

Orange for a sustainable future

WWRF- 21, 13-15 october Stockholm

Orange Labs

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Monday, 13rd October 2008,



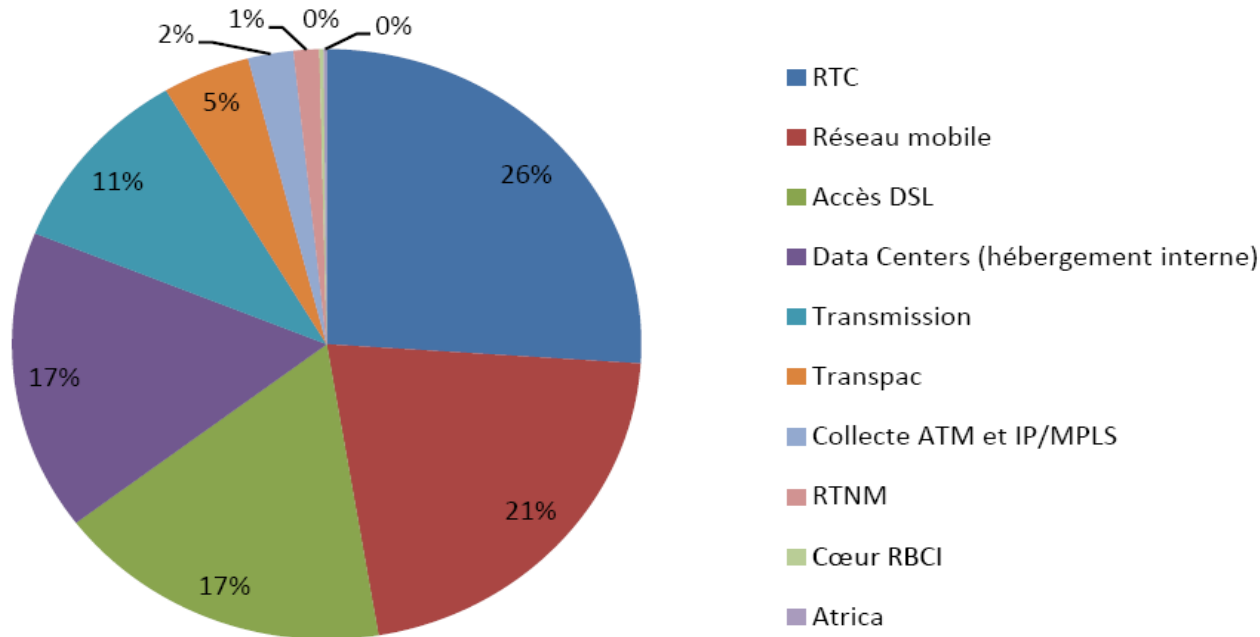
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A woman with dark hair is looking down at a smartphone in her hands. She is wearing a patterned sleeveless top. The background is a brightly lit room with colorful furniture, including a yellow chair and a red cabinet. A semi-transparent white box with a halftone pattern is overlaid on the image, containing the text.

How Orange is reducing its energy consumption? ?

France Telecom's energy consumption (in France) :



