Converged Networks: the key to achieve triple play
Agenda

- Convergent services and strategies

- Network evolution towards ICT & Fixed Mobile convergence
Network & service strategy: a new concept of “quadruple play”

Mass Market services
- Communication
  - VoIP
  - Videocommunication
- Collaboration & Messaging
  - Internet
  - Instant Unified Messaging
- Media
  - Video
  - Music
  - Games

Business Market services
- Communication
  - VoIP
  - IP Centrex
  - IP PBX & Contact Center
- Information Services
  - Intranet & Collaboration
  - Messaging
  - Application on demand
- Media
  - Business TV
  - E-learning
F&M Convergent services

Distinctive Brand

Entertainment
- Music
- Film
- Sport
- Calcio
- Televoing
- Rings

Information
- Directories
- News

Personal Communication
- Convergent Voice offer
- Dual mode devices
- Videocommunication
- Instant messaging
- Unified messaging
- Unified directory

Business Communication
- Convergent voice VPN
- E-mail, fax, agenda
- Contacts (Virtual Office)
- Directory
- Unified messaging
- Seamless access
- GPRS/Edge/Umtes/WiFi/Adsl

Usage Mode/Access
- Internet
- Videocomm
- SMS
- MMS
- Audio/Video Streaming

Terminals
- TV Set
- Top Box
- Mobile Handset
- Dualmode Handset
- Corded Videophone
- PC

Distinctive Brand
Multimedia convergent services: PC & TV based entertainment

**From PC...**

- 400,000 songs library, concerts and live events
- Live "Serie A" soccer matches (rights acquired up to 2007)
- Key live events
- 310 Movies each year, a 200 titles catalogue and 20/30 new titles/month
- 400,000 songs library, concerts and live events
- Live Soccer, Basket, Sailing, Reality Shows, Movies...

**To TV**

Internet access ... Alice

4 Mega

### Content on PC and TV

<table>
<thead>
<tr>
<th>Internet</th>
<th>Browsing, mail, (etc.), available on PC and TV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sport</td>
<td>Live &quot;Serie A&quot; soccer matches (rights acquired up to 2007)</td>
</tr>
<tr>
<td></td>
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</tr>
</tbody>
</table>

- June 05 – pre-commercial launch in 4 cities: Roma, Milano, Palermo, Bologna
- 4Q ‘05- extension to other 17 cities (20% of Italian families, 3.6 million lines) and integrated IPTV/DTT STB
- 2006-2007: further coverage extension

Further technological integration with DTT (set top box)
Multimedia Convergent Services: BB experience in the mobile world

Access to the services via the TIM WAP 3G Portal (xHTML)

Wherever you are!

A New Way to Communicate!

Entertainment
✓ Mobile TV
✓ Multiplayer Gaming
✓ Serie A TIM (Football)
✓ i.Music Store (library, concerts and live events)
✓ Surfing Internet

Personal Communication
✓ File/Video Sharing
✓ VideoCall
✓ Community
✓ Push to talk
Tomorrow’s Networks Today

ICT Convergent services: to complement the business services offer

Outsourcing Services of TLC and IT services
Agenda

- Convergent services and strategies

- Network evolution towards ICT & Fixed Mobile convergence
New Network Convergent Model

Service Management Platform

- BUSINESS x OPERATION SUPPORT SYSTEM (BOSS)
- PERSONAL COMMUNICATION
- ICT APPLICATIONS
- MEDIA & ENTERTAINMENT

Optical Packet Metro (OPM)
Optical Packet Backbone (OPB)
Service Control Layer

Intelligent Devices & Broadband Access
- Mobile Access (MAC)
- Wireline Access (WAC)

Convergent Applications
- Business x Operation Support System (BOSS)
- Personal Communication
- ICT Applications
- Media & Entertainment

Multiservice Core Network

Service Management Platform
Fixed & Mobile convergent evolution: state of the art 2005

