

IT, networks & product innovation

time to market,
quality of service,
and cost
effectiveness

Jean-Philippe Vanot
Vivek Badrinath

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orange™

cautionary statement

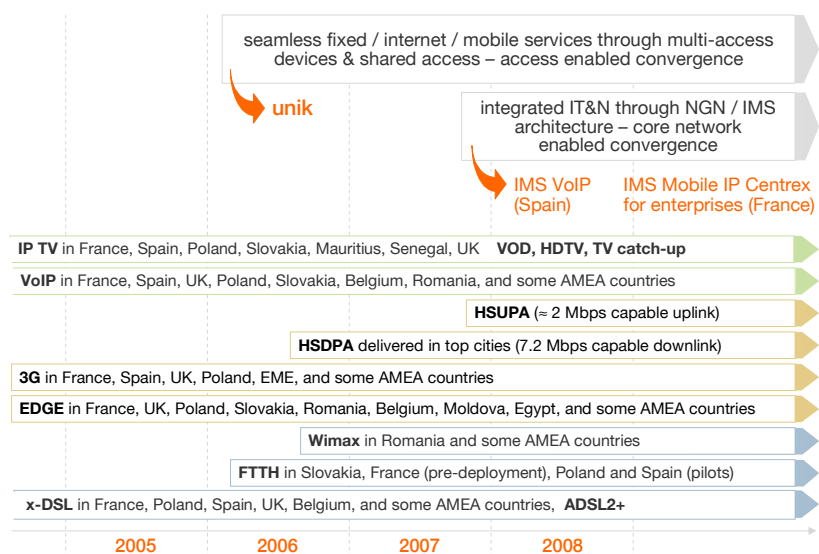
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agenda

- 1 significant achievements over 2006 – 2008
- 2 innovation and marketing:
a focused roadmap towards simpler products
- 3 towards a simple, agile and sustainable IT&N
- 4 levers to optimize performance
- 5 key initiatives summary

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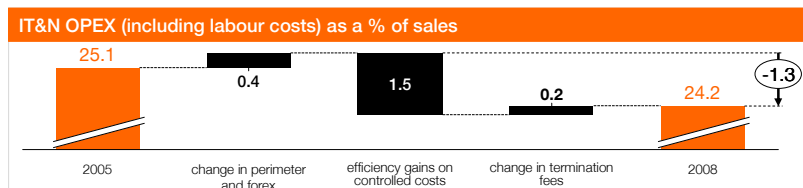
1 IT&N enablers have been delivered as announced



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1 IT&N OPEX has significantly decreased

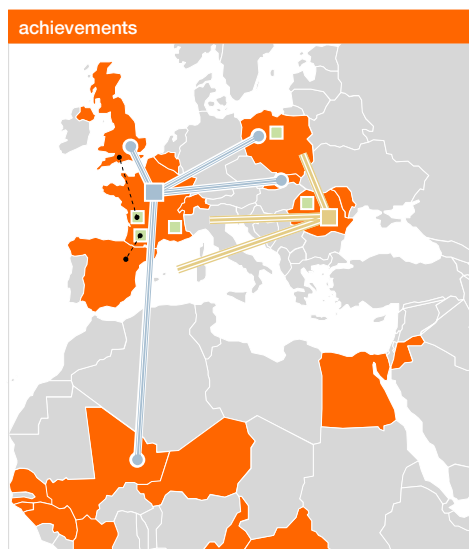
- a single group IT&N organization for fixed / mobile / Internet
- fixed and mobile networks integrated in each country
- a common operation model set up,
 - based on a single country service management centre and technical management centres
 - shared skill / expertise centres per technology, each located in one country for the whole group
- IT&N chantiers deployed in each domain, with numerous levers implemented, e.g.
 - data centres consolidation
 - multi-country shared service platforms
 - technical environment action plan
 - lean management
 - in house vs. outsource optimization
 - site and RAN sharing
 - OSS tools
- termination and roaming part impacted by unlimited offers development



IT&N OPEX to revenue ratio decreased by 1.3 pp over 2006-2008 (vs. 2pp initial objective), of which 1.5 pp improvement for controlled costs

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1 experience and resources have been shared among the ≈ 61,000 IT&N staff within the group



