Residential Voice over Broadband

Technical Overview

We Create the Network,
You Create the Value
Market trends

A number of trends in the Telecommunications market are driving the cost-effective deployment of voice services over broadband access infrastructure:

- Market penetration of broadband Internet has reached a critical mass in many locations, providing a large potential market of subscribers for voice services. As shown in the chart, the number of residential broadband subscribers in EMEA & LATAM is expected to reach about 180 millions (including xDSL and FTTP access networks) in 2010 and to exceed 240 millions by 2012. In several key markets the number of broadband subscribers already exceeds the number of dial-up Internet subscribers.
- Several innovative and traditional service providers have launched VoIP services for residential broadband users (e.g. BT, SFR, Tellas, Telecom Italia, …)
- The use of modular, standards-based, IP network infrastructure and components enables cost efficiency at different points of scale.
- Availability of low-cost, QoS enabled residential voice gateways.

Looking at the EMEA & LATAM markets, some of the most promising technologies for broadband access are the xDSL and the Fiber To The Premises (FTTP). Considering the existing deployments, they appear to be also the most suitable ones for the support of commercial VoIP based services.

In order to support service providers willing to enter in this emerging market, Italtel & Cisco have designed and implemented together a solution called RVoBB (Residential Voice over Broadband) that specifically addresses the delivery of IP-based voice services to residential and SME customers for xDSL and FTTP access infrastructures.
RVoBB Solution Description

This solution offers service providers the capability to deliver voice services, over broadband access networks, to their residential subscribers using low-cost CPE devices in a scalable manner; there are two major options in terms of market offering: low-cost additional voice lines (i.e. the traditional voice line is maintained as it is, and more lines are added using VoIP) or a substitution of existing TDM service with a VoIP-based one. The first option is suitable for an incumbent service provider that doesn’t want to jeopardize the existing voice services or for challenger operators that are willing to enter into the market with an innovative offering. The second option is suitable for challengers aiming to bundle broadband access and voice services at a nominal incremental cost.

The proposed solution is all about the network foundation and call-control and application intelligence to deliver integrated voice, data and video services for residential users over a variety of broadband access technologies, paving the way to triple play services.

The Cisco and Italtel proposition sets up a robust IP-based infrastructure capable of supporting a variety of services and creates a service-level architecture to deliver feature-rich VoIP applications.

This architecture framework allows the support for multiple access technologies as well as several call control signalling protocols like SIP, MGCP-Line and H.323. Such variety of protocols is necessary to address different type of end-users voice terminals, like POTS and ISDN phone & FAX connected to a large list of tested voice gateways (i.e. CPE/IAD), native IP-Phones and PC Clients. Standard open interfaces are provided, allowing 3rd party vendor components to be utilized in the overall design.

The key element in RVoBB architecture is the Italtel Class Independent Softswitch (i-SSW); this platform offers VoIP services with high QoS (Quality of Service) and allows the supply of a large set of traditional services (e.g. Call Forwarding, Call Waiting, etc.), Operator services (Lawful Interception, Number Portability) and innovative multimedia services in cooperation with external Application Servers (AS).

It’s worthwhile to note that the same platform can be expanded in order to support Business Voice application like the available Cisco and Italtel IN-BVS solution with Cisco Unified CallManager as described in a separate document.
RVoBB Solution Components

The RVoBB solution components include:

- **call-control and signalling devices**: Italtel i-SSW Class Independent Softswitch, Italtel Application Servers, 3rd party Application Servers, Cisco H.323 gatekeepers
- **voice trunking gateways**: Cisco AS5xxx and Cisco MGX 88xx Series carrier voice gateways
- **several CPE and integrated access devices** (e.g. Cisco, Telsey, OneAccess, AMBIT, Comtrend, Linksys, Sagem, …)
- **other peripheral components**: application servers, announcement and media servers (like Italtel i-AS), billing devices and route servers
- **management layer**, with the element managers and the high level OSS for Billing, Service Assurance, Fault Management, Performance Management, etc.

Last but not least, a professional services package for installation, configuration and deployment of the solution is also offered as an option within the scope of the solution, allowing the service provider to launch the service in a timely manner.
RVoBB Solution Value Proposition

The Residential Voice over Broadband solution allows service providers to capture next-generation services opportunities and helps them to:

- Retain and expand customer base, fending off the competition coming particularly from mobile operators.
- Deliver multiple revenue-generating services over a single access infrastructure, increasing the ARPU.
- Provide low-cost additional virtual lines using only one copper pair, to increase voice traffic and to improve the gross margin per user (GMPU).
- Satisfy a diverse portfolio of users by supporting different innovative devices (multimedia PCs, IP phones, digital enhanced cordless telecommunications [DECT], or Wi-Fi phones).
- Become market innovators in fixed-communication services with the introduction of innovative mobile-like applications and devices.

Examples of benefits from the end users' point of view are:

- Rely on more competitive service offerings.
- Experience increasingly advanced triple-play services, with a specific focus on multimedia communications and on-demand content.
- Personalize the fixed communications: offer one phone number for each family member, with personalized services and applications, over a single telephone line.
Cisco and Italtel Value

The Cisco and Italtel alliance takes advantage of the complementary nature of the two companies: Italtel is market leader for softswitch technology and has a valuable and unique experience in VoIP, while Cisco is market leader in IP networking and IP Communications. In this way, Cisco industry-leading IP infrastructure equipment is completed by Italtel state-of-the-art softswitch platform.

Cisco and Italtel are uniquely positioned to help deploy voice services in a cost-effective, scalable and reliable manner over a converged IP network. Their continued participation and commitment to standardization organizations has contributed to greater interoperability, as well as more mature and robust architectures aimed at fulfilling carrier grade service provider’s requirements.

Cisco’s and Italtel’s accumulated experience with these deployments and best practices has been used to refine both product and solution designs. This enables operators to leverage their experience and achieve solid results in a shorter time frame.

In particular, Italtel and Cisco have been deploying VoIP infrastructures for service providers since 2001, so that operators worldwide have been able to both cut their costs and to offer innovative services to their customers. For example, Italtel and Cisco joint deployment has enabled Telecom Italia to implement the “Alice Mia” service; it is a bundle of communication services composed by a traditional POTS line with the main telephone number, a broadband ADSL access and additional virtual telephony lines over ADSL based on VoIP. This achievement is the result of combining Cisco IP platforms with Italtel softswitch technologies along with voice and signalling expertise, all backed up by rigorous network design and solid solution testing and tuning.

In particular, as far as the Residential Voice over Broadband solution is concerned, the Cisco and Italtel main references are Ono in Spain, SFR in France, Belgacom in Belgium, Tellas in Greece and BT Italia and Telecom Italia in Italy.

Contacts

For more information on how Cisco and Italtel can help you achieve success, contact info@italtel-cisco.com and visit www.italtel-cisco.com

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