EMERGENCE DES RESEAUX TRES HAUT DEBIT
Mission ECOTER - Journée d'Etude - Paris, 4 Novembre 2003

ITALTEL
Evolution vers les Réseaux et Services de Nouvelle Génération

Anne Lozachmeur – Business Development Manager – Sales Operations France & BeNeLux
Evolution towards New Generation Networks (NGN)
Public Network evolution path

Past: Circuit
- Leased Line
- Mobile
- PSTN
- Dial-Up Internet

Present: Hybrid
- Mobile
- PSTN
- FR/ATM
- Broadband Services
- Optical
- High-Speed Internet

Future: Packet
- Mobile
- Consolidated Packet Multi-Service Architecture
- Broadband
- PSTN

Packet migration is underway Worldwide
Service Providers evolutionary strategy

Network Convergence

Network Rationalization
Network Expansion

Operator Push
Subscriber Pull

Today

Two strategic levers to increase competitiveness

Increase ARPU & AMPU(*)
Subscribers retention/attraction

Winner's path

(*) ARPU: Average Revenue per User
AMPU: Average Margin per User

Mission ECOTER – 4 Novembre 2003, Paris
To provide to Telco the proved and carrier grade solution to successfully migrate to a voice-data and video integrated network for the new communication services of the telco economy.
## Italtel Business Lines

<table>
<thead>
<tr>
<th>Description</th>
<th>Proprietary Products</th>
<th>Network integration</th>
<th>Professional services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research and Development, of NGN infrastructure and services</td>
<td>Design, planning of turnkey network solutions focusing on solution integration</td>
<td>Low level design, commissioning, post-sales support for SP networks</td>
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</tbody>
</table>

### Main Customers
- Installed base:
  - > 2 Mil. VoIP DS0
  - 28 Mil. TDM lines
- VoIP customers:
  - Telecom Italia
  - Fastweb
  - Albacom
  - Fastweb
  - Omnitel
- Leadership in Italy
  - Telecom Italia
  - TIM
  - Wind
  - Albacom
  - Fastweb
  - Omnitel
- Excellence in Spain, Latin America, ...

- 20+ customers
  - Telecom Italia
  - Wind
  - Fastweb
  - Albacom
  - Achanto
  - Omnitel
  - Freenet
  - Telgua

### Our Customers: all operators
- Fixed, Mobile, ISP
- City, National and International
Italtel today’s solution range for NGN/NGS

**iMSS**

**Voice Switching**
- iMSS - Class4 Switching
- iMSS - Class5 Switching
- iMSS - Network Server
- iMSS - SS7 Internet Dial-Up

**Next Generation Services**
- Web Based Telephony
- Multimedia IP-Centrex
- Unified Messaging
- Multimedia Communication
- Personal Call Management
- IN Advanced Services

**Next Generation Networks**
- iMSS - Multiservice Trunking
- iMSS - VoIP to PSTN interworking
- iMSS - Class 5 Switching Evolution
- iMSS - Broadband Local Communications
- iMSS - Broadband Business Telephony
NGN/S Fast Track in Europe
Success Stories
• +3 billion minutes of telephone calls a year running over VoIP
• Telecom Italia to save two thirds of its transit operating expenses
• “By the end of 2003, we estimate that 80% of Telecom Italia’s transit voice traffic will travel over the Cisco Systems and Italtel Multiservice solution” Stefano Pileri, head of Telecom Italia’s domestic network.
• Two distinct networks implement the Italtel/Cisco solution:
  – National Transit Network (BBN)
  – Pan European Backbone (PEB) network
Telecom Italia - Phases Towards NGN

- Phase 0: Pan European Backbone (PEB): VoIP on the international network
- Phase 1: National Backbone Class 4 (BBN): VoIP at the national transit exchange level
- Phase 2: Native VoIP services over broadband accesses: Class 5 Softswitch for broadband corporate customers and SOHO
- Phase 3: Next Generation Class 5 (CL5-I): VoIP at the local exchange level
“Once the migration is complete, the company expects to realize operational cost savings of 66%. [...] Around 17 billion minutes of voice traffic a year are now traveling over the IP network, invisible to the user. The first step was transitioning traffic traveling within a single Italian region - about 70% of this traffic (10 billion minutes a year) now runs over the IP network. The larger, more complex project was the migration of inter-regional traffic. At the moment about 30% of that traffic, 6 billion-7 billion minutes, runs over IP.

