

Voice over IP

The TSTT Experience

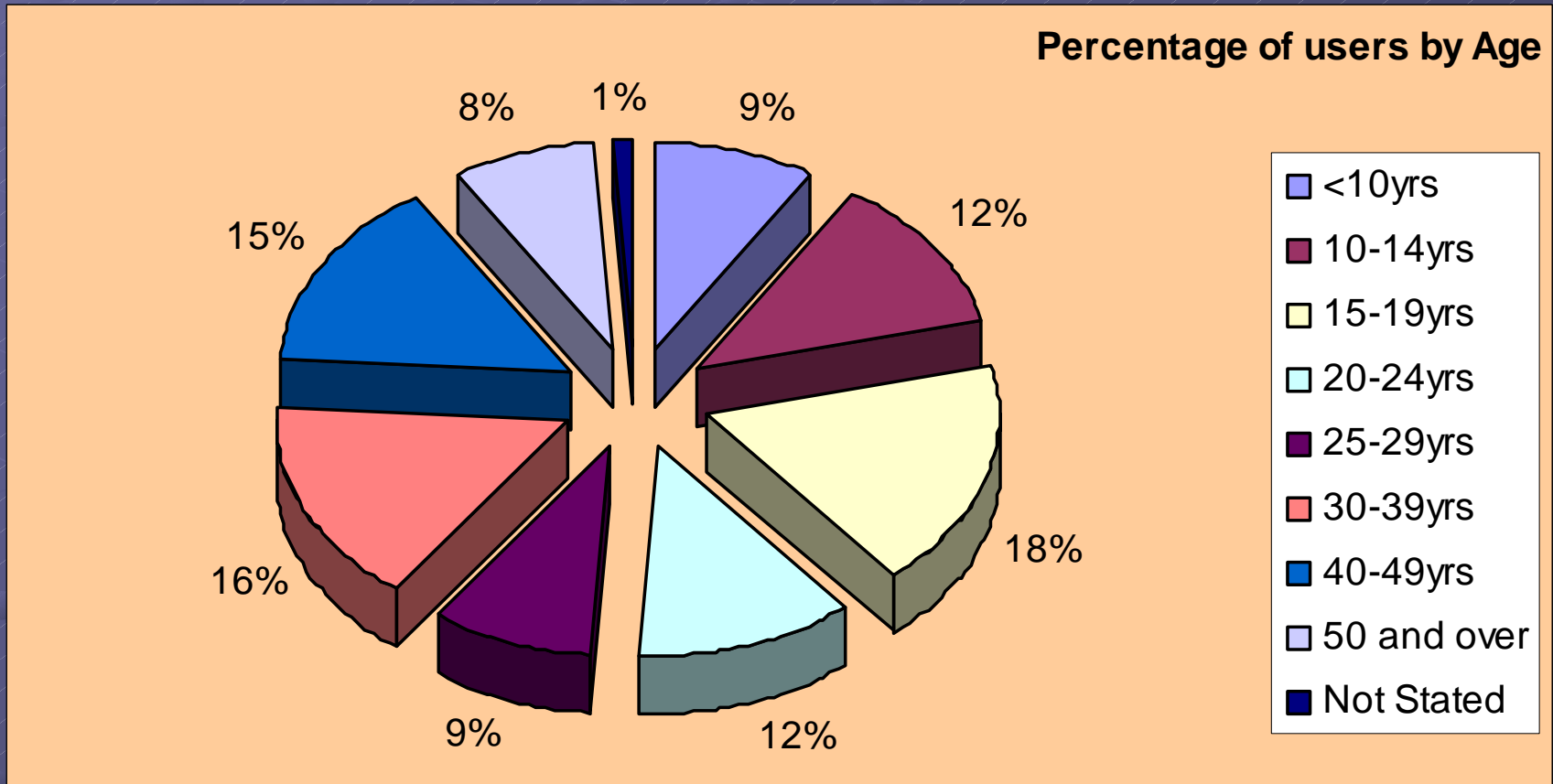
Agenda

- The Trinidad and Tobago Landscape
- Revenue Issues.
- International Traffic
- Methods employed to determine illegal traffic.
- What type of operations are typically involved.
- Some methods employed in dealing with illegal traffic.
- Typical VoIP Scenarios
- Possible VoIP strategy going forward...