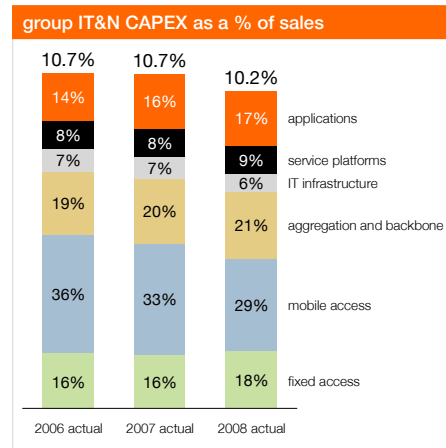
- > 100 IT&N skill / expertise centres implemented in the various countries
 - in charge of technology policy, specification, tests and implementation for each technology
- one single centralized platform for all Orange subsidiaries in ASP mode,
 - e.g. email, identity enabler, Orange windows live, etc.
- one platform solution: one development with several implementations
 - e.g. CRBT, Business everywhere, Orange APIs, VoIP, etc.
- one team in charge of the operation of shared service platforms for Europe countries

example of platforms located in France and operated by France, serving UK and Spain

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1 IT&N CAPEX has been tightly controlled

- group sourcing scale effect
- shared group services set up, building IT and service platforms "GCCs" for all countries
- CAPEX-OPEX (make or buy) optimization
- 2G CAPEX reduced in order to favour high broadband investment



IT&N CAPEX on revenue ratios kept between 10 and 11%

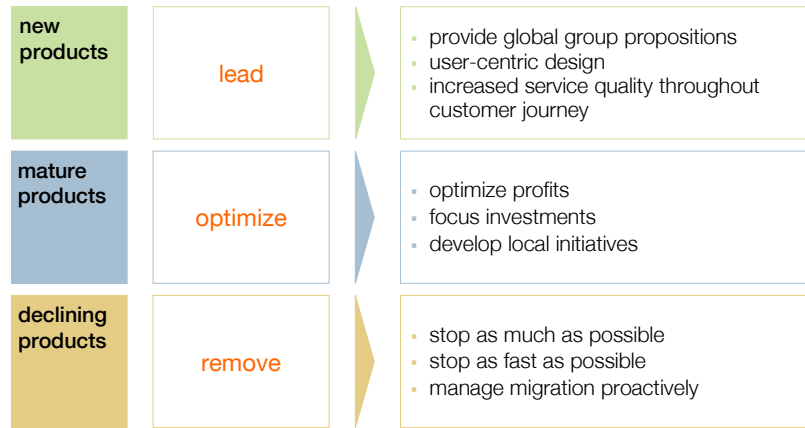
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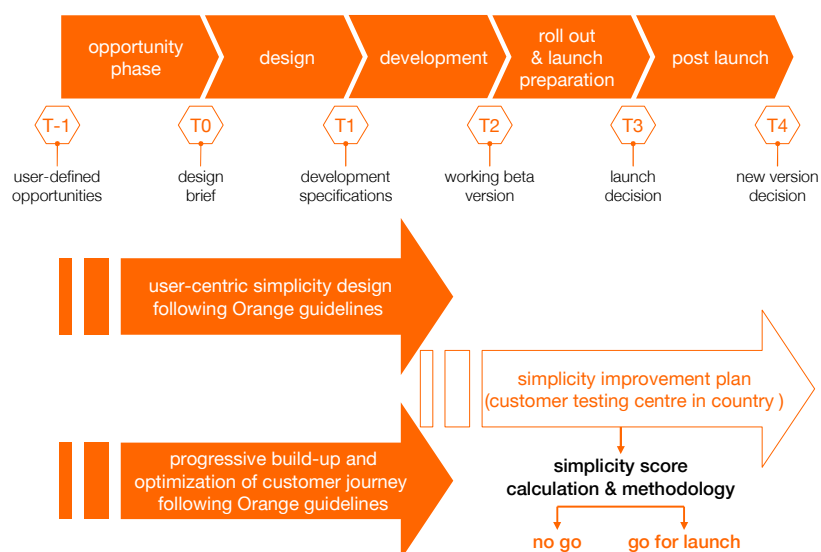
2 | growth from focused innovation delivers more value



- reduction of 15% in new product launches, 20% in innovation projects and 10% in device references

