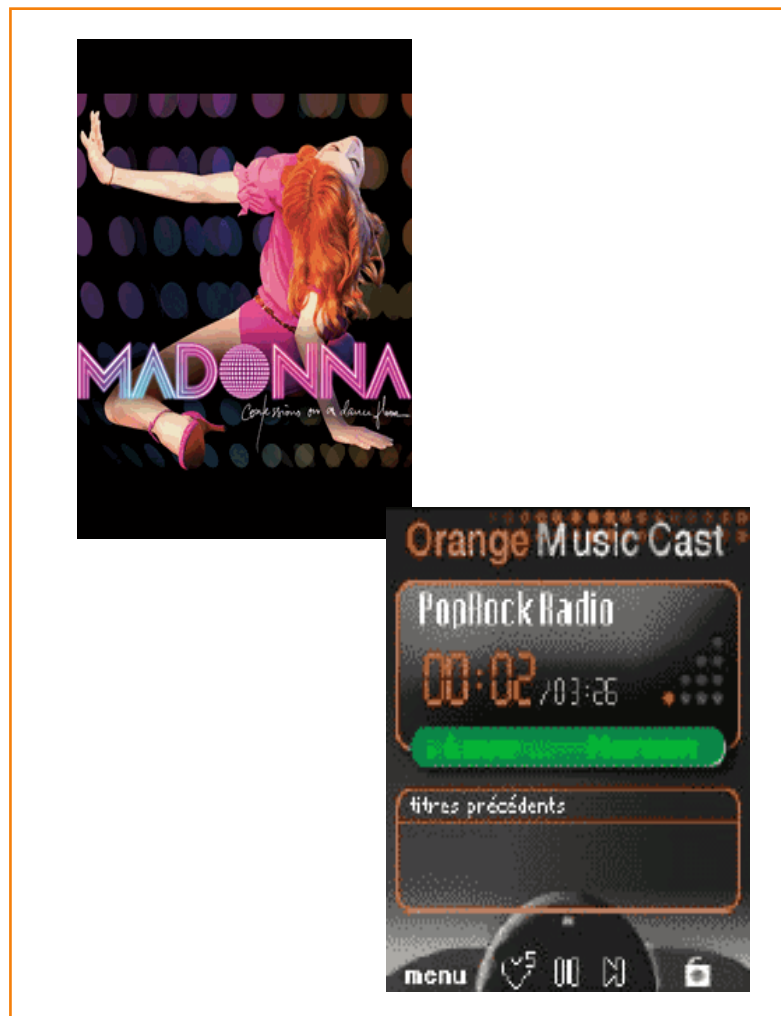
- 54 TV channels and 5 000 VoD (500 new every week)
- 22 millions TV/video connections in 2005
- 4,6 millions connections in January 2006
  - 56% TV, 44% VoD
- Specific contents for mobile video are developing
- Mobile TV over 3G:
  - 30 min/month
- DVB-H trials in France
  - 35 min/day



Customer demand: more for less...

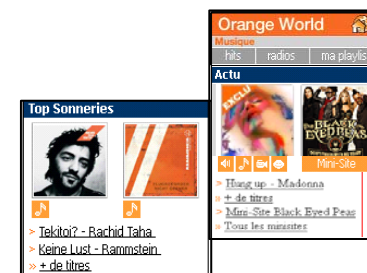


# Music on mobile



## Music in Orange it is already...

- Possibility to discover artist & title when hearing the radio
- Le Streaming
- 10 300 ring tones,
- 2 000 fun tones,
- 300 000 titles
- 11 radios
- And a number of exclusivities like a single of Madonna « hung up »...



## Uses already developed

- **2.5 millions of connections to Music portal in 2<sup>nd</sup> half 2005**
- In 2005: 10 millions of download products
- Operation Madonna: 150.000 ring tones downloaded



# Multimode-multiband terminals at affordable prices



- depending on the offer
- starting from 1€

# Video-glasses: virtual screen commercialised by Orange



les lunettes vidéo Orange

une nouvelle expérience  
de la vidéo  
sur mobile !

