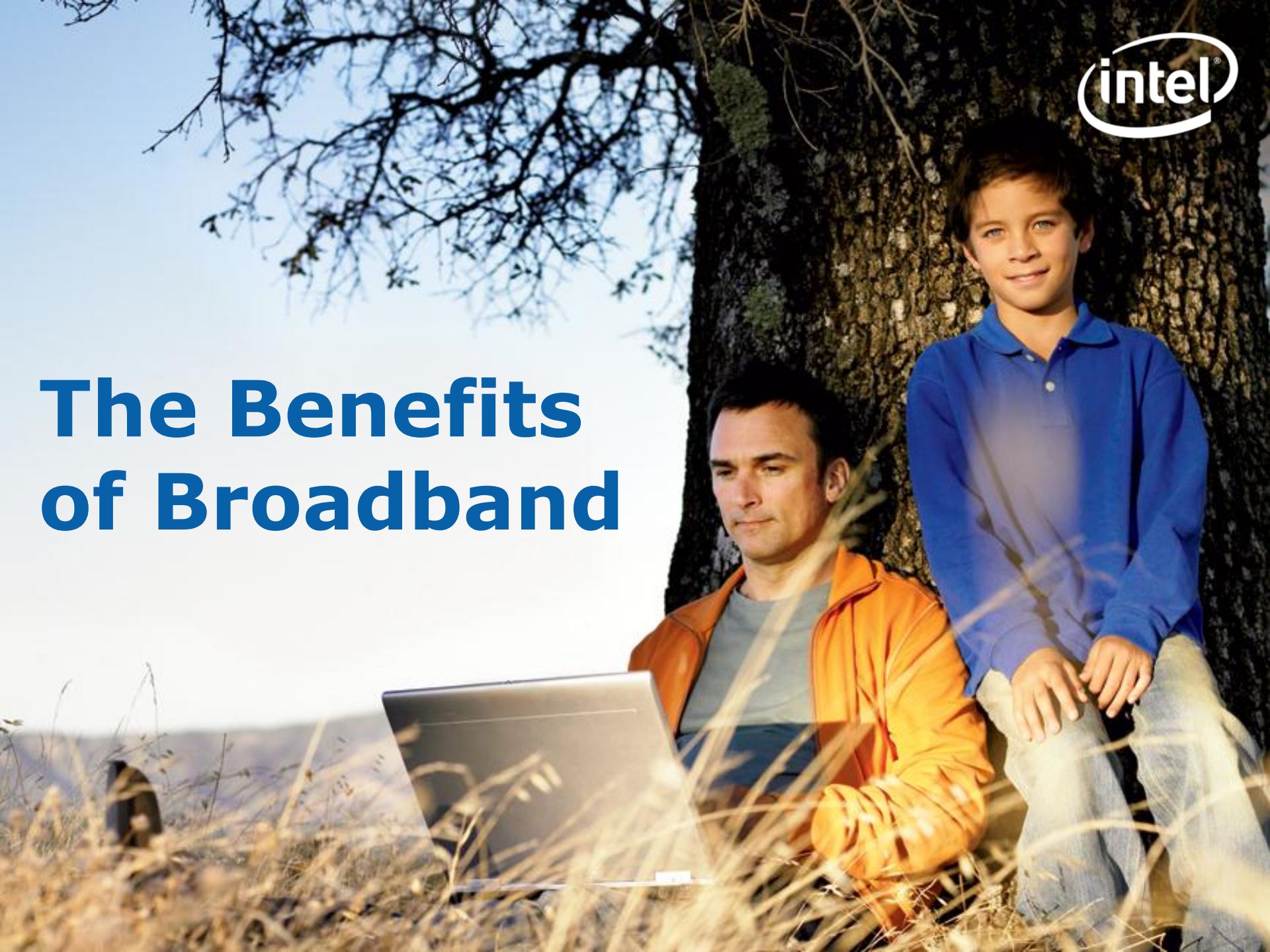


The Benefits of Broadband

Current State of Broadband[1]

	Mature markets	Emerging markets
Internet penetration	64%	18%
Broadband penetration	23%	4%
% income spent on ICT	1.5%	17.5%

[1]International Telecommunication Union (ITU), "Measuring the Information Society," 2010

Benefits of Broadband

- Bridge the digital divide
- Increase national competitiveness
- Enable all citizens to communicate faster and in more ways
- Increase access and improve delivery of essential social services