Stefano Nocentini, head of Telecom Italia's wireline network
Total Telecom.com – April 4, 2003

“We chose VoIP because we could save two thirds of our transit operating expenses and give our customers and shareholders a better service. By the end of 2003, we estimate that 80% of Telecom Italia's transit voice traffic will travel over the Cisco Systems and Italtel Multiservice solution. We chose Cisco Systems and Italtel because they had the most reliable solution. Cisco Systems has more experience in IP technology and VoIP than any other infrastructure company and the partnership with Italtel provides additional expertise in the switching carrier environment”

Stefano Pileri, head of Telecom Italia’s domestic network
FINANCIAL TIMES Wednesday Oct 9, 2002

“An international, cross-border, transport network that oversteps the bilateral connections of traditional legacy networks has a two-fold strategic value: on the one hand, operating costs are more competitive and on the other, Virtual Switch technology allows for extremely easy and flexible management of traffic flows. [...] Italtel’s contribution is very worthwhile and effective, especially in terms of technical expertise “.

Roberto Colantonio, Manager of System and Application Development for Telecom Italia’s international network
Atlanet: Class 4, Class 5, Internet Dial-up offload

- Focused on optimising backbone & interconnect costs
- Operating since 2001 with real live traffic
- 24 PoPs total
- 100% of Voice traffic is on VoIP.

(*) TDM not always present (Light POP)
Operating since 2000
Already 7 voice POPs installed
160 million minutes/month currently handled
About 134,000 active users connected through Fiber To The Home
Network is already transporting over IP all voice, video and data traffic
- **Italtel Softswitch Technology** for centralized cost efficient switching and port control
- Centralized iMSS (2 sites) controlling Universal Gateways in 14 PoPs
- **Cisco AS5000 universal port** for flexible interconnect of ports for voice and dial
- More than 11,000 universal ports for voice or dial-up calls

**Freenet:** Class4, Dial Up off Load, Multiservice Trunking
Fixed Networks - iMSS Main References in Europe
• iMSS platform is successfully in field handling **over 2,500 Million minutes/month** of live traffic (**30 Billion Minutes/Year**)  
• Total number of **ports** controlled by iMSS Softswitch are **> 2,800,000**  
• Largest iMSS installation in Italtel export market has been handling more than **2 Billion call attempts of live traffic in the last 12 months**  
• A list of **15 different customers** (20 projects/networks in operation) are already making their business with Italtel iMSS in **15 different countries**  

• Market Report: Infonetics Research (2Q03 Report): Italtel is the **second largest Next Gen Softswitch vendor worldwide**, with an overall **DS0 market share of 21% from 2002 through 1H03**
Italtel Main References
Evolution towards
New Generation Services (NGS)
## Segmentation of New Generation Services

<table>
<thead>
<tr>
<th>Name of the service/ segment</th>
<th>Target and user segment</th>
<th>Residential</th>
<th>SoHo</th>
<th>SME</th>
<th>Corporate</th>
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<tbody>
<tr>
<td>- Basic phone service from PC</td>
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<tr>
<td>- Internet call waiting</td>
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<td>- On-line gaming</td>
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<td>- Multimedia messaging</td>
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<tr>
<td>- Click to dial</td>
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<tr>
<td>- Multicasting audio &amp; video services</td>
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<td>- Video on demand</td>
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<tr>
<td>- Collaborative video conference</td>
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<tr>
<td>- Enhanced centrex</td>
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<td>- Enhanced VPN</td>
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<tr>
<td>- Network based Call Center</td>
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<td>- …</td>
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Enhanced Billing
Different OPERATOR STRATEGIES lead to DIFFERENT SERVICES BUNDLES

OPERATOR should provide EFFICIENT and FAST SERVICE CREATION/CUSTOMIZATION to tailor services and to combine predefined features

Predefined features

Unified Msg.
One Number
Unified Prepaid
VPN

Integrated Billing System

One number
Credit limit, common account
One bill
One mailbox

Short codes, CUG
Services for Residential subscribers

- ISUP Trunks
- ISDN DECT (+SMS)
- Traditional Services (legacy devices)
  - Voice Calls
  - Supplementary Telephony Services (CLIP, CF, ...)
- Multimedia Services (innovative devices)
  - Web Self Provisioning
  - Personal Call Management (personal profile)
  - PC Telephony
  - Interactive TV
  - Home Control
  - Home Portal

Voice, Video, Applications

Application Servers

SIP

iMSS Softswitch

Trunking Gateway

ISUP Trunks

MGCP/H.248

H.248

Multiservice Gateway

PSTN

IP Broadband Access

IP Core Network

V5.2

V.5.2

POTS PHONE (+SMS)

ISDN DECT (+SMS)

IAD

IP Video Phone

WEB Phone

CPE

STB – Click To Dial

TV-SET
Innovative Residential Services: Video-on-Demand with Premium Content

**U.S. Major Film Studios**
- First VoD licensing agreements with 20th Century Fox, Universal Studios, Discovery Networks and DreamWorks in Italy

