



# Developing and Promoting ICT in Grenada

# Agenda

- Milestones in Grenada
- Status of ICT in Grenada
- IPv6 in Grenada
- IXP Development
- Universal Service in Grenada

# Milestones in Grenada

- Launched Broadband in November 2008
- Launched Talk in November 2009
- Launched Digital Video in June 2010
- Expanded Triple-Play suite of services to new areas from 2010 to 2011
  - Hermitage
  - La Digue & St James
  - Birchgrove & Adelphi

# Expansion to Hermitage

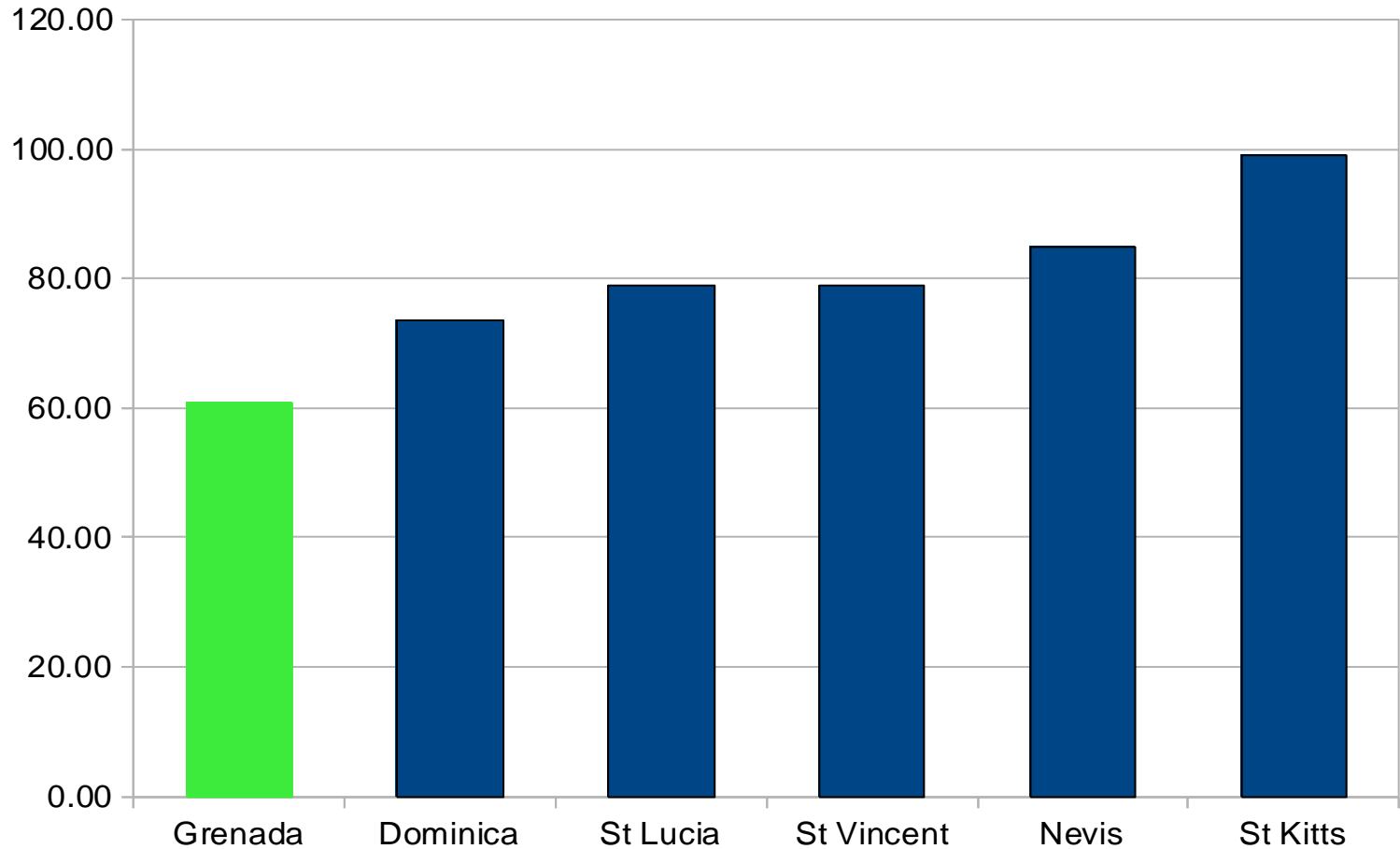




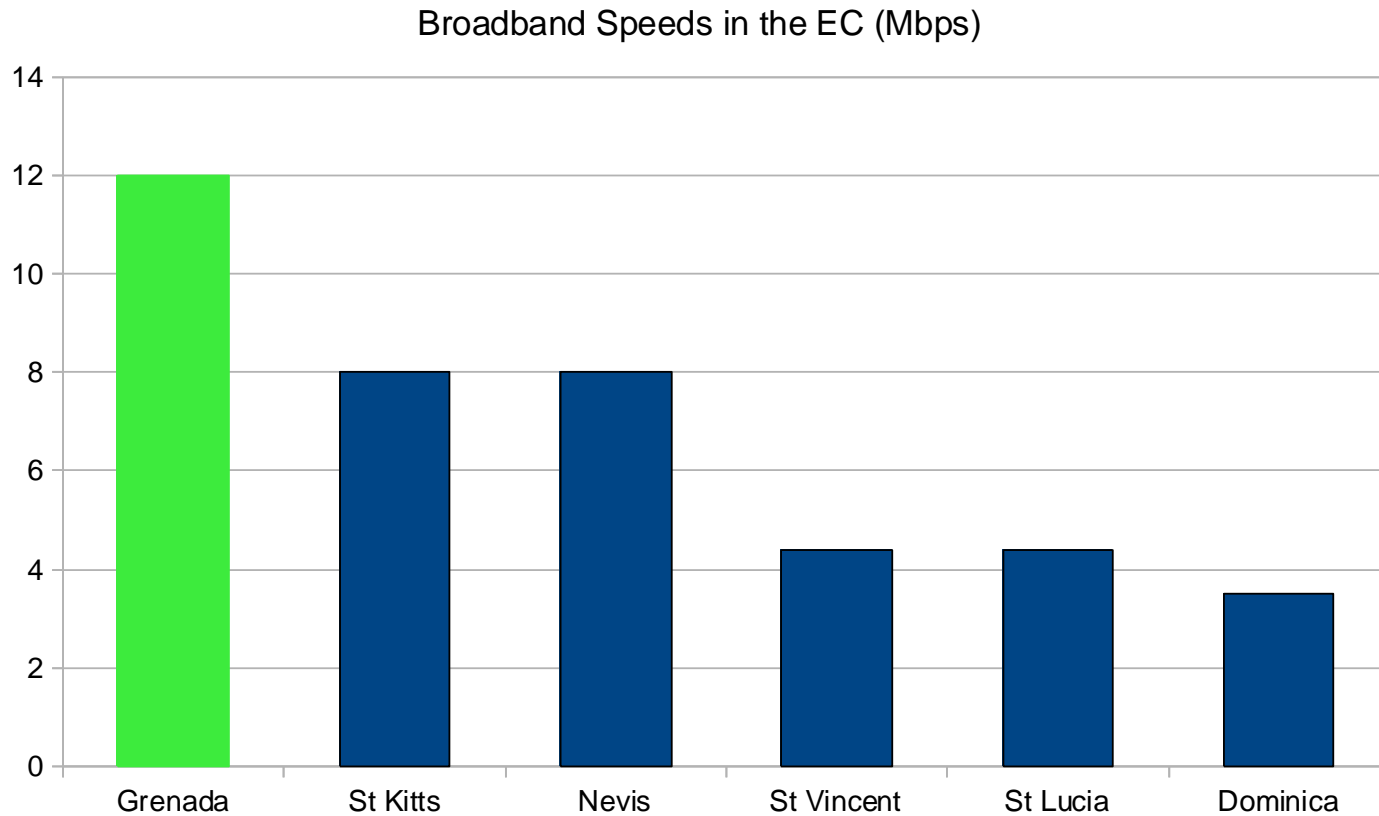
# Status of ICT in Grenada

- Increased penetration of broadband from 8% in March 2008 to 13% in December 2010
- Increased broadband speeds from maximum 512kbps to 12Mbps
- Lower broadband prices
  - From \$149 for 256kbps in 2007 to \$65 for 4Mbps in 2011
- Advanced video services
- Next Generation telephony services