Evidence of Benefits of Broadband

- **Economic growth:** Increasing broadband penetration boosts economic growth ~ 1%-3%.[2]
- **Jobs:** In Latin America, increasing penetration 5.5% to 7.7% would generate estimated 378,000 new jobs.[3]
- **Health care:** Telemedicine provides better access to care, reduces travel, and facilitates rapid diagnosis and treatment.[4]
- **Education:** Household Internet access is associated with better educational performance.[5]

[2]See, for instance, Qiang, Christine Z., 2009. "Telecommunications and Economic Growth." Unpublished paper. World Bank, Washington, D.C.
[3]Dr. Raul L. Katz, "Estimating broadband demand and its economic impact in Latin America," Sept. 4, 2009
[4]Dutta, Soumitra, and Irene Mia. 2008. The Global Information Technology Report 2006-2007: Connecting to the Networked Economy. Basingstoke, U.K.: Palgrave Macmillan.
[5]ITU, Measuring the Information Society,"2010.

Broadband/ICT Plans

To realize the benefits of broadband and ICT, comprehensive national plans are essential.

- Plans provide the vision, organization and support necessary to:
  - Increase broadband penetration rates quickly
  - Deliver broadband services to most or all citizens
  - Reduce costs
  - Ensure continued broadband expansion and improvement

Recommended Plan Structure Phase 1: Assessment

- ***Evaluate*** ICT infrastructure and economic status
  - Use data such as basic demographics, GDP, ICT spending, etc.
- ***Examine*** the regulatory environment
  - Consider spectrum ownership/usage, licensing, tariffs/costs, etc.
- ***Assess*** the country infrastructure
  - Evaluate international and last-mile connectivity, in-country backbone, etc.
- ***Complete*** customer/user segmentation
  - Separate based on geography, occupation, population demographics, etc.
- ***Conduct*** a user vs. needs analysis
  - Develop a "needs roadmap" to pinpoint needs of each segment

Recommended Plan Structure Phase 2: Development

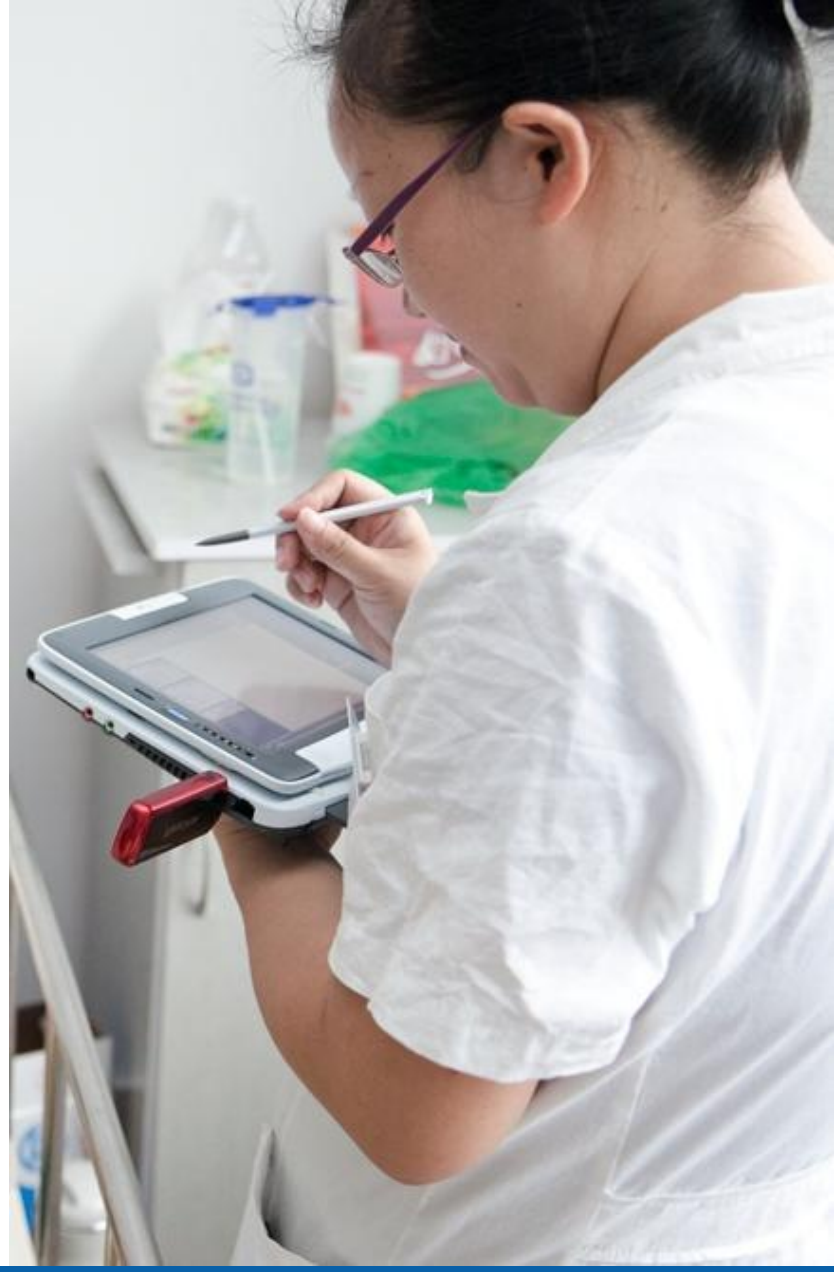
- ***Define*** broadband
  - Include desired broadband performance levels over time
- ***Develop*** a national vision for broadband
  - Vision should be specific, measurable, attainable, relevant and time-bound (SMART)
- ***Identify*** funding resources
  - Consider spectrum reallocation, dedicated USF, gov't subsidies, etc.
- ***Develop*** service provider strategies
  - Identify and work with providers to develop offers to consumers
- ***Collaborate*** with additional business stakeholders
  - Work with network resellers, software developers, etc.

