



# MINISTRY OF PUBLIC ADMINISTRATION & INFORMATION

## Overview of outcomes from Internet Bandwidth Management Workshop November 1, 2006

November 21, 2006

### **Introduction**

Following the publication of the Ministry of Public Administration and Information's (MPAI's) discussion on recommendations (DoRs) on the Internet Bandwidth Management, a workshop was conducted in which most of the interested stakeholders participated. The objective of the Workshop was to deliberate on various alternatives for a definitive way forward to implement the proposals which found broad acceptance through the previous consultative phase. These broad proposals, generally conceptualised to reduce the overall cost of Internet bandwidth, included:

- Encouraging domestic Internet routing via an Internet exchange point; and
- Encouraging domestic content development and management

The discussion on diversification of international routes was deferred to another time, allowing the workshop to focus on what essentially involves the evolution of the domestic Internet backhaul infrastructure.

### **Participation**

The workshop was attended by a cross section of interested parties. A list of participants is attached at Appendix A.

These participants were separated into two working groups which discussed the issues under review, presenting their findings and recommendations at plenary at the close of the day. A breakdown of working group members is included attached at Appendix A.

Certain critical stakeholders were not present for the workshop. However it was agreed to that their comments would be included in the final deliberations/recommendations coming out of the consultation phase.



## Discussion points and Recommendations (or Views).

### 1. Facilitating domestic Internet routing

#### 1.1 Development of an Internet eXchange Point (IXP)

The groups were asked to consider what would be the appropriate framework to support the development of an IXP in Trinidad and Tobago, in the short term. The views of the groups are summarised below:

Group 1	Group 2
<p>IXP should be developed by the market, however:</p> <ul style="list-style-type: none"> <li>▪ Limited information available among carriers to quantify the immediate gains to be derived by implementation of one today due to: <ul style="list-style-type: none"> <li>○ TSTT's dominance of the retail ISP market: is there need for regulatory intervention against anti-competitive practices?;</li> <li>○ Internet Service Providers (ISPs) need recognition under the Telecoms Act;</li> <li>○ Recent reductions in international bandwidth prices</li> </ul> </li> </ul>	<p>GoRTT should encourage the development of an IXP at the earliest possible opportunity, with the caveat that private sector may enter the market if an when it so wishes</p> <p>Governance framework should be multi lateral including participation from industry participants, civil society and Government of Trinidad and Tobago (GoRTT).</p> <p>Transparent selection of implementation/ management firm essential.</p>

#### **Recommendations:**

The views of the two groups were discussed in the plenary session and there was consensus that:

- The Government may have to take lead for creation of an Internet exchange in the short term and that the industry is willing to participate in this initiative. The framework should ensure neutrality and equity among participants. Later on, it may be operated and managed by the private sector.
- Multi stakeholder governing/ advisory board (Public & Private Sectors as well as Civil Society);
  - For neutrality: the management firm, transparently selected, should not have vested interest in the ISP market;
- GoRTT should undertake to:
  - establish Multilateral framework and



- strengthens legislative structures to enable ISPs right to IP interconnection
- The framework should be such that there is facilitation of competitive entry and operation within the role of IP carrier switching

## 1.2 Location

The groups were asked to consider the best possible location to establish the IXP. The findings of the groups are summarised below:

Group 1	Group 2
If industry leads, this will be a non issue as, ISPs that require the service will identify the optimum location for their own requirements...and provide their facilities to that point.	Finding the appropriate location should be within the scope of works/ terms of reference of the management firm.

### Recommendations:

After a brief discussion, it was unanimously agreed that a decision in this regard may be taken by the management firm which will be responsible for setting up the IXP.

## 1.3 General comments

The general consensus was that the IXP is conceptually sound; However, it is ideally an initiative to be led by the private sector/ ISP carriers; but, in the event that GoRTT takes lead in the short term; there was a consensus that there would be a framework for broader stakeholder involvement through:

## 2. Domestic Content Development and management

Two divergent courses of action proposed, again delineated upon:

- GoRTT direct involvement in infrastructure in some form, versus
- GoRTT focussing on incentives to develop the market organically.

