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communications inc.

Broadband

T h e P a n C a r i b b e a n S t i m u l u s P l a n

John Reid

President/Chief Operating Officer

How does Broadband contribute to economic growth?

- Broadband revenue streams are growing exponentially.
- Broadband infrastructure promotes:
 - Jobs Creation
 - Workforce Development
 - Productivity
 - Entrepreneurship
 - Process improvement and simplification
 - Specialization in knowledge-intensive activities
 - Broadband-based innovation
 - e.g. Service and Process Innovation to tap into new economic sectors.

How does Broadband contribute to economic growth?

- Many studies suggest positive returns can be expected from investment in Broadband infrastructure
 - An analysis for the European Commission estimates:
 - Broadband can **create** more than two million jobs in Europe by 2015,
 - **Increase** in GDP of at least EUR 636 billion.
 - A study in Brazil reported:
 - Broadband contributed up to 1.4% of the employment **growth** rate.
 - China:
 - 10% **increase** in Broadband penetration contributes an additional 2.5% to GDP growth.
 - Thailand reported in 2010:
 - 3% of households and 12% of individuals have Broadband service
 - Broadband could **add** nearly 1% to the country's GDP growth rate.

How does Broadband contribute to economic growth?

- The World Bank/InfoDev
 - Broadband is a key driver of economic growth
 - Providing a boost of 1.38% in GDP growth in developing countries for every 10% increase in penetration
- Telecom Advisory Services
 - In 24 Latin American and Caribbean countries, (controlling for educational level and development starting point), a 1% rise in Broadband penetration yields a 0.017 point increase in GDP growth.
 - Broadband growth between 2007 and 2009 (prorated average of 37%) contributed between USD 6.7 Billion and USD 14.3 Billion,
 - including direct and indirect effects, and preservation of an economic growth rate.

Investment in national, ubiquitous
Broadband is an **essential** element
of any economic recovery plan.

Working to implement new infrastructure
and adoption projects will speed up the **recovery** process in the short
term,
while yielding **benefits** for
generations to come.

Broadband is a Global Reality

Small businesses head for economic recovery through the Internet

By Jo Wilkes on 28th April, 2010 - No Comments

Brussels, 28 Jan

The Commission proposes € 5 billion new investment in energy and Internet broadband infrastructure in 2009-2010, in support of the EU recovery plan

Broadband: key to European recovery

It has been a year of rationalising operations and dealing with tremendous uncertainty. But as we look to 2010, businesses can see signs of recovery and want to capitalise on the upturn. Fernando Gil de Bernabé. Cisco reports