- visionnez vos vidéos préférées ■
- jouez aux derniers jeux mobiles  
téléchargés sur Orange world ■
- explorez les services Orange World ■
- consultez et envoyez  
vos mails, vos SMS, vos MMS ■

299 Euros, uniquement compatible  
avec le Samsung D600E



suite >>



# Africa : multimedia mobile portals arriving



- In developing mobile markets, GPRS mobile portals are opened with services such as logos, ringtones, SMS, MMS, e-mail, etc.
  - GPRS portals e.g. Nigeria, Egypt and Uganda
- In more mature mobile markets, operators choose to accompany the latest technologies, launching 3G portals and offering music and video downloads, streaming, e-mail, etc.
  - UMTS portals e.g. Kuwait, Bahrain and South Africa (have launched W-CDMA and HSDPA)



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# TDD trial by Orange France



- Trial in Lille for business segment : June 20 to December 20, 2005
  - Vendor-supplied network and CPE
  - CPE: PC card only
  - Objectives:
    - Test technology performances
    - Identify new usages allowed by very high speed
- Trial results
  - High speed performances, strong customer satisfaction
  - DL: 600 Kbps on average, peak at 1 Mbps
  - UL: 250 Kbps on average, peak at 600 Kbps
  - First page web pop up in only 2 s



**TDD trial has revealed a strong demand for mobile broadband wireless access on the business market**



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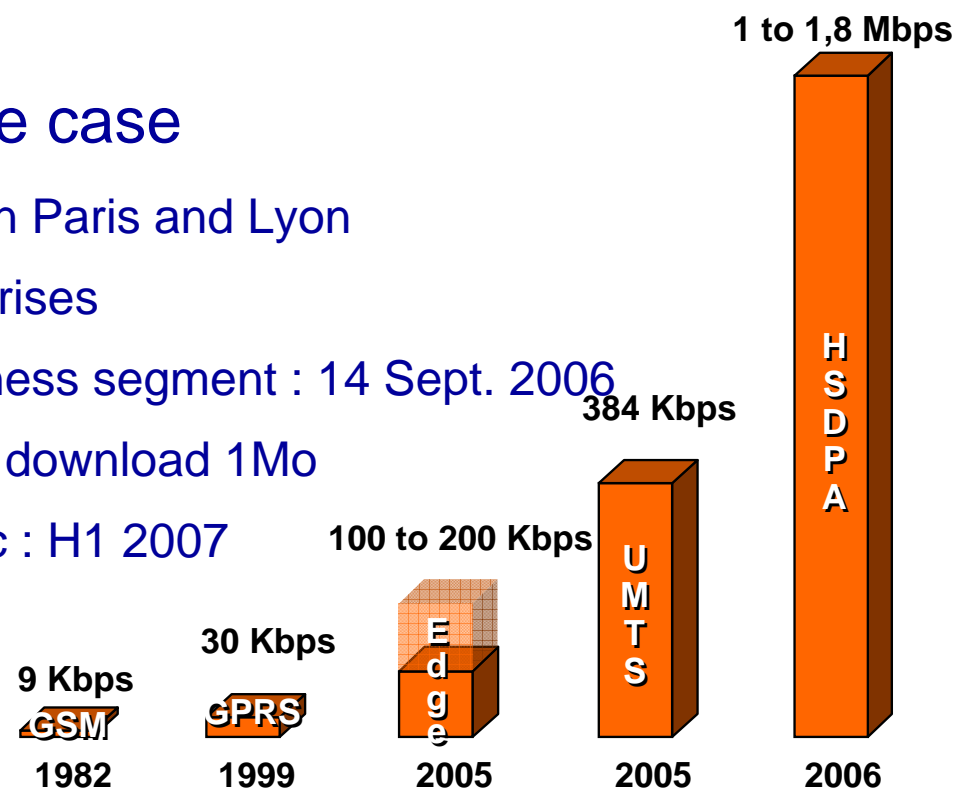
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# UMTS operators are deploying technical solutions to improve user comfort

## HSDPA – Orange France case

- experimentations H1 2006 in Paris and Lyon
  - with almost 300 enterprises
- commercial launch for business segment : 14 Sept. 2006
  - less than 8 seconds to download 1Mo
- commercial launch all public : H1 2007