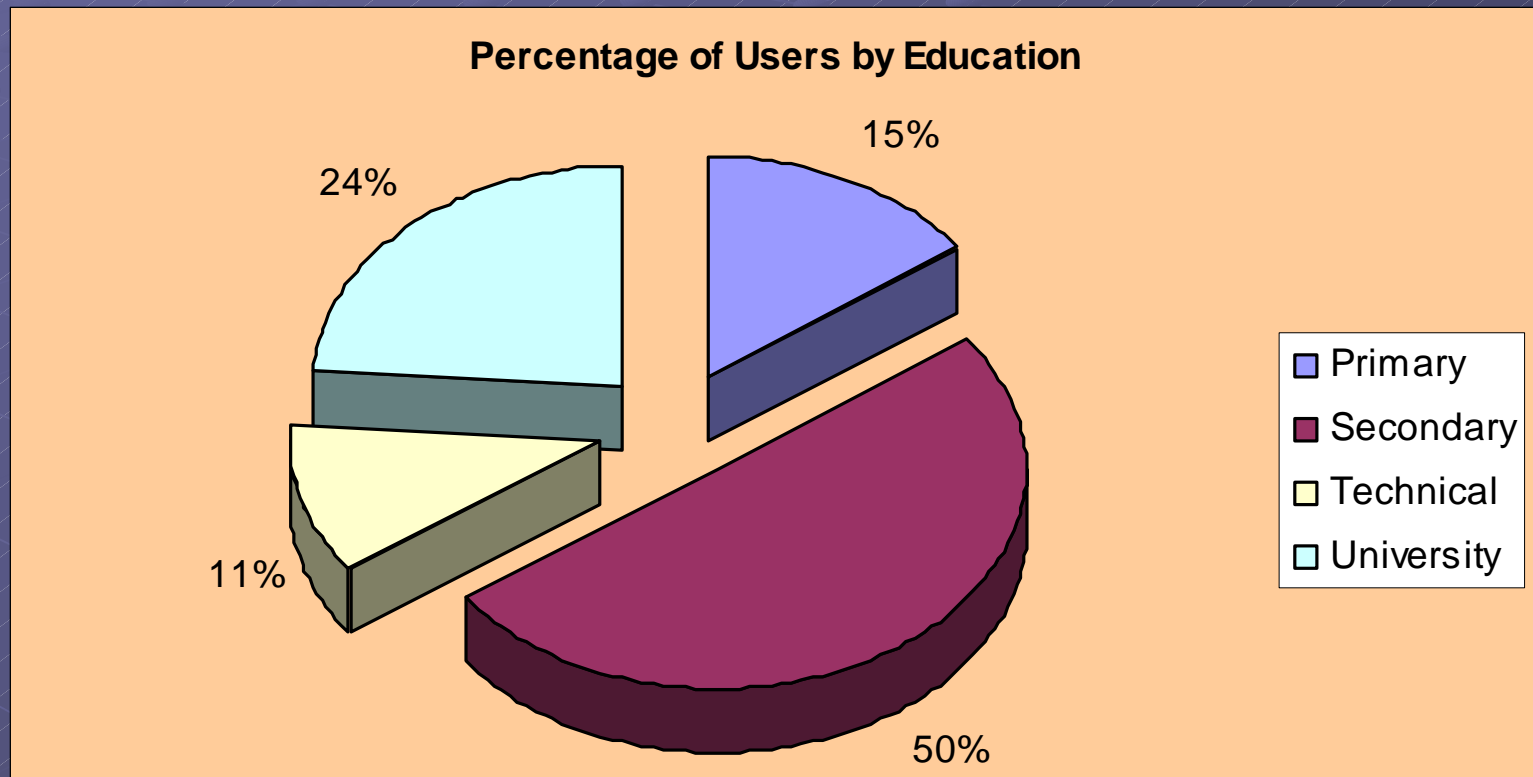
The Trinidad and Tobago Landscape

- Monopoly Telephony provider – TSTT
- “Un-regulated” data services
- New telecommunications act passed 2001 to allow for competition
- 5 Indigenous ISP’s on the island
- Estimated 70K Internet dial-up users locally
- Relatively constant growth rate for new dial-up customers