December 8, 2008 11:17am EST

Obama: Broadband Essential Economic Recovery



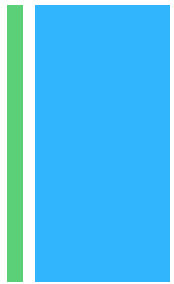
By Chloe Albanesius

THE HILL'S
Congress Blog
Where lawmakers come to blog

Broadband: A must for America's economic recovery

By Henry M. Rivera - 12/13/10 02:12 PM ET

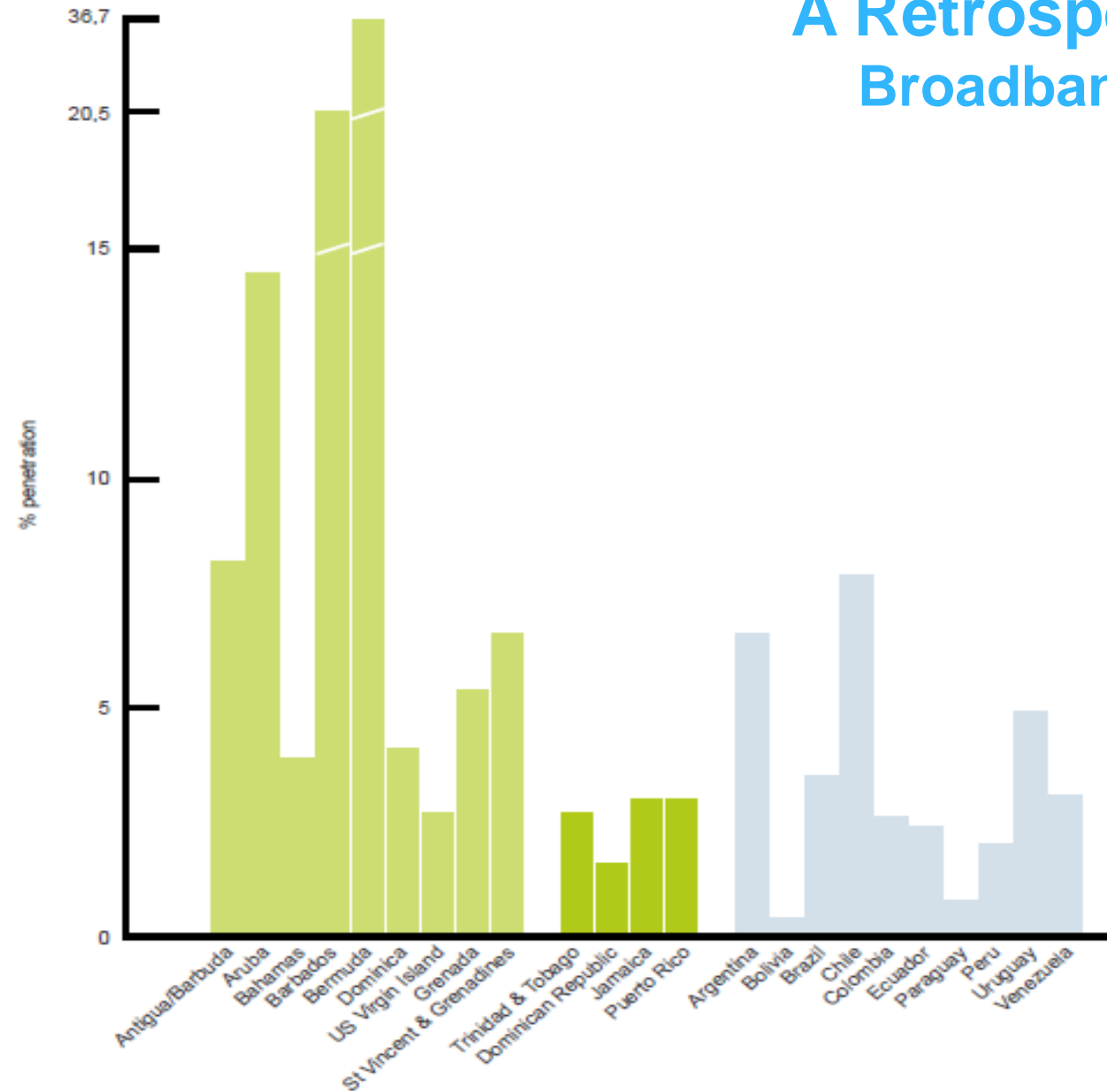
A Retrospective View: Broadband Penetration



2006 Broadband Penetration

(over total population base)

- Caribbean: 1.3%
- The Americas: 37%
- Europe : 35.7%
- Asia-Pacific: 11.8%
- Africa: 4.8%
- World Average: 17.4%



A Retrospective View: ICT Barriers to Development

- Price of Telecommunications Services:
 - High Retail Prices (international calling, Internet access)
 - High Wholesale Prices (leased lines, interconnection, telephone ports)

- Weaknesses in the organization and functioning of regulatory institutions:
 - Regulating in a competitive environment where one operator is dominant
 - Opportunities for political interference in the regulatory process
 - Insufficient specialized resources
 - Lack of experience in dispute resolution