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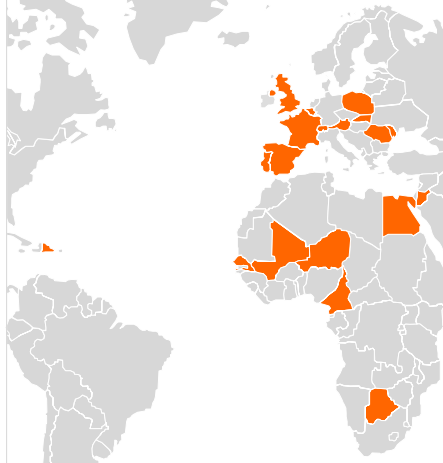
2 | simplicity drives product design and "go/no go" for launch across the group



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2 | developed once... deployed in many countries

replicate previous successes of Business Everywhere and Internet Everywhere: 2.4 million customers in 22 countries* using the same group proposition



- leverage common processes and IT solutions to streamline go-to-market in countries
- support local deployment of group propositions (e.g. multiplay offers) with group expertise
- increase the number of countries deploying group propositions
- simplify product portfolio in each country (pruning)

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* Business Everywhere is offered to multi-national companies in additional territories

2 | powered by... a customer-centric design process



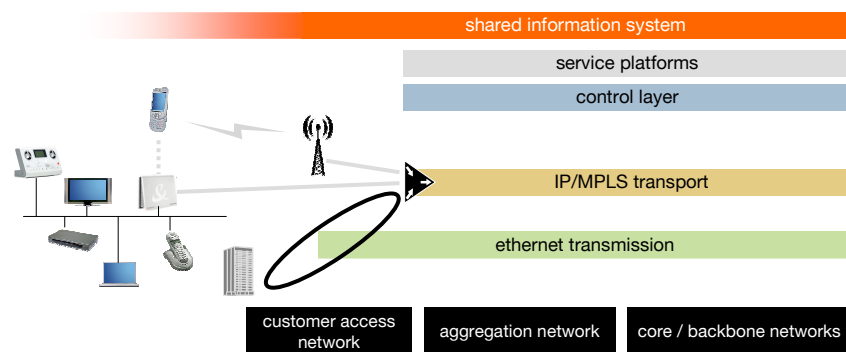
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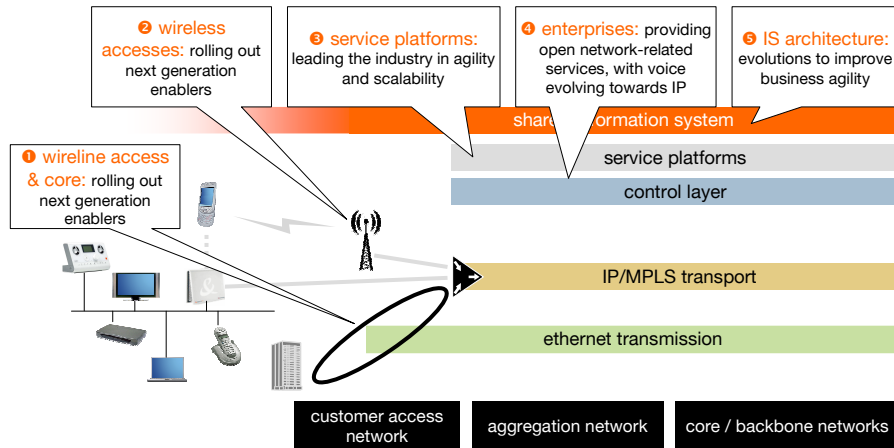
3 | one IT & network: unchanged long term vision



overall vision of IT&N areas and layers

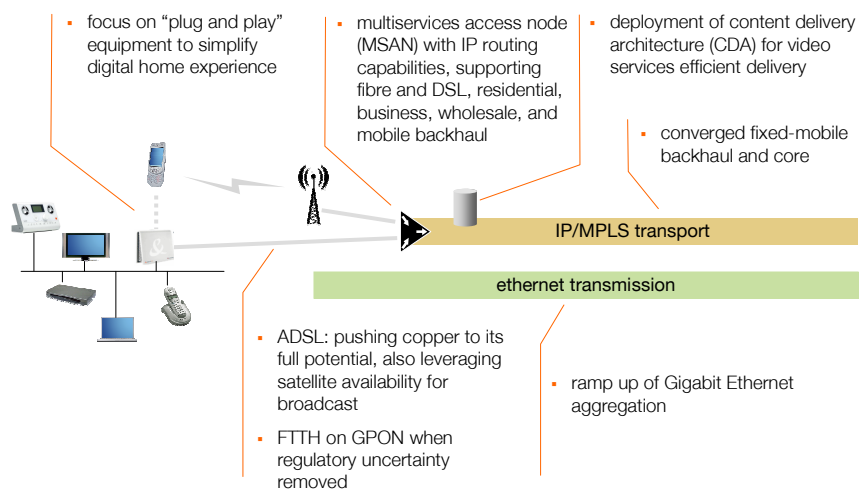
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3 | one IT & network: unchanged long term vision