The Trinidad and Tobago Landscape



The Trinidad and Tobago Landscape



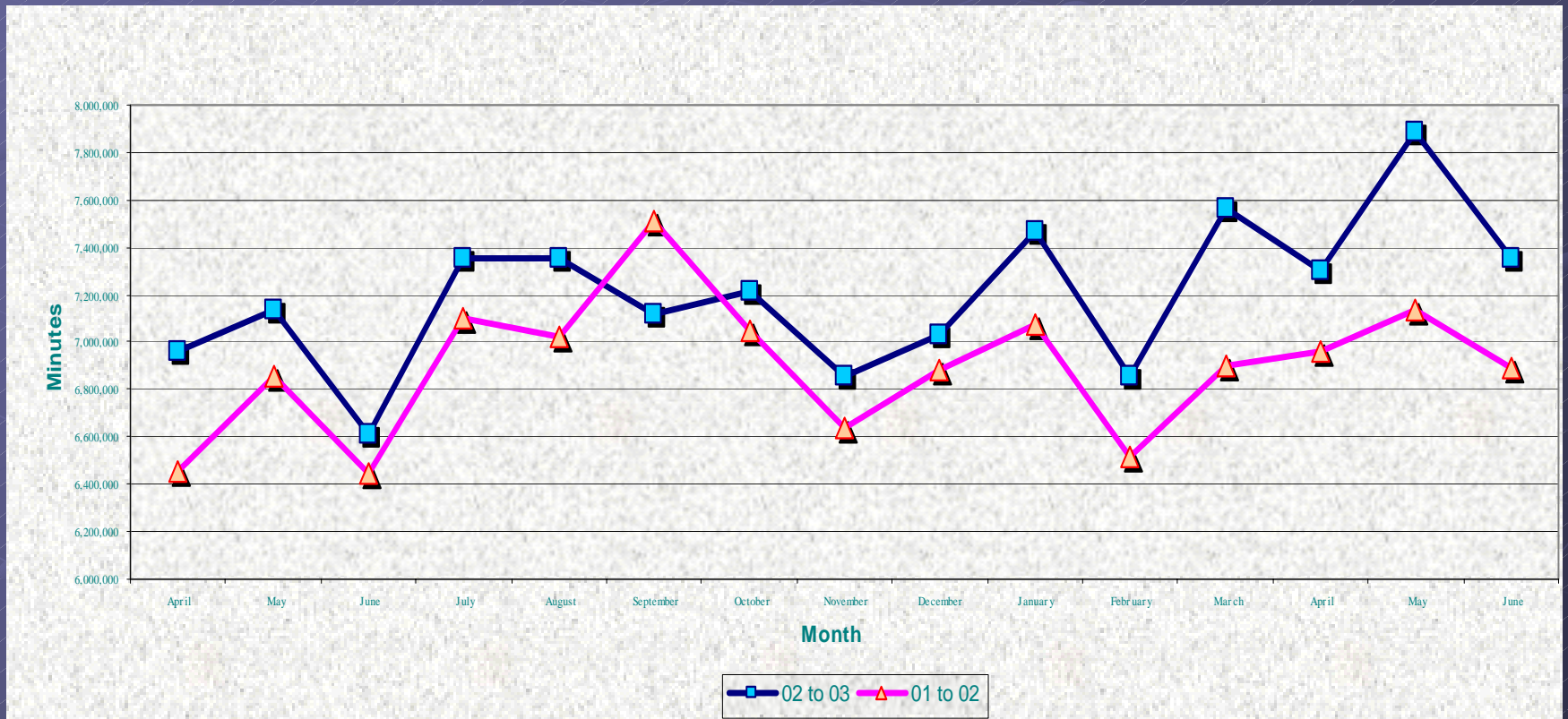
Revenue Issues

- Current estimated potential leakage of US\$400K / month (US\$4.8M per annum).
- Estimated losses for the 2002/03 financial year of US\$4M.