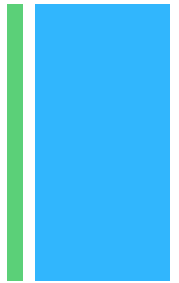
A Retrospective View: Retail Prices

Country	Entry Level Speed	US\$/Mth	Mid Range Speed	US\$/Mth	Upper Range Speed	US\$/Mth
Barbados	256 kbps	31.60	768 Kbps	86.30	1.5 Mbps	108.00
Jamaica	256 kbps	40.00	1 Mbps	40.00	n/a	
St Lucia	256 kbps	54.70	512 Kbps	73.00	1.5 Mbps	219.80
Grenada	256 kbps	54.70	512 Kbps	73.00	1.5 Mbps	256.50
Antigua	256 kbps	91.40	512 Kbps	183.10	1.5 Mbps	292.50
Belize	128 kbps	60.00	1 Mbps	265.00	n/a	
Trinidad and Tobago	256 kbps	70.50	512 Kbps	467.72	1.5 Mbps	663.35

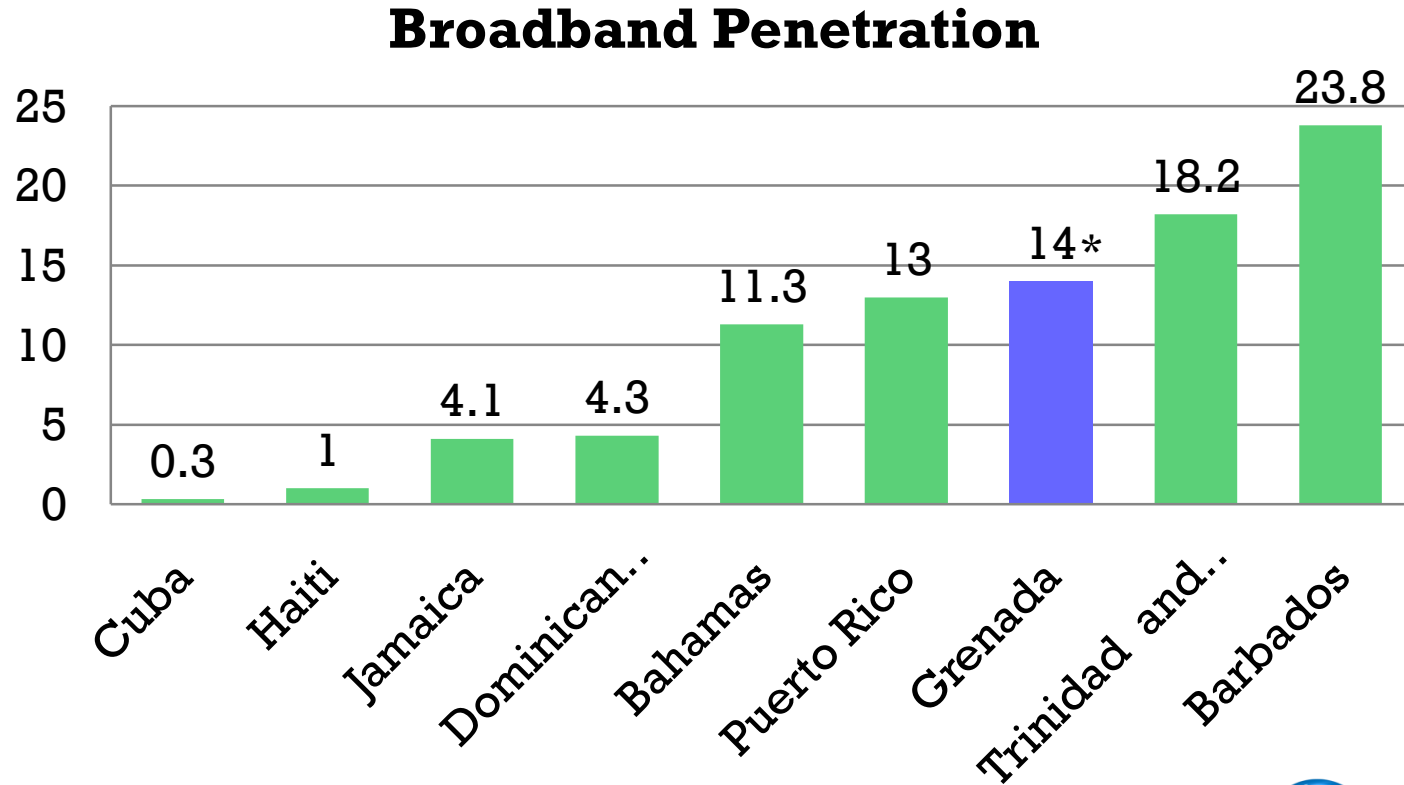
A Retrospective View: Wholesale Prices

- Significant price differences for users in the Caribbean vs. other regions in the world
 - E.g. IPL Circuit between Amsterdam and Madrid cost 91% **LESS** than one between Jamaica and Miami
 - Trans Atlantic leases cost 1/10th the price of even the cheapest least to Miami from the Caribbean
 - 2005: Trinidad-Miami DS3 ~USD\$100K - USD\$150K MRC