Orange launched HSDPA already in 13 countries

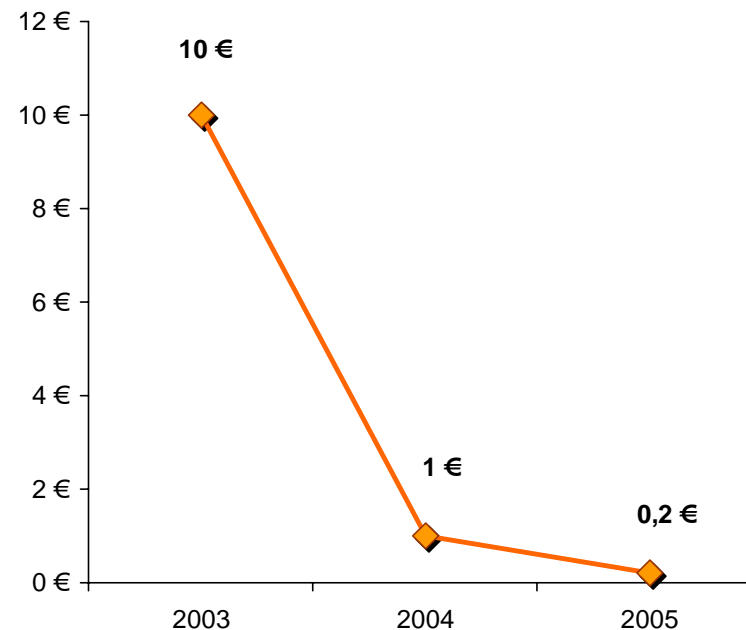


# Technological development and network extension allow democratisation of offer

## Orange France example

- Offers start with 10€/month for unlimited TV/video on WE
- UMTS available in all offers including pre-paid «mobicarte»
- Visiophony at price of classical call

## The price of Mo was divided by 50 in two years



Customers have clearly decided to adopt new mobile services





# Selected Mobile Video Telephony Pricing

Country	Operator	Vid Call
Belgium	Proximus	Same price as voice (until end Jun 06)
France	Orange	Same price as voice (until end Jun 06)
	SFR	Same price as voice (promo)
Germany	Vodafone	Same price as voice until end Jun 06
	T-Mobile	Same price as voice until end Jun 06
Italy	TIM	EUR 0.6/ min (onnet): EUR 1.2/ min (offnet) outside 100 min bundle
Netherlands	Vodafone	EUR 0.75/ min
Spain	Amena	EUR 0.12 call set up + EUR 0.25/ min
	Movistar	EUR 0.15 - EUR 0.2/ min
	Vodafone	EUR 0.5/ min (contract): EUR 0.7/ min (prepaid)
Switzerland	Orange	Same price as voice
	Sunrise	Same price as voice
	Swisscom	Same price as voice
UK	Orange	GBP 0.3/ min (onnet): GBP 0.5/ min (offnet)
	Vodafone	GBP 0.35/ min (onnet): GBP 0.55/ min (offnet)
	O2	same as voice (until end Mar 06). After - GBP 0.5/ min (offnet)