International Traffic

- Relatively “normal” traffic growth.
- No perceptible or easily associated movement of traffic to VoIP.
- International call termination rates are comparable between VoIP routes and traditional routes through teir-1 and trir-2 carriers (~US\$0.10)

International Traffic Volumes



What methods are employed to determine illegal traffic

- Uncharacteristic number of calls originated or terminated in comparison to the line of business
- Uncharacteristically large number of short duration calls
- Covert advertising and direct approaches to business

What type of operations are typically involved

- Internet service providers
- Large corporate entities with International Private Leased and voice lines.
- Call center operators
- Small business operators (5 to 10 lines)

Some methods employed in dealing with illegal traffic

● Identification

- Inspection of stated business operations and a match to the time and volume of calls originated and terminated on the network

● Confirmation

- Use of (legal) options to inspect the call content
- Opportunity created by service contracts to inspect provider equipment.

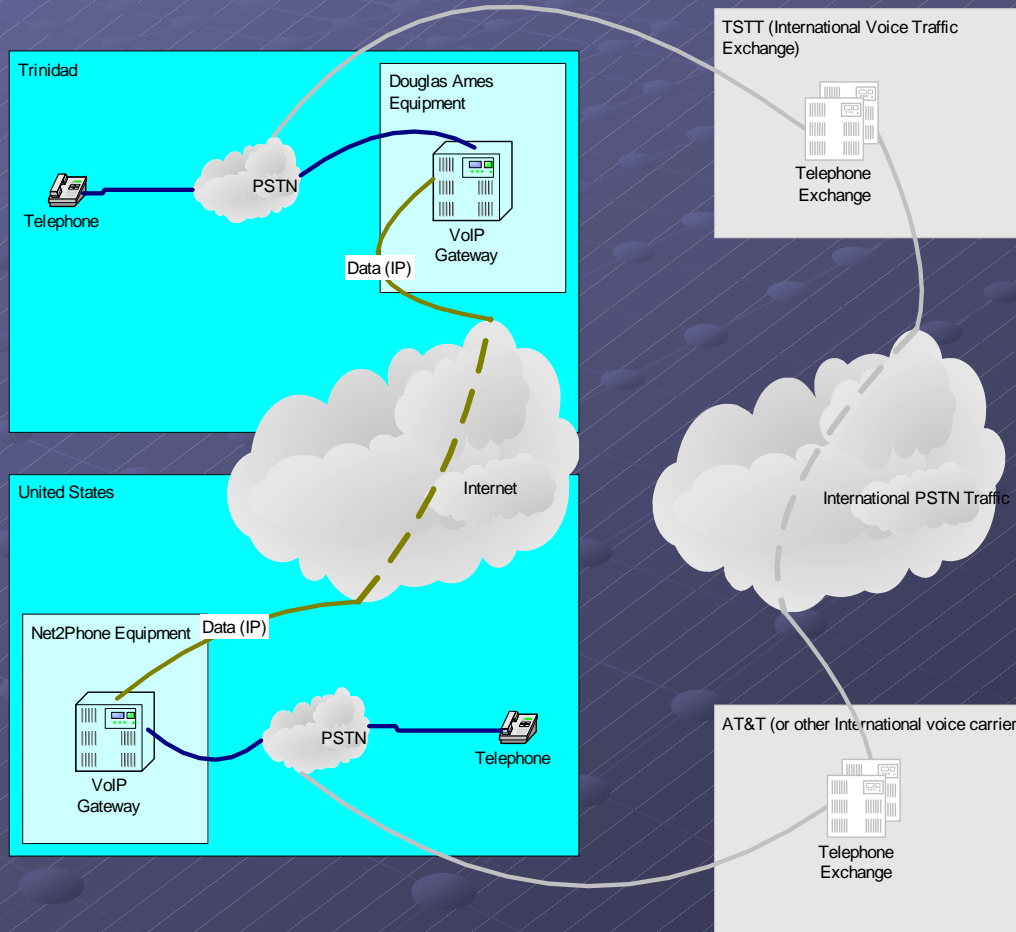
Some methods employed in dealing with illegal traffic

● Actions

- Self Help / technical actions
 - Blocking of specific Internet/IP ports that are typically used to facilitate VoIP
 - Removal of service from offending providers (for breach of service contract)
- Legal avenues - litigation
 - There are existing and pending cases regionally that provide a basis in law for actions in breach of the operating (telecommunications) licenses
- Service limiting actions
 - Imposition of “funnel” treatment on offending lines.