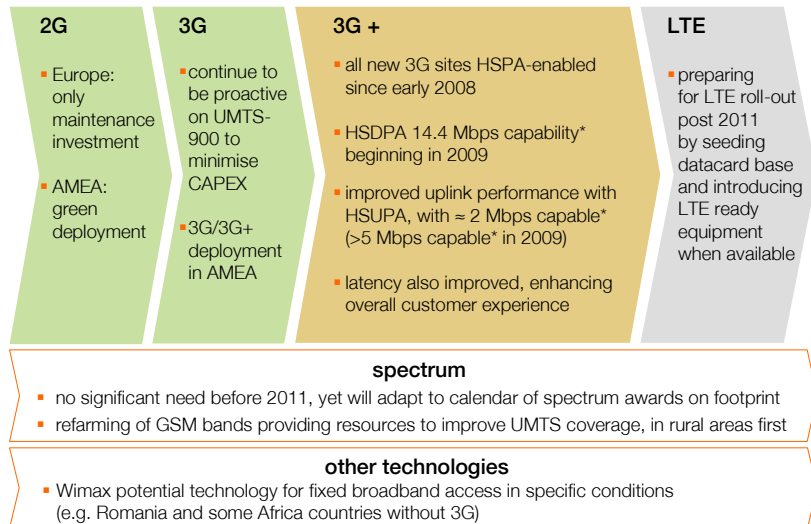
overall vision of IT&N areas and layers

3 | 1 wireline access & core rolling out next generation enablers



a simple and scalable full IP architecture

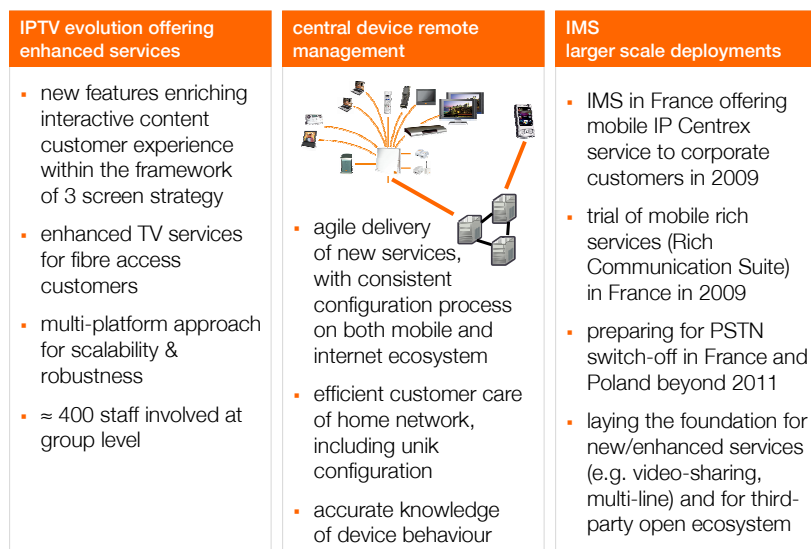
3 | ② wireless accesses rolling out next generation enablers



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* user bandwidth experience rate in typical conditions will be only a fraction of peak theoretical radio throughput