Recommended Plan Structure Phase 3: Implementation

- ***Develop*** an implementation strategy
  - Create a strategy to generate public and private support for plan
- ***Utilize*** a variety of funding strategies
  - Aggressively pursue best funding strategies identified in Phase 2
- ***Implement*** demand-side programs
  - Gov't and/or other stakeholders should lead variety of programs
- ***Measure*** progress
  - Continually track, evaluate and update programs to improve results

Best Practices

1. Form public/private partnerships
   - Engage a broad ecosystem (banks, teachers, NGOs, SMBs, etc.)
2. Encourage competition
   - Adopt variety of strategies to expand the BB market and encourage investment
3. Release spectrum
   - Support technology-neutral, service-flexible spectrum policies



Best Practices (cont.)

4. Apply Universal Service Funds
   - Move beyond traditional telecommunications and correct USF inefficiencies
5. Implement a variety of demand-side programs
   - Generate investments and public interest through programs such as tax reductions and digital literacy programs
6. Develop metrics to measure plan success
   - Include SMART metrics, using ITU suggestions as starting point[6]

[6] www.itu.int/ITU-D/ict/partnership/index.html

Globally Recognized Metrics[7]

Infrastructure and Access
- Fixed and mobile broadband subscriptions
- International bandwidth per population
- Fixed broadband tariffs
- Public Internet access centers (PIACs) per locality by pop.

Education
- Student-to-computer ratio
- % of schools with broadband
- % of ICT-qualified teachers

Business
- % of businesses using computers and type of connectivity
- % of persons employed routinely using computers and Internet
- % of businesses placing/receiving orders over Internet
- % of businesses using Internet and type of connectivity

Households
- % of households with computer, Internet access
- % of households with broadband access and type of connectivity

Health (Intel's recommendation)
- % of hospitals and health centers with access to broadband
- % of hospitals and health centers with digitalized patient records

[7] ITU, Measuring the Information Society," 2010.

Infrastructure | Subsidy PC + BB | Reduce BB taxes | ICT programs

Accelerating Broadband Adoption

Example 1: Australia

- **Program:** Build national broadband network as part of government stimulus program
- **Partners:** Government, telcos, industry, etc.
- **Funding:** Government economic stimulus program
- **Results:** By 2014, 100Mbps broadband network will be available to 98% of the population.

Example 2: India

- **Program:** Spread broadband to rural and remote areas at reduced price
- **Partners:** Government, Airtel, Nokia, Vodafone, BSNL, etc.
- **Funding:** USF, new subscribers, subscriptions to expanded services
- **Results:**
  - 30% year-over-year growth in Internet users
  - 54% year-over-year growth in broadband

Example 3: Morrocco

- **Program:** NAFIDA lowers price for notebook plus broadband for teachers
- **Partners:** Government, 3 telcos, banks, NGO
- **Funding:** USF and foundation
- **Results:**
  - 74% Internet penetration
  - 85% teacher training
  - 70% have home PCs

Example 4: Panama

- **Program:** PUIA initiative to provide free Internet access to public
- **Partners:** Government, telecom operator, Intel
- **Results:** Free Internet access now available in 22 cities, serving 2.3 million people (80% of population)

Summary

- Broadband/ICT access has proven economic and social benefits.
- Broadband/ICT plans ensure more effective programs.
- Wordwide, dozens of countries are developing broadband/ICT plans that are successfully bridging the digital divide.

Learn More

- Work with your Intel representative to develop a plan for your country.
- www.intel.com/worldahead