**Italian distributors**
- Content from the leading independent distributors Mikado, BIM and Ripley

**VoD ARPU grows to over 7 Euro per month from 5 Euro at the end of 2001 (over 40% increase)**
Innovative Residential Services:
Content Agreements with RAI, STREAM and TELE+

- **RAI**
  - Launched during 2Q 2001
  - Fully interactive TV
  - x,000 titles available from RAI’s archives and current programming

- **Stream & TELE+**
  - Satellite theme and pay-per-view channels by Stream (NewsCorp) and TELE+ (Vivendi)
  - Revenue sharing agreements
  - Additional revenues for FastWeb at no incremental cost
Video Communication for Families

✓ Service available through standard TV and telephone appliances

✓ Full interactivity and TV quality

✓ Functional with traditional ISDN video conferencing systems and with PC-based web-cameras

✓ Option for privacy
Web Based Telephony - Second Virtual Line

- Video Call
- Chat
- SMS
- Audio Call

Audio Call Features:
- Call received
- Call originated
- DTMF code

Video Call Features:
- DTMF code

Chat Features:
- DTMF code

SMS Features:
- G.723.1, G.729ab, G.711

CLIP, CLIR
- CFU
- CF on Busy
- CF on User Not Reg
- CF on No Reply
- Call Barring
- Call Waiting
- Call Hold
- Call Transfer
- Three Party Conf
- MWI

Packet Features:
- Packet send
- Packet received
- Packet lost
- Jitter delay
Public telephony from any Multimedia PC using Internet connection
Services for SoHo

Traditional Services (legacy devices)
- Voice Calls
- FAX

Innovative Services (new devices)
- Voice on IP devices
  - Fixed & Wireless extensions, Hard & Soft terminals
- Supplementary Telephony Services (CLIP, CF, ...)
- Web Self Provisioning
- Presence, Directory
- Personal Call Management (Outlook Integration)
- Office Control (WiFi Camera)

iMSS
Softswitch

Application Servers

SIP

IP Core Network

Trunking Gateway

MGCP/H.248

PSTN

TDM Exchange

Application Servers

IP Phone and FAX

IAD

Multi ISDN and FAX

Application Servers

IP Phone and FAX

IAD

CPE

WEB Phone (PC and PDA) & Remote Control

WiFi
Services for SME

IP Core Network

IP Broadband Access

Traditional Services (legacy devices)
- Voice Calls
- FAX

Innovative Services (new devices)
- Voice on IP devices
  - Fixed & Wireless extensions, Hard & Soft terminals
- Tele-Working
- Applications Integration

Desk based IP Video Conference

Personal Call Management (Outlook Integration)
Services for Large Corporate / Public Administration

IP Broadband Access

Traditional Services (legacy devices)
- Voice Calls
- FAX

Innovative Services (new devices)
- Voice on IP devices
  - Fixed & Wireless extensions, Hard & Soft terminals
- IP-PBX Support
- Multimedia IP-Centrex
- Tele-Working

Desk Collaborative Working (application sharing & videoconference)
- Intranet Web site
- Company Web site
Conclusion
PTT main concerns in migrating to NGN

• Maintain established service level agreement
• Retention of “top” customers
• Support legacy: TDM access and switching networks, service platforms (IN), billing systems, operational processes
• Migration strategy with no service and business affection
• Reduce OpEx: personnel, real estates, energy, leased lines
• OSS reliability as a key success factor for NGN
• Scalable and flexible solution
• Regulatory features: LNP, Lawful Interception...
Operator’s needs:

- Quickly reach region / nationwide coverage with a future-proof architecture
- Generate churn of business and high-end customers
- Efficient collection of Internet dial-up calls
- New revenue sources at a competitive price
NSP main concerns in migrating to NGN

• Smooth investments growth (pay as you grow, low CAPEX)
• Enlarge geographic coverage
• Bundling of traditional and innovative services to attract new customers
• Investment focus on innovation
• OSS/provisioning automatisation as a key success factor
• Turn-key approach: design, installation, commissioning, operation
• Regulatory features: LNP, Lawful Interception…
Key messages from the market

• Building a credible migration path to NGN/S, managing legacy networks and services, is a critical success factor
• High Availability is still a must in the TLC arena : 99.999%
• Interoperability is the key for long term investments : Full IP Driven, Open platforms
• No more “Protocol religious war” : clear Business Case is the only driver
• No “off-the-shelf” solutions in TLC market : flexibility and customer adaptation required
• Speaking “VoIP” is easy, running “VoIP” requires expertise
Our customers expect big results.

We give them the tools.

Merci de votre attention

ITALTEL
Roots to the future