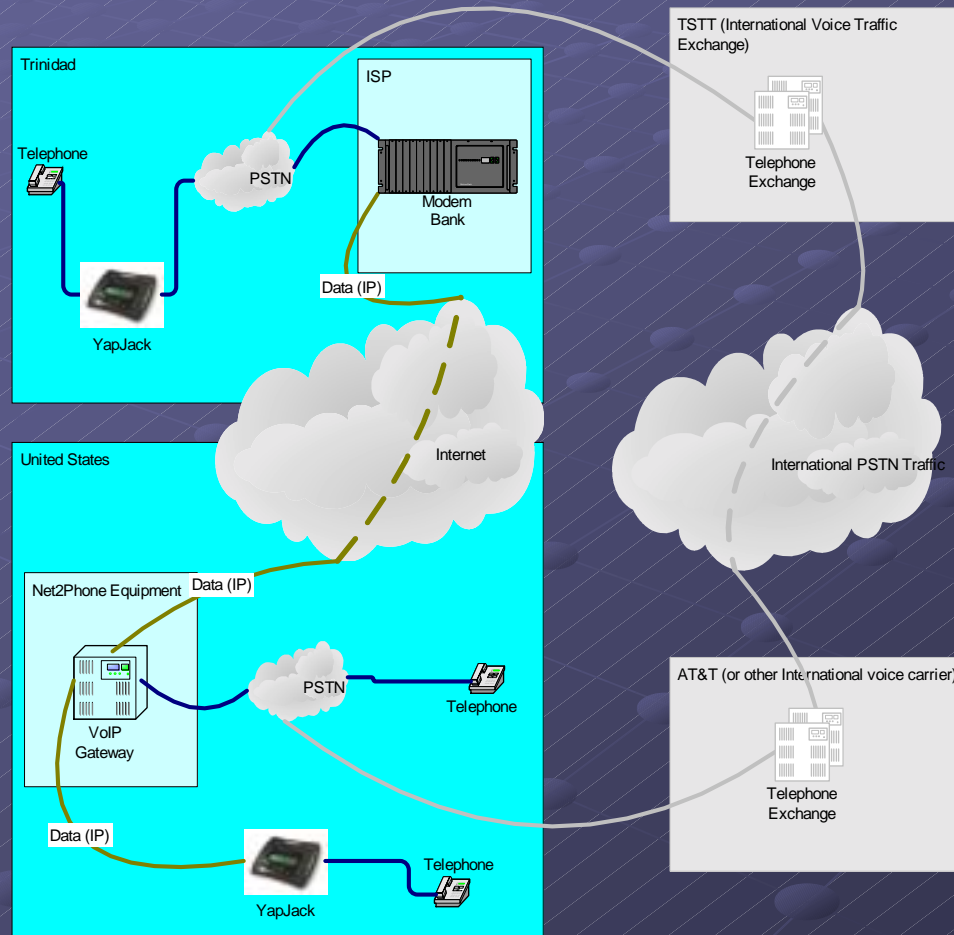
Typical VoIP Scenarios

Net2Phone Calling card Service



Typical VoIP Scenarios

Net2Phone YapJack



Possible VoIP strategy going forward...

VoIP needs to be tackled on several fronts at the same time:

1. Creation or lobbying for a legal environment that is **properly** structured to encourage competition
2. Creation of (cheaper) service alternatives for customers to choose from
3. Aggressive protection of your rights offered by the current operating license
4. Creation of (exclusive) service provider alliances that would serve to protect your environment.

Thank You

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