



## CTU BULLETIN

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20-May-2010

### Proliferation of Internet Exchange Points in the Caribbean

#### Purpose of the Bulletin

This Bulletin is intended to outline the role and function of an Internet Exchange Point (IXP); to provide a cogent argument to our members, regional regulators and other stakeholders for the proliferation of IXPs in the Caribbean region and to provide information on best-practice approaches for IXP establishment.

#### Definition

An Internet exchange point (IX or IXP) is a physical infrastructure that allows different Internet Service Providers (ISPs) and Internet Content Distributors to exchange Internet traffic between their networks by means of mutual peering agreements, which allow traffic to be exchanged without cost.

#### Current View of Internet Traffic

Historically, domestic Internet traffic is routed externally via centres in North America. Typically, Internet traffic from one user within a country to another user within the same country is wastefully routed to the United States and back again, before proceeding to its destination.

#### Benefits of a local IXP in Caribbean Countries

Benefits of establishing an IXP in a country include

- Domestic traffic remains domestic;
- More efficient use of network resources;
- Reduction in latency;
- Reduction in network operational costs;
- Opportunities for the development and delivery of bandwidth intensive services and new types of local internet and local content businesses.

The full benefits of Internet Exchange Points to national communities and the wider region, therefore, will only be achieved when IXPs are established in as many locales as possible.

#### Why Proliferation of Domestic Exchanges is Essential

Establishing one or two "regional IXPs" will not address the fundamental goal of keeping domestic traffic domestic and all the attendant benefits to be derived thereby. Instead, any "regional IXP" – whether in Miami or in a Caribbean territory - will defeat the purpose of establishing a local IXP in that:

1. Domestic Traffic will continue to be routed externally
  - a. The primary reason for having a local IXP is to keep domestic traffic domestic.
2. There would be no local internet connectivity for consumers exchanging domestic traffic should there be any failure on the international facilities.
  - a. This was clearly demonstrated in Grenada recently when there was a major failure on one service provider's international undersea cable and their local subscribers lost all capacity to communicate. Had there been an IXP, at least local subscribers would have been at least able to resolve local traffic.
3. Benefits of improved latency and efficiency are diminished
  - a. A local IXP provides cheaper, more efficient, lower latency paths between networks.
  - b. Also, the increased number of paths learned through an IXP improves routing efficiency and fault-tolerance for participants and renders participants' networks far more resilient to international transit facility failures.
4. Benefits of reduced costs for service providers will not be realised.
  - a. Reducing the Average-Per-Bit-Delivery-Cost (APBDC), or "cost of goods" allows local ISPs to maintain higher levels of profitability, reduce costs, or increase reinvestment.
5. The development of domestic, high bandwidth applications and services will still be constrained.
  - a. A local IX vastly improves the customer experience for local content, gaming, file-sharing, and latency-sensitive applications like voice and video. This will fundamentally impact the objective of growing local and regional content development. IXPs help foster a local community for both content and providers.
  - b. The aggregation of demand also makes it more attractive for additional transit providers and content providers to enter the market, thus spurring additional industry growth and high-value jobs.
6. National Data Privacy and Security concerns will still be compromised
  - a. Sending sensitive data across national borders presents a privacy risk to governments and corporations. By keeping local traffic local, sensitive data is not subject to inspection by other governments or jurisdictions.

## The CTU's Position on Caribbean IXPs

As a Caribbean-based inter-governmental organisation dedicated to facilitating the development of the region's information and communications (ICT) sector, the Caribbean Telecommunications Union (CTU) strongly advocates the proliferation of IXP's across the Caribbean.

The CTU is firmly committed to continuing its work of educating stakeholders across the region on the justification for and benefits of establishing IXPs in every national jurisdiction in the Caribbean.

The CTU is committed to collaborating with regional Internet Service Providers and any other stakeholder to ensure that the benefits of Caribbean IXP proliferation are both fully understood and realized.

## Credits

Special thanks to Packet Clearing House (PCH) for its technical inputs to this bulletin. Packet Clearing House is a non-profit research institute that supports operations and analysis in the areas of Internet traffic exchange, routing economics, and global network development. Formed in 1994, PCH is widely recognised as one of the world's leading proponents of neutral, independent network interconnection and is a provider of route-servers at major exchange points worldwide.

For further information visit:

CTU online: <http://www.ctu.int>

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