2010 Report Card – Broadband Penetration



- Significant progress in the area of broadband penetration



2010 Report Card - Broadband Speeds

- Broadband Speeds have jumped to developed world status
 - In 2010, nine markets launched speeds >3Mbps
 - 100Mbps available in Trinidad, Jamaica, Curacao

Time needed to download online content at different connection speeds

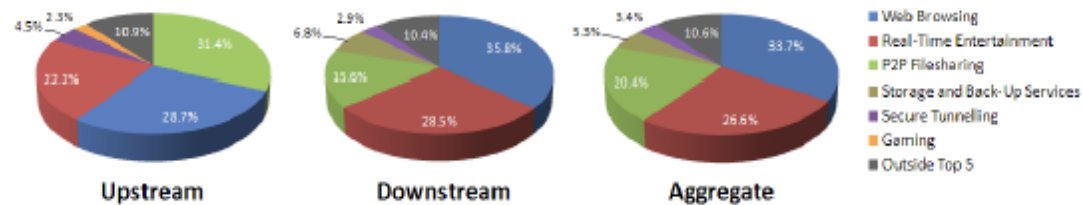
Content \ Connection speed	256kbps	2Mbps	10Mbps	100Mbps
Google home page (160 KB)	00:00:05	00:00:01*	00:00:00*	00:00:00*
Music track (5MB)	00:02:36	00:00:20	00:00:04	00:00:00*
Video clip (20MB)	00:10:25	00:01:20	00:00:16	00:00:02*
CD / low quality movie (700MB)	06:04:35	00:46:40	00:09:20	00:00:56
DVD / high quality movie (4GB)	34:43:20	04:26:40	00:53:20	00:05:20

The Stimulus is Critical as Broadband usage Continues to Trend Higher

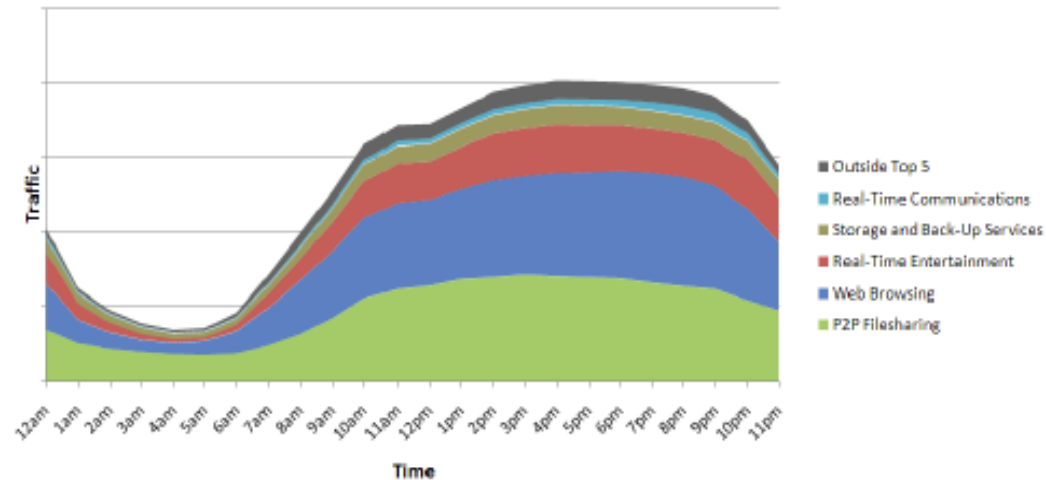
- Dramatic Shift in consumer behaviour towards real time applications