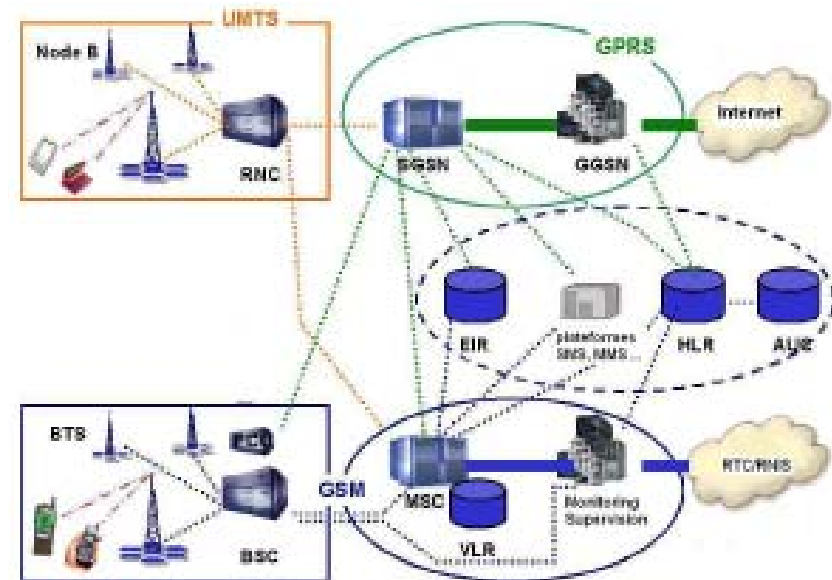
= 1/2% of all the French electricity consumption

Réseau téléphonique commuté 349.3 GWh/an	Réseau mobile 286 GWh/an	Réseau de données 346.4 GWh/an
Infrastructures mutualisées	(avec bâtiments de bureaux) :	707.7 GWh/an