Interestingly, parallel discussions proposed possible solutions which addressed the questions raised by groups – suggesting that the former may not be necessary to initiate market development

### 2.1 Stimulating domestic content creation

The groups were asked to consider what appropriate mechanisms should be pursued to promote the creation of the “net-izen”: the citizen that uses the



Internet in a meaningful way, day to day. The findings of the groups are summarised below:

<b>Group 1</b>	<b>Group 2</b>
There is no need for GoRTT intervention: There is substantial human capacity in the country (and region) in the software programming, content development sphere	GoRTT should enhance tacit capacity via: <ul style="list-style-type: none"><li>- Training &amp; sensitization programmes targeted to youth and educators</li><li>- Development of national e-payment infrastructures to support diverse e-commerce</li></ul>

### **Recommendations**

After a brief discussion, it was unanimously agreed that:

- There should be collaboration between private and public sectors, as well as civil society, to support the widespread development of the “net-izen”.
- Government needs to prepare the appropriate supporting legislative framework including:
  - Intellectual property protection;
  - implementation of Data protection policy via legislation and the establishment of the Data commissioner;
  - Consumer protection frameworks: to encourage confidence and trust; and
  - Encourage transparency of ISPs

### **2.2 Encouraging domestic content hosting**

The groups were asked to consider what mechanisms/ initiatives should be pursued to encourage a vibrant web hosting industry domestically. The findings of the groups are summarised below:



Group 1	Group 2
<p>Suggested GoRTT intervention through infrastructure development, proposed:</p> <ul style="list-style-type: none"><li>• Bundling infrastructure and governance of a National Data Centre (NDC) with that of IXP;</li><li>• Business model including both content and application service provision</li><li>• GoRTT financing needed to offset projected high infrastructure costs;</li><li>• Tax and fiscal incentives for firms to utilise NDC;</li><li>• Operational arrangements discussed for IXP apply similarly</li></ul>	<p>Suggested industry leadership, highlighted:</p> <ul style="list-style-type: none"><li>• Hosting “virtual space” is incremental cost for ISP;</li><li>• Infrastructural costs/ demands are characteristic of existing telecoms facilities of carriers: - GoRTT financing new infrastructure unnecessary</li><li>• Business model can be viable currently for “on-net” traffic – becomes viable for “in-country” traffic with inclusion of IXP</li></ul>

### Recommendations:

After a brief discussion, it was unanimously agreed that:

- Implementation strategy must leverage the existing capacity of private enterprise to support domestic hosting and the need for specialized infrastructure which may be provided by the government.
- As above, both groups agreed that government may provide an enabling environment through:
  - Creation of a legislative framework to encourage practice of selecting domestic hosting “space”
    - Data protection
    - Cryptography policy
  - Tax and fiscal incentives geared to:
    - Encouraging equipment purchase and import;

### Summary and Conclusion

The workshop provided a forum for open collaboration among various stakeholders in the domestic Internet industry.

The consultation has underscored the necessity of wider stakeholder involvement in the establishing of policy and strategies within this field.



Collaboration which includes civil society as well as the more familiar private-public relationships has found broad support as recommendations going forward.

Robust competition was identified as a key source of sustainability, providing the framework for capacity development and application in the wider economy.

The outputs herein outlined, in conjunction with feedback from stakeholders further afield, shall inform the ongoing deliberations by Government in determining a best way forward to ensure sector development and sustainability.



## Appendix A

Participant	Organisation
Mr. Ajmal Nazir	Green Dot Limited
Mr. Andrew Gorton	Digicel Trinidad and Tobago Limited
Ms. Keisha Modeste	Digicel Trinidad and Tobago Limited
Mr. Stephen A. Abhiraj	Ministry of Finance
Mr. Dev Anand Teelucksingh	Trinidad and Tobago Computer Society
Mr. Brian Jahra	Three Sixty Communications Limited
Mr. Ronald Lessey	TSTT
Mr. Ronald Mohammed	TSTT
Ms. Lorraine Phillips	TSTT
Mr. Lincoln Jitman	TSTT
Mr. Tariq Khan	UWI
Ms. Jacqueline Morris	Media21 Ltd, ICANN
Mr. Roger St Hilaire	RCD Systems and Processes Ltd
Ms. Dianne Job	RCD Systems and Processes Ltd
Ms. Kathryn Jones-Douglas	RCD Systems and Processes Ltd
Ms. Nalini Mahadeo	TATT

### Group 1

Mr. Ajmal Nazir (Discussion1)
Mr. Andrew Gorton
Ms. Keisha Modeste
Mr. Stephen A. Abhiraj
Mr. Brian Jahra
Mr. Ronald Lessey
Mr. Tariq Khan
Mr. Roger St Hilaire
Ms. Dianne Job

### Group 2

Mr. Dev Anand Teelucksingh
Mr. Ronald Mohammed
Ms. Lorraine Phillips
Mr. Lincoln Jitman
Ms. Jacqueline Morri
Ms. Kathryn Jones-Douglas
Ms. Nalini Mahadeo
Mr. Ajmal Nazir (Discussion 2)