- Doubling in share of total bytes for: Streaming, peercasting, place-shifting, flash video
- 1% of subscribers account for 25% of traffic
- The network influences behaviour.
- Mainstream use of storage and back up services
- “The Cloud”

2009 Average



Caribbean and Latin America - Daily Aggregate Traffic Profile



Source: Sandvine 2009 Global Broadband Phenomena

Technology / User Trends



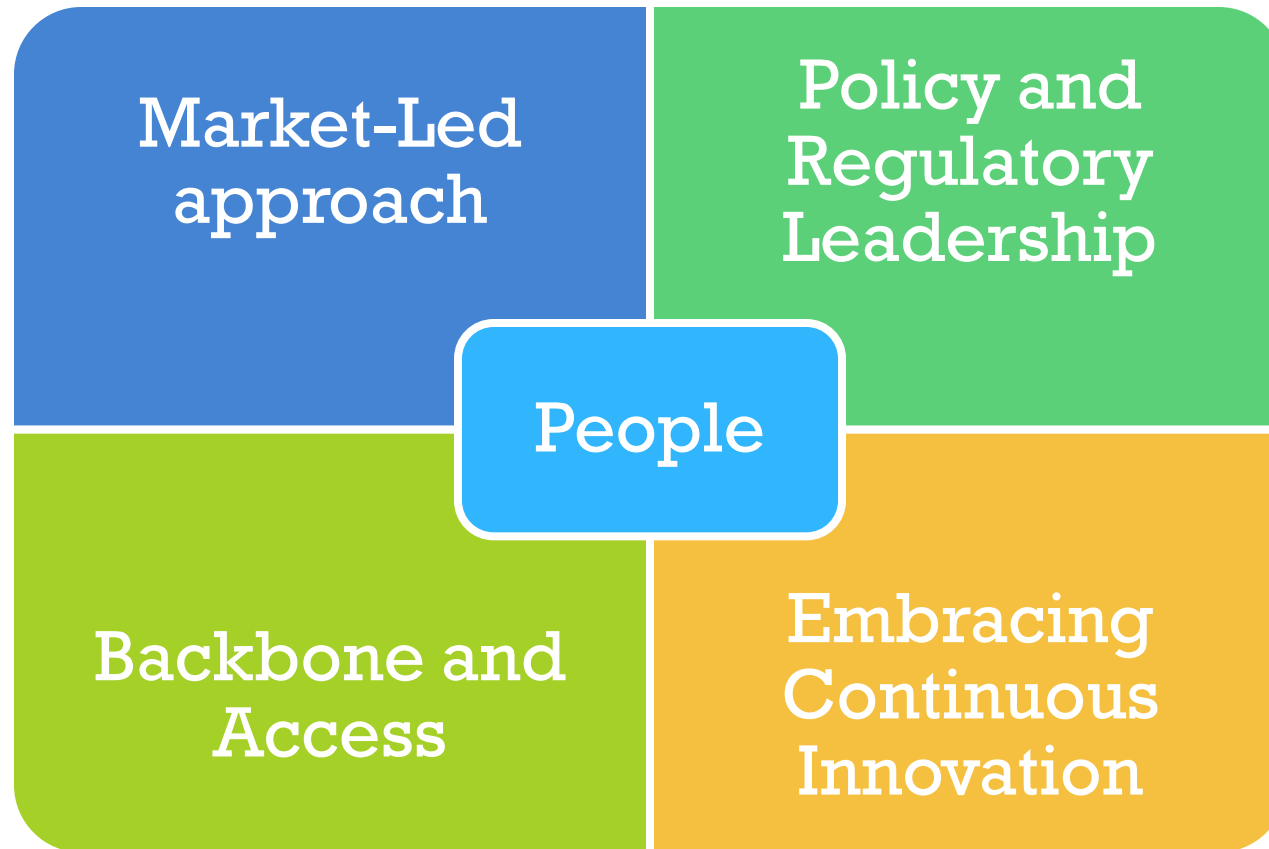
Higher usage demands for Bandwidth

2010 Report Card - Technology Landscape

■ Variety of Technology Go-to Market Solutions

Country	ADSL	Wireless	WiMax	Cable Modem
Barbados	X	X		
Jamaica	X		X	X
St Lucia	X			X
Grenada	X			X
Antigua	X	X	X	
Belize	X	X		
Trinidad and Tobago	X	X		X

Primary considerations for a Stimulus Plan



Primary considerations for a Stimulus Plan

Market-Led approach

- Harness the drive, dynamism and discipline of the private sector