Mobile Network

Fixed Network

Service Application
- Vertical platforms mobile services

Service Control
- UMS/HLR
- STP+MSC Transit
- MSC Server
- CSCF

Packet Backbone
- Mobile IP Backbone

Distributed Service POP
- MSC
- VLR
- MGW
- SGSN
- GGSN

Packet Metro
- Mobile IP Backbone
- STP
- IMS
- UDB

Integrated backbone OPB

Access
- 2G Radio
- 3G Radio

Terminals & CPE

OSS & Security Platforms
- Integrated backbone OPB
- UDB
- PE/RA
- MGW
- LEX

Mobile & Fixed Network

RGW
Fixed & Mobile convergent evolution: 2008 target

Fixed - Mobile & IT platforms convergence

Service Application

IT based Integrated services platforms

Person to person
Application to person
Multimedia casting

Service Control

QoS
MSC Server
CSCF
IMS Model
HLR
AAA
HSS

Packet Backbone

ASON-GMPLS
T-Router
ODXC

Distributed Service POP

MSC
VLR
MGW
GGSN
Multiservice Edge Node
MGW
LEX

Packet Metro

GbE/CWDM/DWDM

Access

2G/3G Radio
UMA
BWA (WLAN)
IP DSLAM
IP/LS

Terminals & CPE

HSDPA
HSUPA
Dual Mode Wi-Fi
RGW

GRUPPO TELECOM ITALIA

Tomorrow’s Networks Today

Mobile & IT platforms convergence

fixed
mobile
integrated

Integrated OSS & Security Platforms

mobile
fixed
integrated

massimo Corronari
Broadband access coverage evolution

2005
The right time for IPTV introduction!

...stronger push on UMTS coverage

HSDPA introduction in strategic areas
~ 1Mbs
80% Population coverage

~ 11,000 sites

2004 2005 2006 2007

2005
The right time for 3G acceleration!

...xDSL coverage extension

ADSL2+ introduction
~ 6,800 sites
97% Population coverage

up to 20 Mbs

2001 2003 2005 2007

Broadband evolution is a requirement for the convergence
Broadband fixed access evolution

- ADSL profile “4096/640” kbit/s allows one TV quality video channel to more than 85% of the Italian telephone customers.
- ADSL2+ and VDSL2/FTTX solutions necessary for multiple TV channels and HDTV.
Tomorrow’s Networks Today

Metro/regional convergent network evolution

- Access networks evolving towards IP DSLAMs
  - Metro networks based on Metro Eth and xWDM rings
  - Backbone network based on IP/MPLS and ASTN paradigm
New NGN Multiservice convergent PoP
Fixed & Mobile application service convergence: IMS/NGN model

Common Application Services
- Mobile & Fixed Content
  - Video
  - Games
  - Music
- Rich voice & Multimedia
  - Mobile services
  - Fixed Services
  - SMS/MMS/VDC

Control
- DB
  - Content Control Platform
- HSS
  - Information
- CSCF
  - SIP
- GW
  - Gateways

Users
- Access and core Network
  - UMTS
  - Wired Customer
  - Hot Spot

Legacy Networks
- PSTN
- GSM

Fixed & Mobile application service convergence: IMS/NGN model
ICT services convergence: co-operation with vertical platforms

Outsourcing services

- Open Management Platform
- Desk Top Mgn
- LAN Management
- Security mgm
- Disater recovery
- Business continuity
- Application mgm...
- ........

Access and core IP Network

- Web & IDC Services
- RT Collaboration
- IP Centrex
- RT Communication

Microsoft

- Copernico SIP Server
- SIP
- Gateways

2G/3G

PSTN

Corporate Customer

- Corporate Services
- LAN
- WiFi

Webmail

WEB

- Active Sync
- SyncML
- OMA

Device (Fixed and mobile)

SMS e Fax

2G/3G

PSTN

Corporate Customer

- Corporate Services
- LAN
- WiFi

Webmail

WEB

- Active Sync
- SyncML
- OMA

Device (Fixed and mobile)

SMS e Fax
New IT-based convergent model for OSS & BSS

- CRM
- DATA WAREHOUSE
- BILLING
- CREDIT MANAGEMENT
- SERVICE DELIVERY
- SERVICE ASSURANCE
- TRAFFIC & USAGE
- NETWORK MANAGEMENT
- CUSTOMER INVENTORY
- WORK FORCE MANAGEMENT
- NETWORK ELEMENT MANAGEMENT
- NETWORK INVENTORY

Network Neutral EM Layer:
- Activation
- Fault
- Auditing
- Performance
- Usage

IDC

Network elements

Home/Office Terminals
Conclusions

- Broadband continue to have a booming growth:
  - xDSL is going to become the new personal fixed phone line for each member of future households
  - UMTS/HSDPA and WiFi will enable broadband services in mobile and nomadic environments

- The rush to the fixed mobile convergence is started and the Service Providers will try to gain competitive advantages from the new service opportunities offered by the BB and ICT technologies

- Value Added Services are ready for the market: Rich Voice, Entertainment, IPTV, Real time collaboration and cooperation on both fixed and mobile accesses

- Intelligent Devices: terminals, PDAs, appliances, home servers are key components for a fixed mobile convergent architecture enabling a seamless customer experience

- Progressive convergence of IT & TLC markets will combine the use of communication, networking and IT services/applications