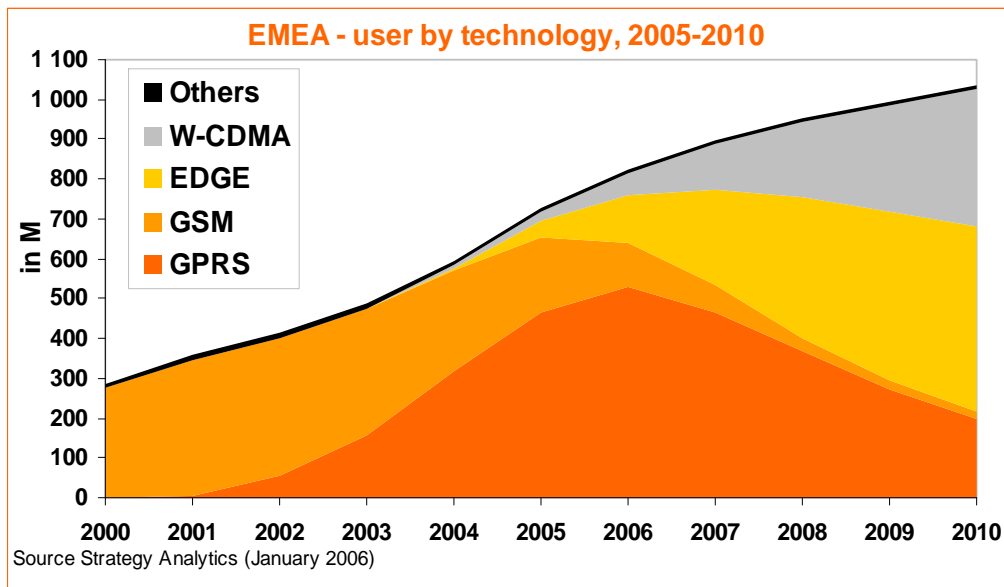
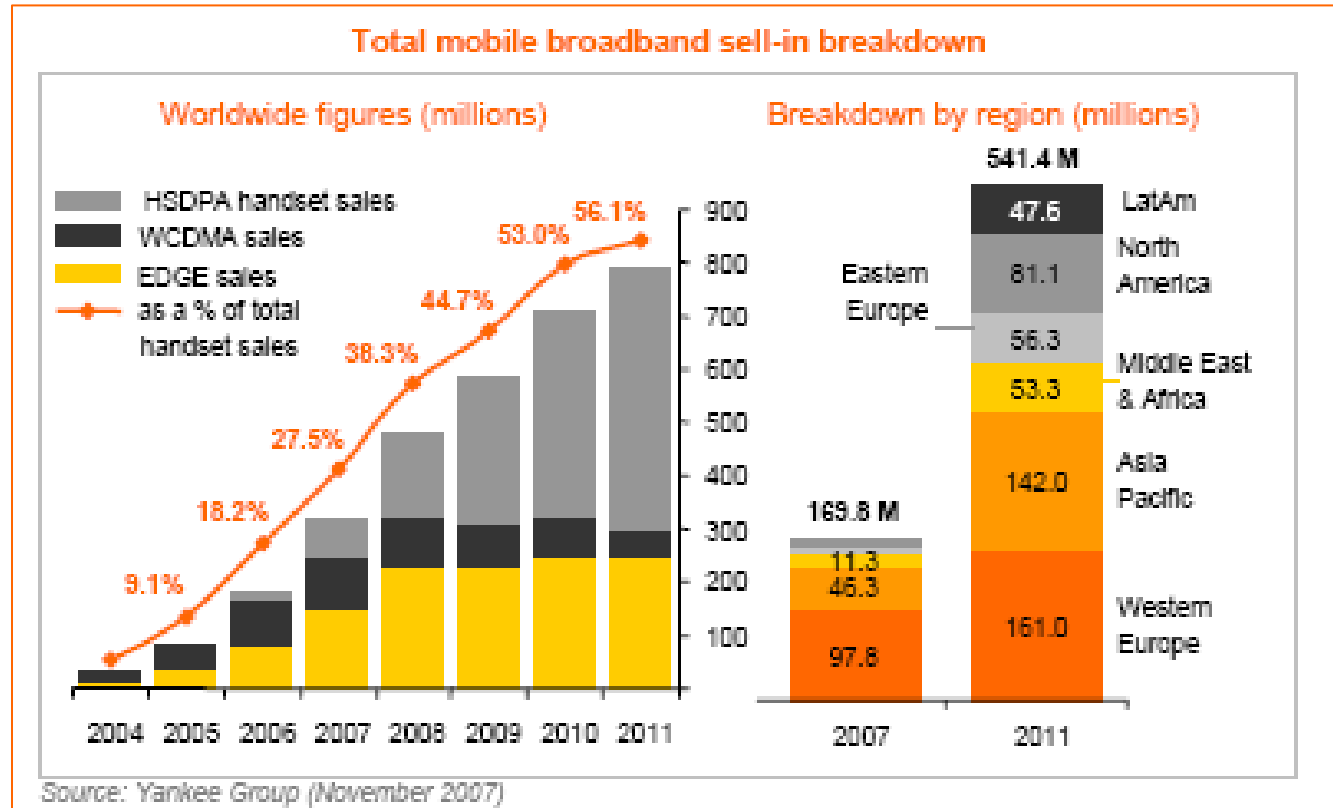
	Abonnés France	Conso par abonné FT
Téléphonie fixe	38.7 Millions	19 kWh/an
Mobile	47.2 Millions	23 kWh/an
Accès Internet HD	10.5 Millions	31 kWh/an