- Establish an Incentive-based approach to ensure that service providers with high fixed cost telecommunications networks extend beyond profitable urban areas to include rural communities

Primary considerations for a Stimulus Plan

Policy and Regulatory Leadership

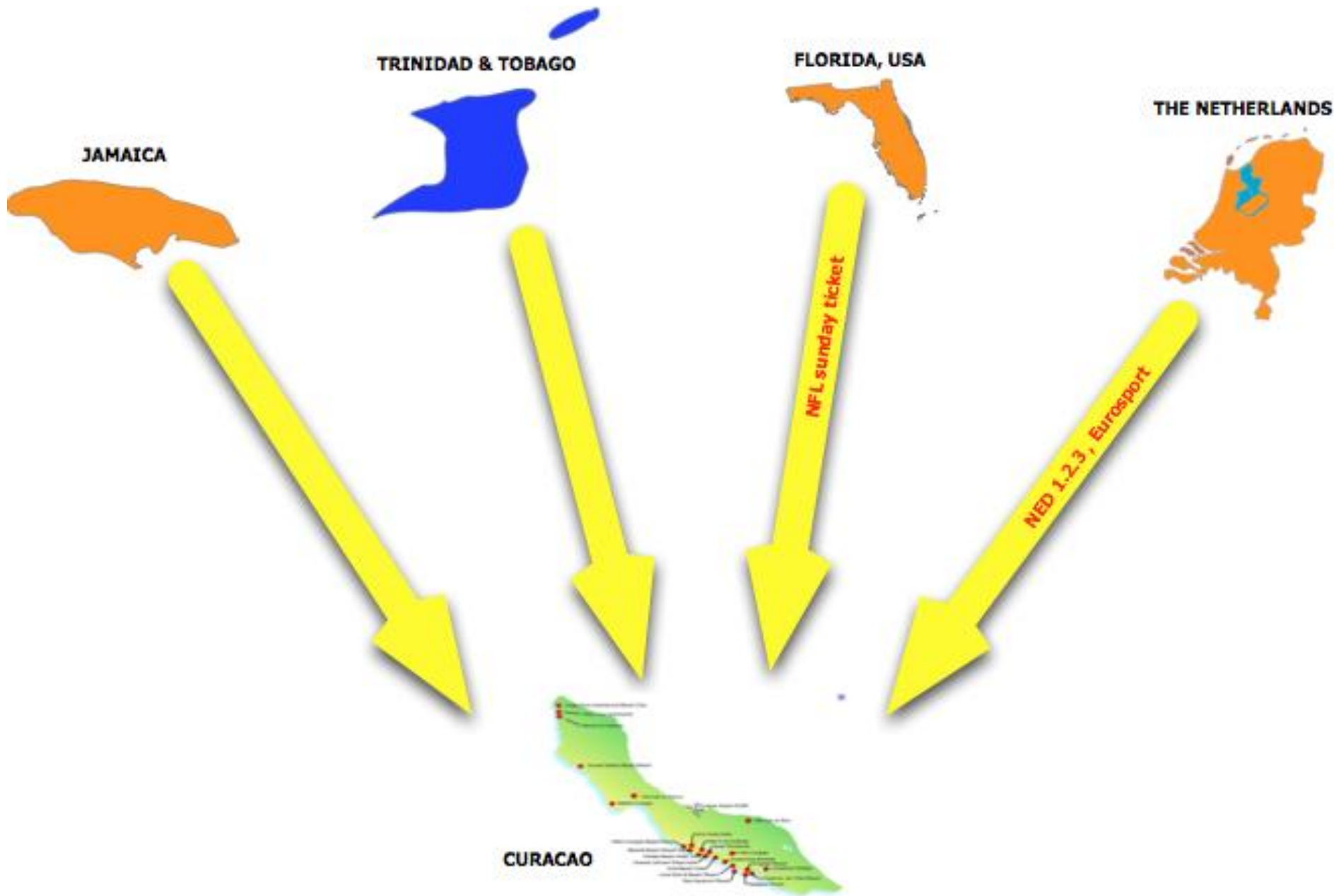
- Create an enabling environment for Broadband roll-out and create demand for advanced national broadband networks.
- Success will be achieved on the basis of strong private sector participation, facilitated by early and consistent prioritization of Broadband at every level of policy-making.
- Stimulus Package: consider policies aimed at stimulating private sector growth and investment: innovative loan and tax structures, subsidies by government in services in countries where there is little or no possibility of attracting private investments.

