Alcatel-Lucent
Network Evolution to
Mass Broadband Solution

Alcatel·Lucent

Accelerating mass-market broadband
adoption in high-growth economies

According to recent market research, personal broadband services have tremendous growth potential in emerging economies. But to meet this pent-up demand, service providers must overcome the key challenges of access and affordability. Alcatel-Lucent provides a cost-effective, end-to-end solution to help speed mass-market broadband adoption. It allows service providers to transform their networks and deliver attractive broadband services to the full range of potential customers — from entry-level users to advanced Internet subscribers. The solution leverages our experience in high-growth economies, leadership in broadband technologies, our end-to-end approach to network transformation and our contribution to developing a thriving broadband ecosystem.

In high-growth economies, demand for broadband is strong

To estimate broadband market potential in high-growth economies, Alcatel-Lucent has conducted several quantitative surveys. The most recent study showed explosive growth potential for personal broadband, with 75 percent of respondents interested in subscribing to broadband at home if the service is available and affordable. These consumers all had some experience with the Internet through their work or Internet cafés — in Brazil, Russia, Egypt, Kenya, India, Indonesia, Malaysia, China, Vietnam and the Philippines.

Figure 1. Alcatel-Lucent Broadband for All

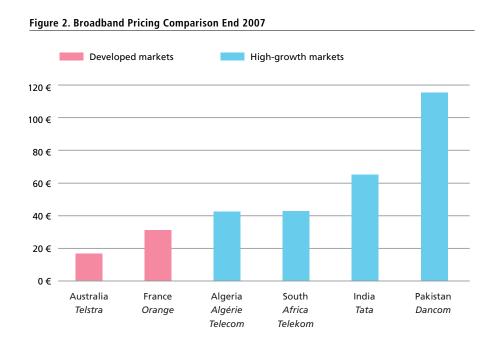| Entry users	Internet users	Advanced users
• Increase mobile penetration	• Enable mass-market broadband	• Deliver a user-centric experience

But broadband is still at the early adopter stage

In his article, "Let Them Eat Megabits," Columbia University Professor Eli Noam argues that broadband services in high-growth economies primarily benefit the urban professional classes. In fact, service providers have often targeted high-income users to promote profitability for their first broadband deployments in these areas. The results of this strategy have included weak broadband coverage, a lack of local content, low computer penetration and expensive devices.

Given the limitations of existing broadband resources, how can service providers overcome the core issues of affordability and accessibility — and expand their broadband footprint in Southeast Asia, India, Russia, the Middle East, Africa, the Caribbean, Latin America and other high-growth regions? To meet the pent-up demand for broadband within the unique requirements of high-growth economies, service providers need to transform their networks, enabling profitable delivery of affordable broadband to the mass market on a nationwide scale. Alcatel-Lucent research also suggests new entry-level broadband package structures, new content and payment strategies and future service options to increase loyalty and ARPU among existing users.

Figure 2. Broadband Pricing Comparison End 2007

Reaching the full range of potential customers

Broadband provides fast, always-on connections, which can help everyone gain the social and economic benefits of Information and Communication Technologies (ICT) applications, such as e-government, e-trade and e-education. Alcatel-Lucent has a longstanding commitment to delivering "broadband for all" — by helping service providers competitively transform their networks, so they can take full advantage of new broadband opportunities, with sustainable business models.

The Alcatel-Lucent Network Evolution to Mass Broadband solution can help you serve the full range of potential customers within high-growth economies. It enables "smart networks" that deliver affordable and attractive broadband services to entry-level consumers and Internet café users, as well as sophisticated subscribers who demand advanced multimedia offerings. The solution leverages our depth of experience in high-growth economies, market leadership in broadband technologies, our end-to-end approach to network transformation and our wide-ranging contribution to developing a healthy and economical broadband ecosystem, with a broad range of mass-market devices and applications.
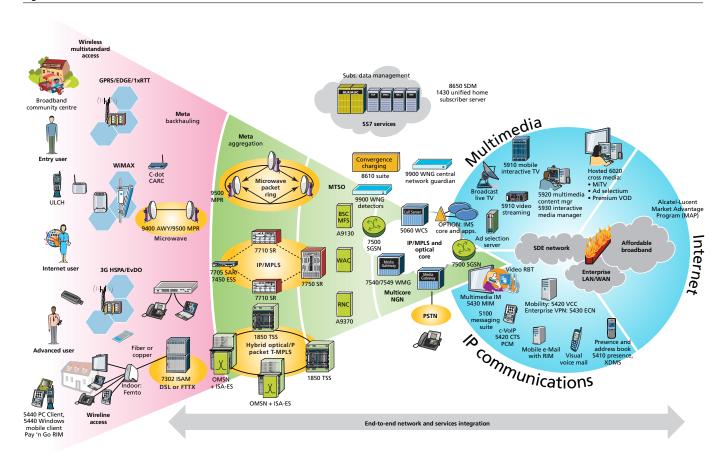
An end-to-end approach
for the lucrative mass market

Unlike many other solutions that are targeted only to high-end users, the Alcatel-Lucent Network Evolution to Mass Broadband solution can help you deliver broadband to the mass market. This best-in-class, end-to-end solution increases efficiency and reduces costs by combining flexible access, optimized backhaul and transport and applications suitable for a range of ARPU levels.