Energy consumption of mobile networks' components

2005	Numbers	Energy (GWh)
BS / NodeB	11000 (10000 in 2004)	233 (265 in 2004)
BSC / RNC	740	9,4
Voice (MSC etc)	NC	35,1
Data (GPRS etc)	NC	3,9
TOTAL (without Thermal Mgt)		281,4



Next evolution



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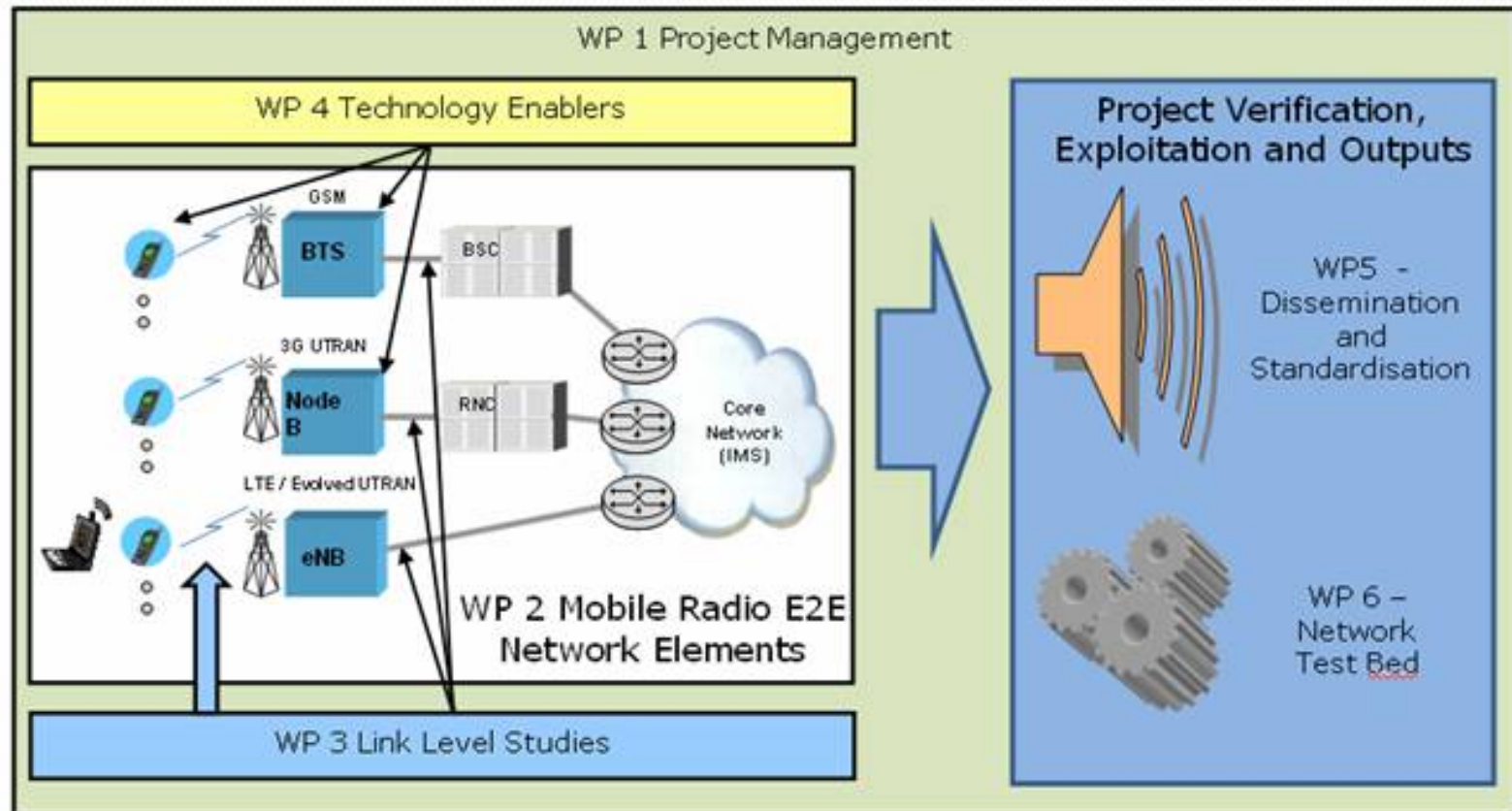
Mobile Broadband growth and future services...

- are compounding power requirements
increasing the risk of delay in launching new technologies
- Is having environmental impact
barrier to the deployment of renewable energy sources
- increasing Capital and Operational expenditure to a non sustainable level

Core Project – Start Jun '08	Company name (Leading contractor first)	Type (Industry, TelCo, SME, University, Research Institute)
FT	TELECOM	TelCo
ALU IR	ALCATEL-LUCENT	Industry
NSN	NOKIA SIEMENS NETWORK	Industry
VTT	Technical Research Center of Finland	Research Institute
TGV	Thomson Grass Valley	Industry
FSL	FREESCALE	Industry
MOB	MOBISTAR	TelCo
IMEC	IMEC	Research Institute
CU	University of Cardiff	University