3 | ③ service platforms leading the industry in agility and scalability

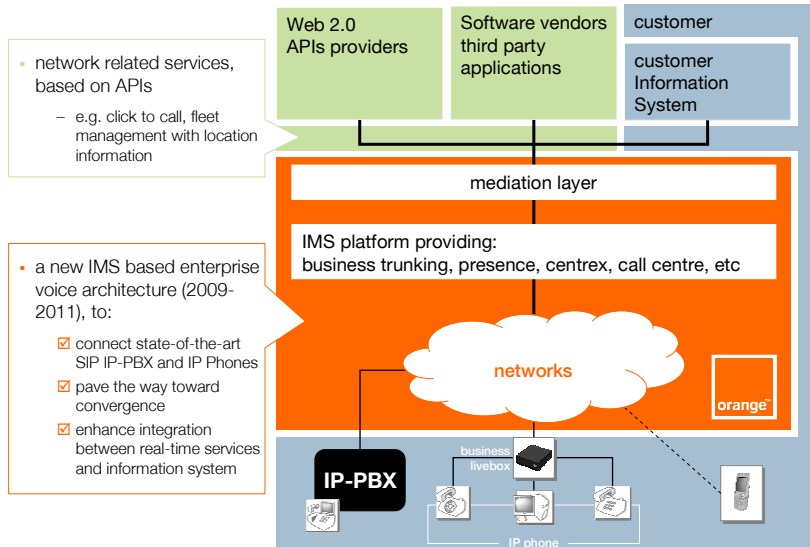


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④ enterprises

providing open network-related services, with voice evolving towards IP

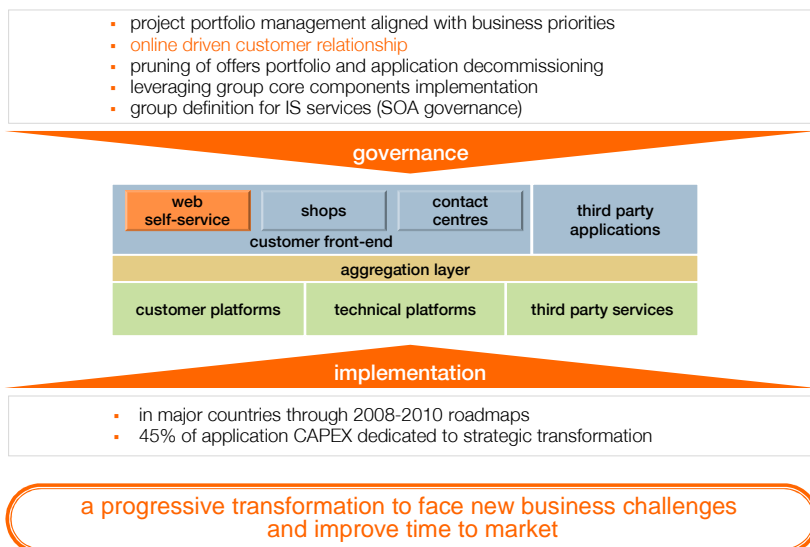


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⑤ IS architecture:

evolutions to improve business agility



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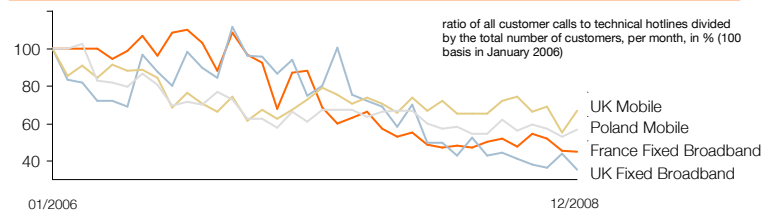
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4 | QoS: a thorough monitoring system in place ...

KPIs defined for each major service and benchmarked in all countries

examples					
	IPTV & VOD	customer satisfaction	customer call centre call ratio	availability	zapping delay
	VoIP	"	"	"	post dialling delay
	3G voice	"	"	"	call success rate
					drop call rate

proportion of customers calling hotlines has decreased by 25-60% over 3 years



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4 | ... to achieve best-in-class quality of service

listening to customers

- through regular customer satisfaction surveys initiated by service management centres (SMCs)
- customer calls to hot line analyzed and relevant actions prioritized by SMCs
- reinforcing link between devices (e.g. Livebox, mobile handsets...) and rest of technical architecture

focus on processes

- SMCs to highlight impact of actions on KPIs evolution and develop "progress management" on selected KPIs
- operations check-list to be applied during "time to market" processes

tools

- dynamic line management (DLM) rolled out for fixed broadband networks
- probes and robots simulating customer experience

group support to countries

- sharing of best QoS practices
- permanent internal and external benchmarking
- group-transverse workstreams leading QoS of major services

a leading role for service management centres implemented in each country

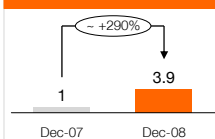
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4 | end user traffic is growing strongly and should continue doing so

