



The Benefits of Applying Universal Service Funds to Support ICT/Broadband Programs

Month, Day 2011

Broadband Penetration: High Costs Deter Growth

Broadband penetration rates are extremely low in many emerging countries¹.

- 1.9% in sub-Saharan Africa (per 100 inhabitants)
- 7.6% in the Middle East and North Africa
- 9.2% in Latin America and the Caribbean

Broadband services are also relatively more expensive in developing countries², which has slowed growth³.

- In 2009, a fixed broadband connection cost 190 PPP (purchasing power parity) dollars/month in emerging countries, and 28 PPP in developed countries
- From 2005-2010, fixed broadband penetration in Africa rose just 0.2%

ICT and Broadband: Vital Investments

Why should emerging countries invest in broadband?

Because ICT and broadband services have been shown to spur economic growth.

- **Latin America/Caribbean:** 10% rise in broadband penetration yields 1.7-point rise in GDP growth¹
- **Brazil:** Broadband services increased the employment growth rate by 1% to 1.4%
- **China:** Every 10% increase in dial-up and broadband penetration contributes up to 2.5% to GDP growth³
- **Thailand:** Broadband could account for nearly 1% of the country's GDP growth rate⁴



Benefits of ICT and Broadband Depend on Rapid Growth

To achieve the benefits of ICT/broadband, market forces alone are sometimes not sufficient.

- ICT and broadband penetration should be broadly available—not just in major metropolitan areas
- Reliable broadband services should be priced at levels affordable to the majority of citizens

These goals can be met by ICT/broadband programs.



Universal Service Funds: An Innovative Way to Support ICT/Broadband

To achieve the benefits of ICT/broadband, many countries are now adapting their universal service policies.

- Most USF policies were initially focused on providing fixed-line telephone services
- Those earlier models are being challenged by the emergence of broadband and mobile technology
- Many countries have already or plan to expand USF policies to support ICT/broadband programs



India: USF Connects 2.6 Million People

India has used universal service funds to establish more than 2.6 million affordable broadband connections—giving millions of people in rural and remote areas affordable access to the Internet.

The programs have led to business growth as well as improvements in education, healthcare, and other social services.



India: USF Connects 2.6 Million People



Broadband network for rural/remote areas

- Over 2.6 million broadband connections established
- Over 2,500 Internet kiosks established

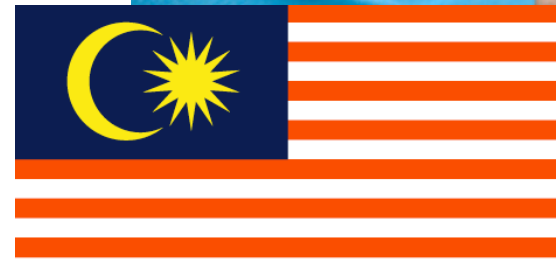
Digital device subsidies

- Over 100,000 digital devices sold to people in rural/remote areas
- Designed to subsidize sales of up to 900,000 devices by 2014

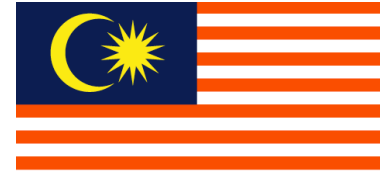
Malaysia's Goal: 1 Million PCs with Broadband

For over a decade, Malaysia's Universal Service and Provision Fund has supported ICT and broadband expansion nationwide—with the goal of distributing 1 million PCs and one year of broadband access to citizens nationwide.

Subsidized programs target rural, remote, and underserved communities, and have introduced hundreds of thousands of citizens to the benefits of modern technology.



Malaysia's Goal: 1 Million PCs with Broadband



PCs and broadband for underserved communities

- 127,000 PCs distributed so far, with goal of 1 million
- Second phase underway (300,000 units)
- Household broadband penetration rate up from 20% (2008) to 53% (2011)

Broadband community centers

- Hundreds of centers built, with training provided
- Some centers extend connectivity to nearby locations via Wi-Fi
- Sustainable funding methods developed, such as requiring payment for services

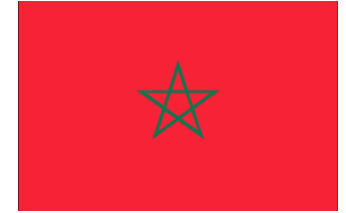
Morocco: Broadband Access for 50,000 Teachers

Morocco's USF supports numerous educational efforts nationwide. ICT/broadband programs are targeted at distributing subsidized PCs and broadband service to thousands of teachers as well as students.