# Broadband prices in the EC



# Broadband speeds in the EC



# Cable in the EC

Cable	Digital Cable	High Definition	Video Recording
Dominica			
Grenada	Grenada	Grenada	Grenada
St Kitts	St Kitts	St Kitts	
Nevis			
St Lucia	St Lucia		
St Vincent	St Vincent		

# Conclusion on Broadband

- In the EC as of 2010, Grenada has:
  - the fastest broadband speeds
  - the most affordable broadband packages
  - the most advanced cable service
- **In summary, Grenada has the best broadband ICT services in the EC**

# The need for IPv6

- Every device (and user) needs an IP address in order to access the Internet
- The current reserve of IP addresses (IP version 4) has been depleted
  - And the Internet is still growing
- IP version 6 (IPv6) has been developed to facilitate billions as many devices connecting to the Internet simultaneously
- ISPs globally must commence the transition

# IPv6 – We are ready

- Flow's network supports IPv6 today
  - Block of IPv6 addresses assigned
- Flow subscribers with Windows 7 or Mac clients can browse IPv6 websites
  - [ipv6.google.com](http://ipv6.google.com), [ipv6.facebook.com](http://ipv6.facebook.com)
  - Connect client directly to modem to test
- Industry awareness campaign to be planned
  - Upgrade of PC operating systems to Windows XP/7
  - Replacement of Wireless Routers to support IPv6

# IXP

- An Internet Exchange Point (IXP) is a facility which enables the routing of domestic Internet traffic locally between Internet Service Providers
- Benefits
  - Reduction of the Average Per Bit Delivery Cost (APBDC) of bandwidth
  - Enhancement of the Quality of Experience of domestic broadband services
  - Enabling the development and delivery of local digital content

# IXP participation

- Flow in Curacao is currently a member of Caribbean Internet Exchange (CarIX)
  - [www.car-ix.net](http://www.car-ix.net)
- CarIX presents has 7 ISP members in Curacao/Netherland Antilles, including Digicel Dutch Caribbean and Flow

# CarIX

- Hosted in the E-Commerce Park in Curacao, a data centre owned by Columbus Communications
- Comprises a Layer 2 Switching fabric
- Governed by representatives from its members
- Recently attracted Google and Akamai to join the IXP by establishing content servers on-island
  - Provides cached-content to the IXP participants with much lower latency and at reduced cost