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Project Structure :



Main ideas (technical level) :

WP2: KPI for energy efficiency, DC power, cooling system, sleep-mode, energy efficient of cell sizes

WP3: optimization techniques for Link-level power efficiency, energy-aware device (terminals & infrastructure) design

WP4: Energy recovery in Base Stations, improved power efficiency of Next-Generation Terminals

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Optimize power efficiency of radio access networks by radically improving energy efficiency at system, infrastructure & terminal level

- Improve PA efficiency from 25% to beyond 50% in order to
 - save operating expenditures (OPEX)
 - allow larger use of renewable energy sources
 - improve thermal management efficiency and reliability
- Leverage the whole value chain from base level component to end-to-end networks and services

Develop metrics and KPI for mobile network efficiency that become global standards

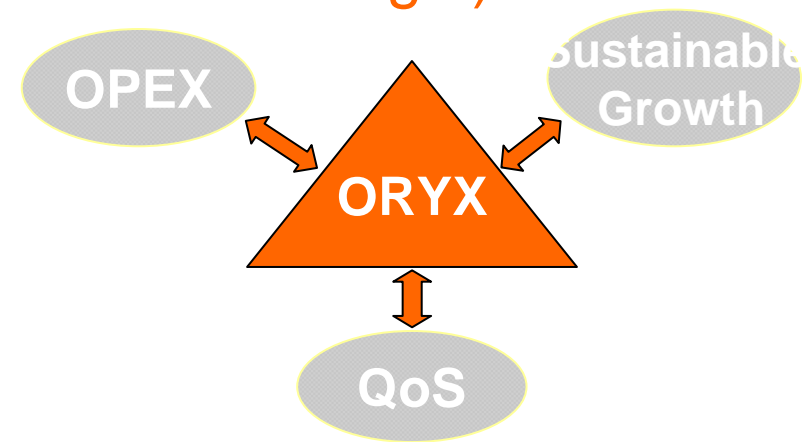
- Leverage on members' participation at ETSI, GeSI...

Enable EU industry to take leadership in an environmentally sustainable mobile networks industry

Address the EU objectives of improving energy efficiency of 20% by 2020

Oryx (35 Solar Base Stations in Senegal)

- Electricity networks in Africa :
 - Electricity supply shortages threatening more and more countries
 - When existing, poor quality of electricity networks
 - High costs and unpredictable time for connection to the grid



- Wide climatic range for telecom equipment
- Optimizing power consumption of BTS
- 100% solar power plants
 - supervised and monitored through GPRS /GSM
 - upgradable and scalable
- Others, research items : possibilities
 - High efficiency solar modules
 - High reliability battery
 - New thermodynamical power solution (Steerling, contrator)



How Orange will reduce your energy consumption ?

“how much you should use electricity in your home”?

Smart electricity Project

Use case

- I know my electric energy consumption any time any where
- I can manage& control it through an energy meter
- I can simply benchmark my household to similar community & home

Orange promises

- Pedagogic information and access to energy coaching
- A simple “**do it yourself**” package with devices (or electric board) powered by industrials.
- A dedicate **energymeter** device in link with legitimate partnership



Orange answers



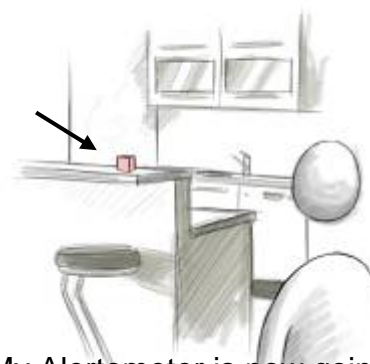
The oven is on
Suddenly my Alertmeter device
go to flashing red



Display, screens, PC,...
I can switch off my PC
Or automatically on stand
by mode



My PC is off now



My Alertmeter is now going to normal

thank you



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