The goal is to improve the quality of education and prepare students to compete in the global economy.



Morocco: Broadband Access for 50,000 Teachers



NAFID@ Program

- Gives teachers access to laptops and broadband
- Over 150,000 teachers have subscribed to broadband service
- Teachers have purchased 50,000 laptops at subsidized price, with built-in local content

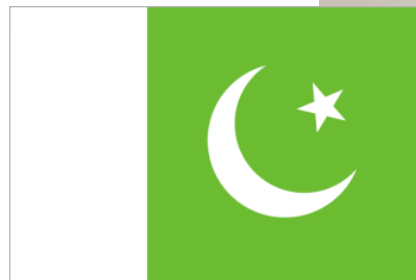
INJAZ (“Achievement”) Program

- Subsidizes cost of ICT for engineering and science students
- Over 40,000 science and engineering students have purchased their own laptops and broadband service
- Goal is to provide a laptop to every student (80,000 in all)

Pakistan: 8,300 km of Fiber-Optic Connectivity

The goal of Pakistan's USF is to "connect the unconnected" and provide ICT and broadband services to all citizens, including the thousands who live in rural and remote regions.

The country is building out 8,300 km of fiber optic networks, which will connect schools and small towns across the nation.



Pakistan: 8,300 km of Fiber-Optic Connectivity



Broadband to small towns and cities

- 238 towns and cities have broadband access
- Broadband will be made available in 2,000 higher secondary schools and colleges

Fiber-optic Connectivity

- Over 5,300 km of fiber-optic cable is now being laid
- Goal is to lay 8,300 km of cable

Turkey: 620,000 Connected Classrooms

Since 2005, Turkey's USF has been used to support a wide array of ICT/broadband programs.

These programs are extending broadband services to 15 million students and have supported creation of community centers that have made Internet access affordable for thousands of citizens.



Turkey: 620,000 Connected Classrooms



Fatih Program

- Digital devices and broadband to be provided to 620,000 classrooms, serving 15 million students
- Rollout underway of broadband service and ICT infrastructure to every school in the country

Public Internet Access Centers

- Over 4,500 PIACs now in operation
- PIACs include over 75,000 digital devices

Intel's Role: Trusted Advisor and Partner

- Collaborates with policymakers, regulators, telcos, and international organizations
- Aids development of new/ revised universal service policies
- Offers advanced technology, industry support, best practices, and more



Summary

- ICT and broadband services provide proven social and economic benefits
- Expanding universal service policies to support ICT/broadband programs enables more countries to reap those benefits
- Examples of USF support for successful ICT/broadband programs include India, Malaysia, Morocco, Pakistan, and Turkey



Achieve Your Vision

Contact Intel today to help put together a program for your country.

www.intel.com/worldahead

Country-Specific Resources:

- **India:**

- Dept. of Telecommunications: www.dot.gov.in
- BSNL (national telecommunications company): www.bsnl.co.in

- **Malaysia:**

- Malaysian Communications and Multimedia Commission: www.skmm.gov.my

- **Morocco:**

- INJAZ program: www.injaz.ma
- NAFID@ program: www.nafida.ma

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Achieve Your Vision

Country-Specific Resources Continued:

- **Pakistan:**

- Ministry of Information Technology:
www.ictrdf.org.pk
- Video of USF projects:
www.youtube.com/watch?v=SSTmmiP7SZk

- **Turkey:**

- Ministry of Transport and Communications:
www.ubak.gov.tr

- **Other Resources:**

- Broadband Commission for Digital Development 2010 report, "Broadband: A Platform for Progress":
www.broadbandcommission.org
- World Bank, "Measuring the Information Society 2010":
www.itu.int/ITU-D/ict/publications/idi/2009