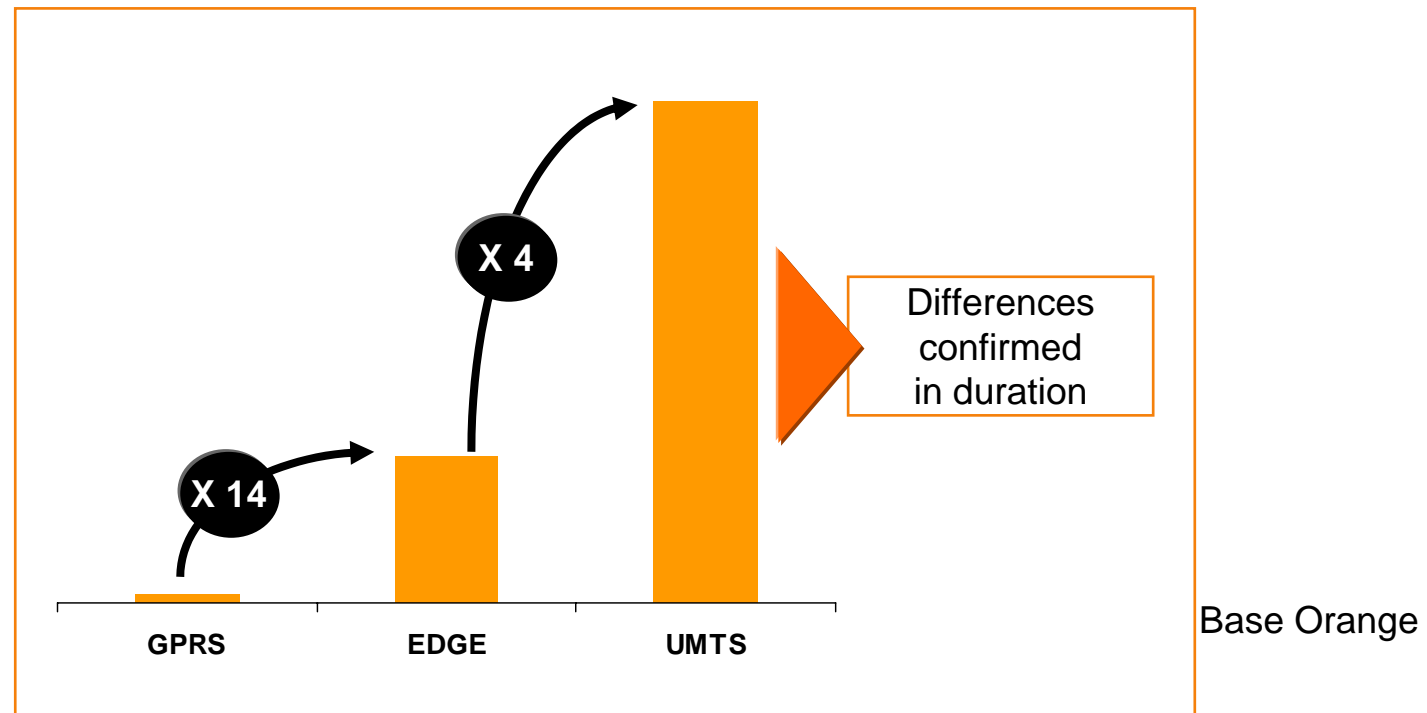
Source: Strategy Analytics, 19 April 2006



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# New technologies are beneficial for customer



Comparison of traffic generated by **active** user of the system in 2005

The change of technology for a customer results in improved comfort and therefore in increased usage and traffic



# Laptops with embedded UMTS and HSDPA emerging



- Vodafone
  - A mobile office ready to go - laptops with built-in 3G broadband (1<sup>st</sup> half 2006), available from : Acer, Dell, Lenovo ...or their IT resellers
  - Simple remote access, no PC card, no fuss
    - customer get a pre-installed SIM and connection software
  - Customer doesn't need any extra equipment
- "With built-in 3G broadband from Vodafone you can:
  - Link up to email, the Internet and your company network, quickly and securely wherever you are
  - View and send large file attachments while on the move
  - Chat via instant messaging, as well as send and receive texts
  - Achieve data speeds up to seven times faster than a dial-up 56k modem
  - Stay online all the time as you only get charged for exchanging data
  - Switch automatically to GPRS when no 3G signal is available, plus connect to WLAN hotspots
  - Monitor megabytes used for email and web with Vodafone's unique on-screen dashboard"



# Laptops with built-in 3G broadband: what does it cost?

Price plan	Within the UK			When Abroad	
	Cost per month	Data included per month	Additional MB	Using a Vodafone preferred network (per MB)	Using other networks (per MB)
Vodafone Data 250	£25	250MB	£1	£3.50	£8.75
Vodafone Data Unlimited	£45	1GB*	N/A	£3.50	£8.75
Vodafone Data Travel	£95	1GB	N/A	100MB included per month; £2 per MB thereafter	£8.75

*\* Unlimited and 'Travel' price plans are subject to a fair usage limit of 1GB per month. All charges exclude VAT. Terms and conditions apply.*

Source: **Vodafone website**



# Laptops with embedded UMTS/HSDPA

- T-Mobile

- Fujitsu-Siemens notebooks with built-in HSDPA, UMTS and WiFi
- Sales start second quarter of 2006
- Subsidies of up to €500 per laptop which could lead to consumer prices starting at €100 for 2 year contract
- T-Mobile “webn’n’walk XL”
  - 35€/mth incl **5 GB** (plus 200 hr WiFi)
  - plus 1 euro per day active use