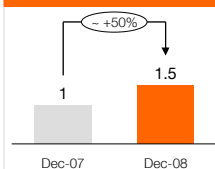
France example

- new HSPA capable devices
- video / internet based services

traffic growth in mobile access¹

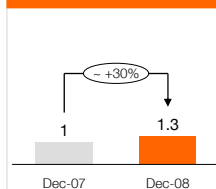


traffic growth in fixed access²



customer access network

peak load in core network³



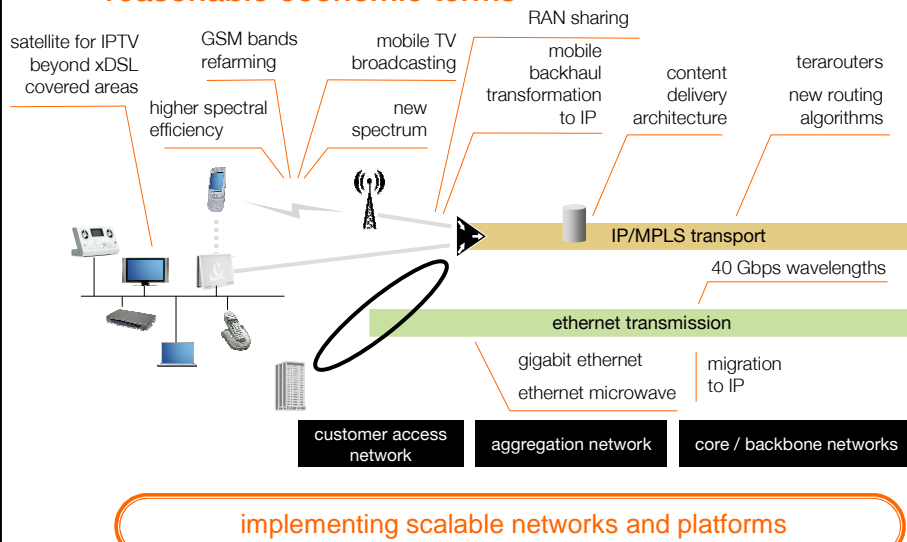
1: in bytes of monthly data traffic
2: throughput for Internet access in bps
3: in bps

domestic backbone

thanks to Orange architecture options and fixed-mobile convergence, dimensioning impact on the core is significantly mitigated

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4 | under adequate pricing conditions, there are levers to meet growing need for fixed and mobile data on reasonable economic terms



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4 | RAN sharing program in Spain is already delivering, an experience which will be leveraged by other countries

target

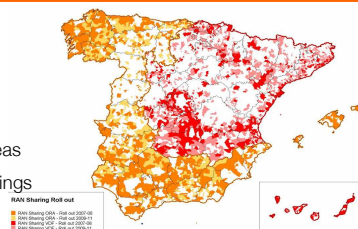
share deployment of 5,000 nodes B with Vodafone

- accelerating UMTS coverage in areas below 25,000 inhabitants
- allowing mobile access to broadband in small cities
- reducing number of sites and environmental impact

achievement

roll out 50% complete, end of 2008

- 2,600 nodes B deployed for both operators
- 27% of 3G traffic originated in RAN sharing areas
- approx. € 75m cumulated OPEX + CAPEX savings



outlook

extension to other countries under investigation

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4 | action plans cover all IT&N areas to further decrease OPEX

levers on IT&N OPEX *

purchase of access and backbone

- shared fixed-mobile access and backbones
- new IP backhaul solutions
- network build: "make or buy" optimization

customer intervention

- real time optimization of technicians' on site visits
- end to end control of delivery and after sales processes

network operation

- operation: in house vs. outsource optimization
- RAN sharing

technical energy

- "green" IT&N

IS applications

- group core components
- application decommissioning

IT infrastructure

- servers and data centres consolidation
- server virtualization

part of OPEX varies according to production and traffic

call terminations and roaming

- marketing offers optimization (on-net/off-net, unlimited/capped offers, pricing)

all categories will benefit from group sourcing

service platforms

- develop once / re-use everywhere

* graph using 2008 figures

overall, OPEX will be contained in spite of increasing volumes and price of some key inputs (sites, power)