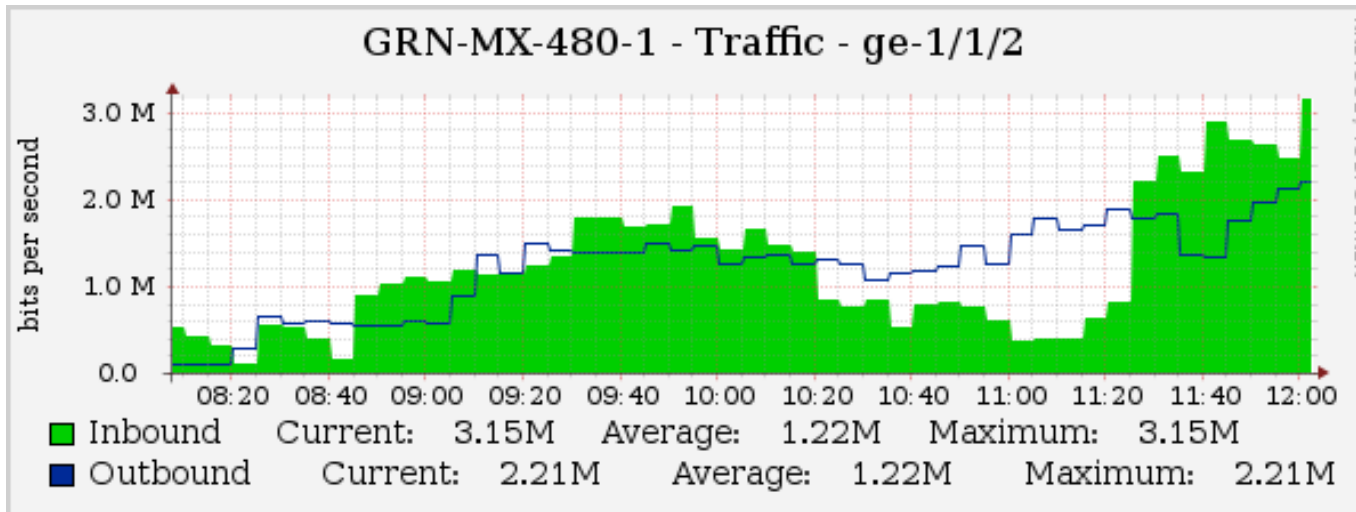
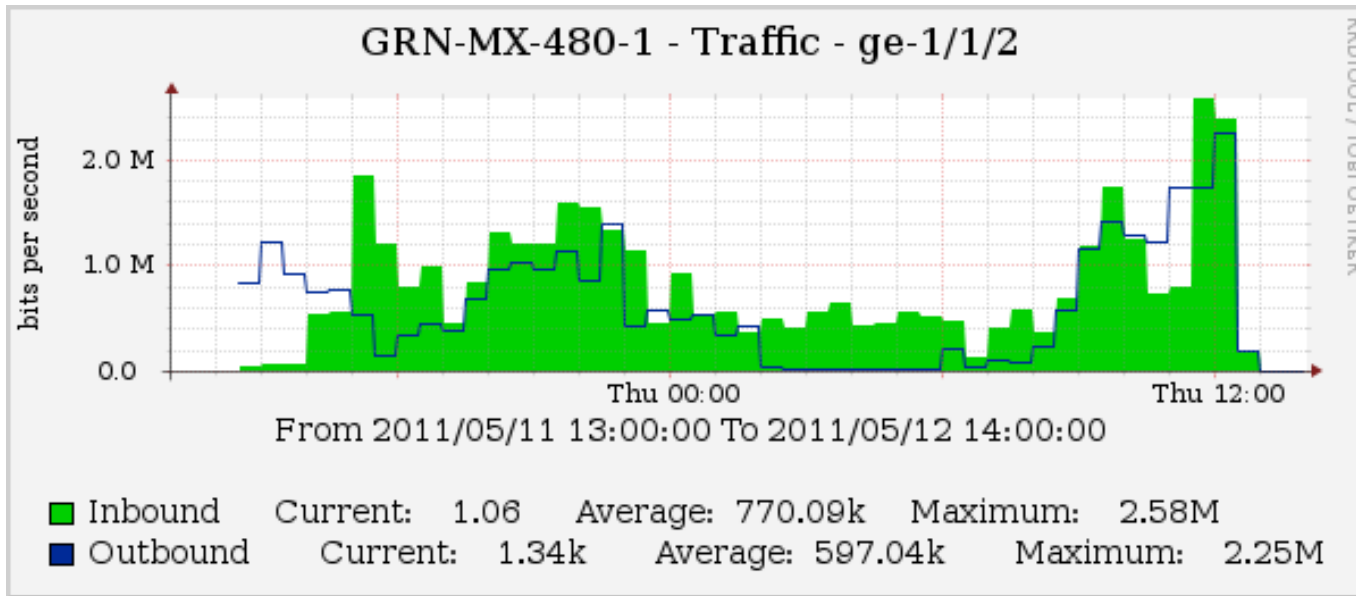
# GREX

- The Grenada Internet Exchange Corp (GREX) is a non-profit company comprising of ISPs being established to govern an IXP in Grenada
- Presently has 2 Members
- Will manage a layer 2 switch
- Will become the first IXP in the OECS once established

# GREX status

- GREX MoU and Internet Exchange Agreement signed between LIME and Flow
- Connectivity established by LIME and Flow's networks to IXP switch.
- GREX incorporation documents prepared
  - Executed by Flow-nominated directors
- IP traffic tested and exchanged successfully
  - Continuous operation to be confirmed

# GREX – Live Traffic



# Universal Service – Today

- USF projects selected by NTRC in 2011
  - Supply of terrestrial fibre facilities to Morne Longue, Prospect and Mt Alexander to enable broadband ICT services
  - Provision of Wi-Fi access points and pay phones to selected communities in Grenada
- ECTEL/World Bank TICT Project
  - Establishment of Community Access Points (CAPs) providing broadband Internet to up to 12 communities throughout Grenada