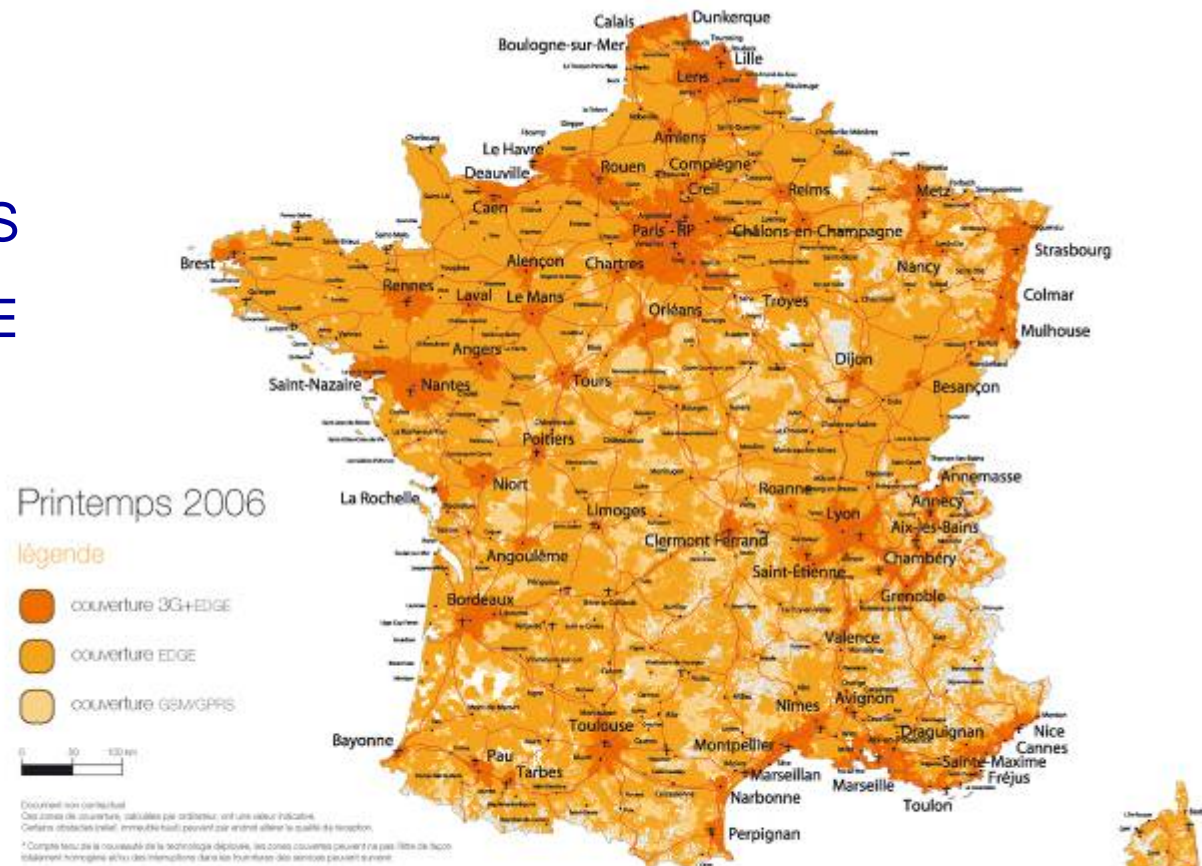
Data Source: **T-Mobile website**



# Population coverage: Orange France case

Summer 2006

- 60 % - UMTS
- 95 % - EDGE



**Additional spectrum needed in 470-600 MHz to allow a cost efficient UMTS coverage in low populated areas**



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# Spectrum strategy for UMTS

## UMTS at 2 GHz

Extension of coverage

- rural
- urban indoor

Extension of capacity,  
high-bit-rate and services

- urban

Year 2008  
UMTS at 900 MHz

Year 2010  
UMTS at 1800 MHz and 2,5 GHz

Year 2010  
UMTS-LTE in UMTS bands

~ 2011  
UMTS at TV band 500 MHz

~ 2015  
IMT-Advanced between 2.7 & 5 GHz



# To conclude:



## **UMTS – the only efficient path from GSM for GSM operators**

- common Core Network, co-siting, dual mode terminals, GSM roaming can be kept and extended...
- UMTS allows new harmonised radio resources for the operators

## **UMTS deployment in 2GHz resulted in increased usage and traffic**

- speed leads to higher usage and improved comfort for a customer with an innovative services portfolio
- UMTS900 will help to improve coverage and UMTS500 would allow cost-efficient further extension of coverage

- **UMTS evolutions offer improvements in the same network and within the existing bands**







thank you  
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