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4 | environment focus: a lever for OPEX savings

step up deployment of current levers for network

- **cooling optimization** (extension of temperature range, optimization of ventilation)
- **solar energy** developed in Africa to replace diesel generators in radio stations
- **network sharing** (e.g. RAN sharing)
- **elimination of legacy equipment** with low performance

implement "green" data centre

- **consolidation and virtualization** of servers
- **optimized cooling**
- **hot air** produced by cooling systems **re-used** for heating
- **photovoltaic cells** for office electricity

mid term solutions

- **HVDC** (high voltage direct current) power distribution
- **optimize DSL lines energy consumption**
 - adapt energy level to line length
 - introduce "standby mode"
 - ongoing standardization efforts

> 6,000 virtualized servers on ~600 physical machines end of 2008
> 1,300 pure solar sites and > 1,000 hybrid sites by 2011

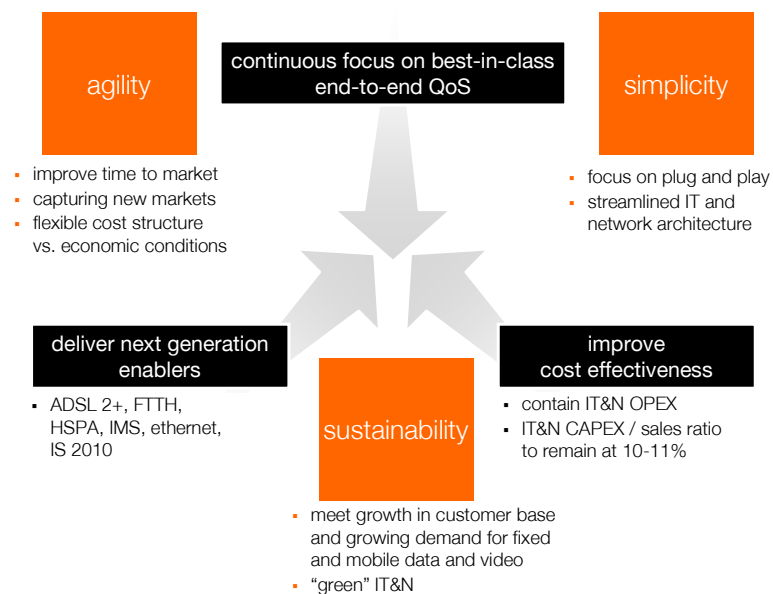
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5 | key initiatives summary



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glossary



glossary ⁽¹⁾

ADSL	Asymmetrical Digital Subscriber Line
AMEA	Africa, Middle East, Asia
API	Application Programming Interface
ASP	Application Service Provider
AUPU	Average Usage Per User
CAPEX	Capital Expenditure
CDA	Content Delivery Architecture
CRBT	Call Ring Back Tone
CRM	Customer Relationship Management
DLM	Dynamic Line Management
DSLAM	Digital Subscriber Line Access Multiplexer
EDGE	Enhanced Data GSM Environment
EME	Europe, Middle East
FTTx	Fibre To The "x", where "x" could be curb, building, cabinet, home, etc.
GCC	group Core Component
GSM	Global System for Mobile communication
HVDC	High Voltage Direct Current
HSDPA	High Speed Downlink Packet Access
HSPA	High Speed Packet Access
HSUPA	High Speed Uplink Packet Access
IMS	Internet Protocol Multimedia Subsystem
IP	Internet Protocol
IRR	Internal Rate of Return
IS	Information System

glossary ⁽²⁾

IT	Information Technology
KPI	Key Performance Indicator
LTE	Long Term Evolution
MPLS	Multi-Protocol Label Switching
MSAN	Multiservice Access Node
NGN	Next Generation Network
OPEX	Operational Expenditure
OSS	Operations Support Systems
PSTN	Public Switched Telephone Network
QoS	Quality of Service
RAN	Radio Access Network
SMC	Service Maintenance Centre
SIP	Session Initiation Protocol
SOA	Service Oriented Architecture
UMTS	Universal Mobile Telecommunications System
VoD	Video on Demand
VoIP	Voice over Internet Protocole
WiMAX	Worldwide Interoperability for Microwave Access
xDSL	Digital Subscriber Line technology

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