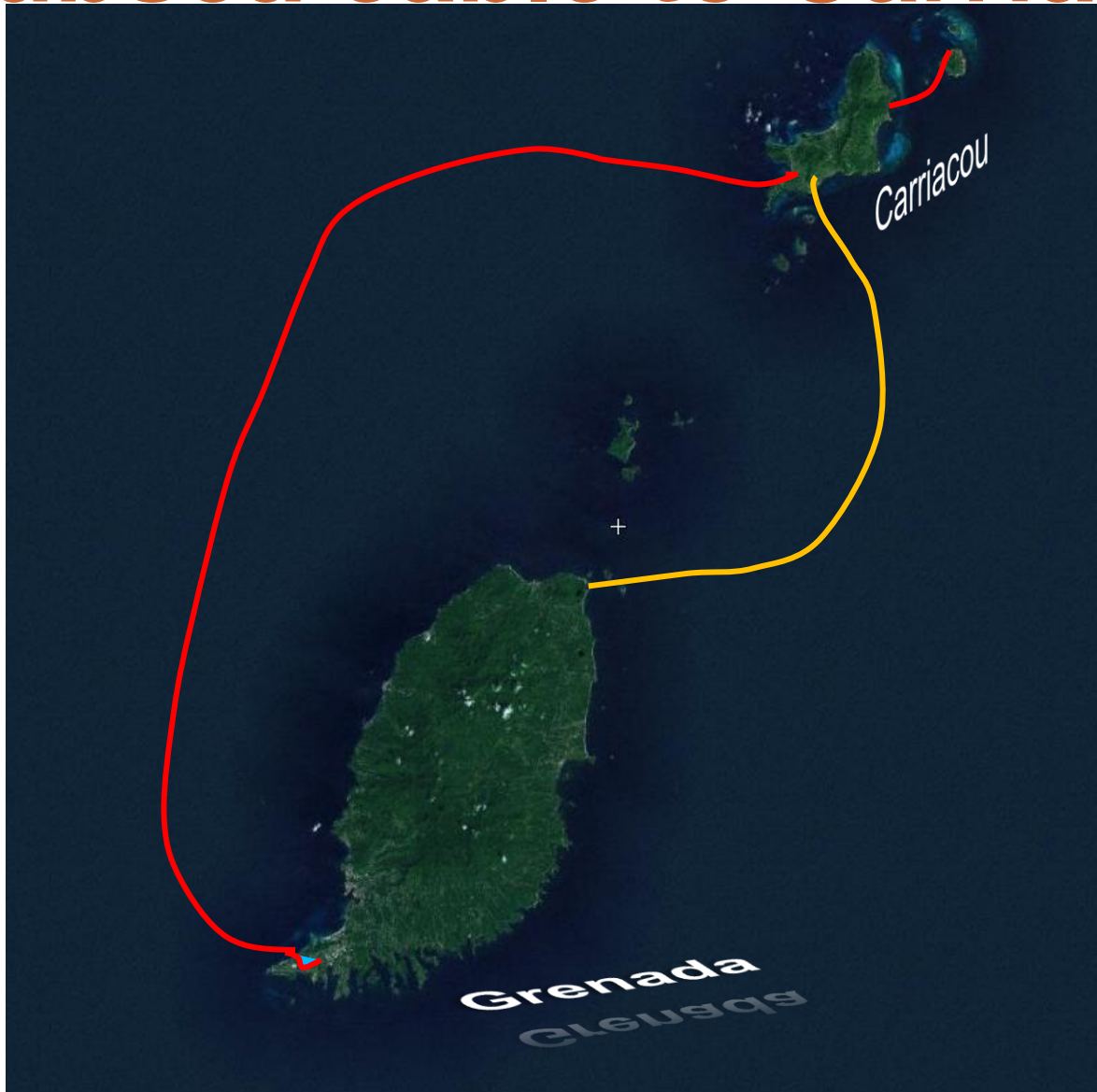
# Universal Service – Tomorrow

- Use of Universal Service Funding to finance subsea fibre build to Carriacou
  - Fund possesses EC\$3.3m as of June 2011
  - Budgeted cost is EC\$5 - 6m
  - Project selected for further consideration

# Carriacou Cable Benefits

- Enhance the availability and quality of broadband ICT services available to 9,000 Grenada (EC) citizens
  - Enable the delivery of NGN services
  - Support the deployment of 3G/4G wireless services
- Enable distance education opportunities which requires cheap bandwidth
- Support the development of alternative economic sectors that will improve the quality of life and drive beneficial foreign exchange
  - Marina industries
  - Call Centre operations

# Subsea cable to Carriacou





**Thank You**