Primary considerations for a Stimulus Plan

Backbone and Access

- The physical transport layer in the ‘backbone’ network needs to be capable of delivering sufficiently fast data speeds to ensure that we can participate meaningfully in the digital revolution.





Primary considerations for a Stimulus Plan

Embracing Continuous Innovation

- Creative individuals with interest can now acquire the knowledge and skills needed to innovate in the information society online
- ICTs are collaborative platforms
- Innovation is no longer defined by high sunk costs and long lead times
- Innovation is now dominated by user-generated content, crowd-sourcing or, put simply, the strength of a good idea
- A robust Broadband infrastructure creates a platform for Innovation

Primary considerations for a Stimulus Plan

People

- Investing in Broadband is not only an investment in infrastructure, but also an investment in people. Platform for mating of ideas
- Enables individuals to solve their own problems, create their own opportunities
- Promotes and extends significant cultural events, the histories, stories that define geographic areas
- Creates independence, risk taking and global involvement
- Reduces isolation; the “community” becomes extended on multiple levels, without physical barriers
- Investment starts at school level

Global Trends

Broadband in the U.S. Stimulus Package

- Broadband Technology Opportunities Program (BTOP) - \$4.7 billion
 - \$250M earmarked for “competitive grants for innovative programs to encourage sustainable adoption of broadband service”
 - \$200M earmarked for “competitive grants for expanding public computer center capacity, including at community colleges and public libraries”
 - \$250M for “developing and maintaining a broadband inventory map”
 - \$10M for oversight and auditing
- Rural Utility Service (RUS)
 - \$2.5 billion in grants, loans, or loan guarantees
 - 75% of investment must serve rural area

International Examples of Broadband Stimulus

- Canada > \$200 million over three years
 - Extend broadband coverage to unserved rural communities
- France > \$1 billion, initial public investment into 10yr, \$13 billion plan.
 - Provide universal coverage by 2010 and “ultrafast” broadband to million households by 2012
- Japan > \$370 million over two years
 - Extend broadband to unserved communities
- South Korea > \$1 billion, initial public investment of \$24.6 billion plan
 - Upgrade broadband to reach 30 million households by 2012

International Examples of Other ICT Stimulus

- Japan: \$31 billion, “i-Japan 2015 strategy”
 - Intelligent transportation systems, fiber network for health care, e-government, energy efficient ICT
- France: \$73 million
 - E-government investments, including “Serious Gaming”, Web 2.0 applications and other miscellaneous e-government public purchases
- Canada
 - Allowed companies to expense in the first year all ICT investments for 2 years. (worth \$700 million Canadian)

“Broadband access is a tipping point for economic development. It can generate jobs, drive growth and productivity, and underpin long-term economic competitiveness”

ITU secretary-general Hamadoun Touré



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Thank You