Our approach to creating smart networks helps you get the bandwidth, speed, capacity and intelligence needed for profitable delivery of increased broadband traffic. IP transformation offers more economical backhauling and broadband service aggregation. Scarce resources can be used more efficiently with end-to-end control of bandwidth, and there's no cannibalization of revenues with user and services differentiation. As a result, you can:

- Provide rapid, reliable and optimized broadband access connectivity, using the most effective technologies for your requirements
- Achieve cost-effective networks for broadband data transport
- Monetize your broadband networks with affordable services targeted at the full spectrum of end users
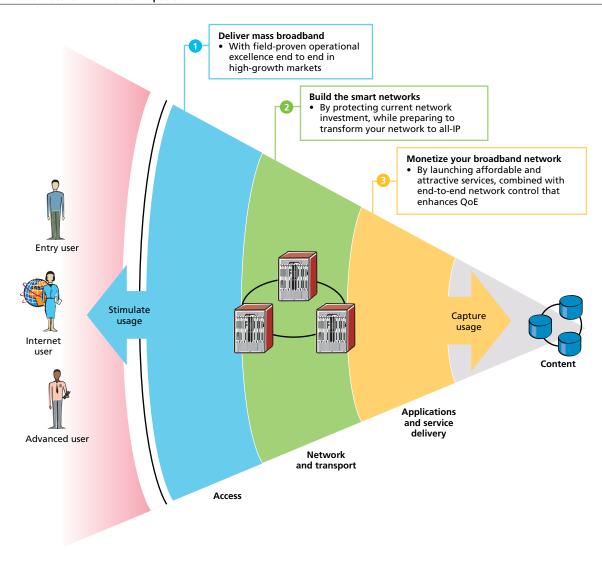
Figure 3. Alcatel-Lucent Network Evolution to Mass Broadband solution overview

The Alcatel-Lucent Network Evolution to Mass Broadband solution can meet the needs service providers that want to introduce broadband wireless services, including:

- Mobile service providers moving to broadband wireless — including GSM to UMTS evolution, CDMA EV-DO evolution, overlay GSM/WiMAX or GERAN evolution
- Fixed or converged service providers moving to wireless broadband — combining DSL, PON and WiMAX

Figure 4. Alcatel-Lucent NEMB Value Proposition

1 Deliver mass broadband
- With field-proven operational excellence end to end in high-growth markets

2 Build the smart networks
- By protecting current network investment, while preparing to transform your network to all-IP

3 Monetize your broadband network
- By launching affordable and attractive services, combined with end-to-end network control that enhances QoE

Entry user

Internet user

Advanced user

Stimulate usage

Capture usage

Content

Applications and service delivery

Network and transport

Access

The solution includes:

- Multi-standard access (wireless and wireline)
- Next-generation IP backhaul and backbone architecture
- Multicore architecture (distributed next-generation network architecture, IP/MPLS and optic backbone)
- Convergent payment suite
- Innovative broadband services targeted to different end-user segments, including:
  - ¬ Affordable broadband packages for Internet users
  - ¬ Multimedia/entertainment services for high-end residential users, such as triple play, mobile TV, video, music, gaming and local multimedia content
  - ¬ IP communication services and premium voice for business users
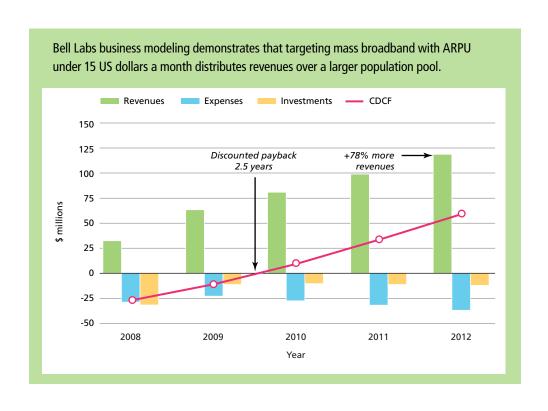
Key features and benefits

FEATURES	BENEFITS
End-to-end approach that includes manageable Quality of Service, customer differentiation, control of broadband resources and IP network transformation	• Affordable high quality, broadband for the mass market
The Industry's lowest TCO across the full end-to-end network	• TCO reduction up to 44 percent, compared to a traditional leased-line backhaul with META architecture • CAPEX improvement of 4.9 to 1 with a TPSDA architecture compared to a centralized BRAS architecture • OPEX savings of up to 22 percent with a next-generation network, compared to legacy systems
Investment protection	• Seamless network with continuity of service between access technologies • Shared resources, including common transport, site/node re-use and open interfaces • Synergies, such as a unified RRM and unified O&M
New ways to monetize your broadband networks	• Differentiated offerings that provide affordable broadband services for the mass market, along with innovative new services for advanced users • Efficient use of scarce broadband resources by controlling non-value-add traffic and load on the network

The Alcatel-Lucent Advantage

With the end-to-end Network Evolution to Mass Broadband solution, you can benefit from:

- Rapid, reliable deployment of optimized broadband access technology, leveraging our field-proven operational excellence across an end-to-end solution

- Low end-to-end total cost of ownership, which starts by protecting your current network investment and continues throughout future transformation of your network to all-IP

- Deployment of affordable and attractive broadband services, combined with end-to-end network control that helps deliver the best Quality of Experience for your customers

Bell Labs business modeling demonstrates that targeting mass broadband with ARPU under 15 US dollars a month distributes revenues over a larger population pool.

GLOBACOM NIGERIA – NATIONAL TURNKEY END-TO-END NETWORK

With an Alcatel-Lucent solution, Glo achieved:
- Leadership in network QoS
- A 30 percent savings in OPEX
- Smooth evolution to next-generation IMS and triple-play services

The solution:
- End-to-end 2G/3G solution: access, ATM/IP/MPLS broadband data network, optical backbone, satellite, microwave and so forth
- Innovative services: VoD, mobile TV, video conferencing, mobile office (prepaid RIM)

Alcatel·Lucent