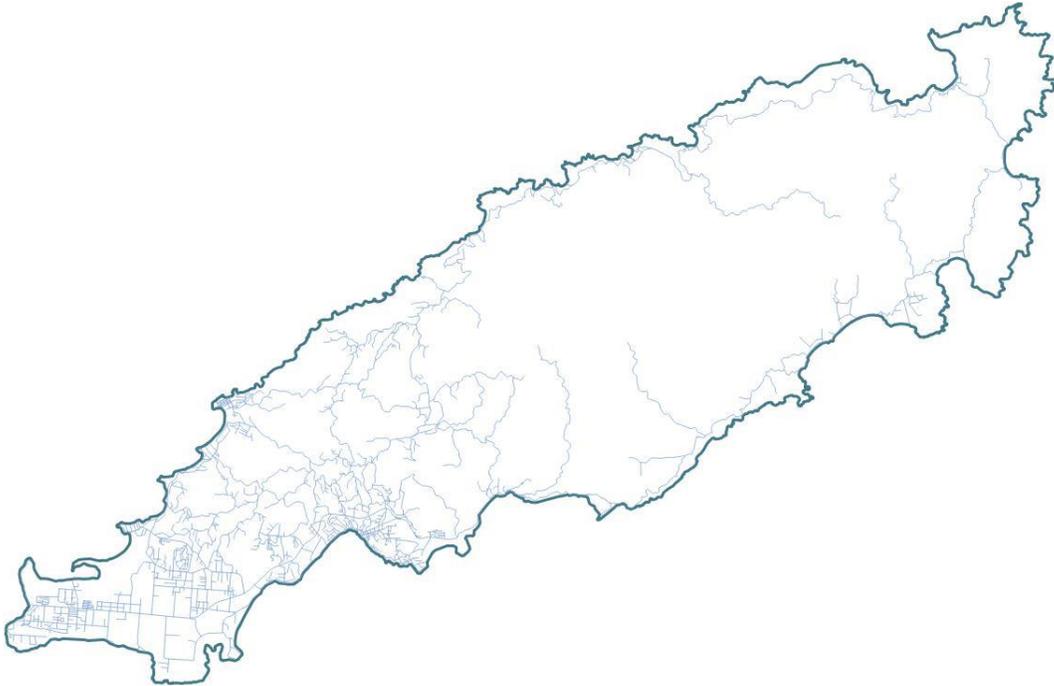# ICT Proposal for Tobago

Executive Summary

Chris Job

kchrisj@gmail.com

Executive Summary: Discussion of the Problem, Available Options and Recommendation

Proposal for Moving Tobago into the Digital Age
Executive Summary

INTRODUCTION

In the 21st century the populations of developed and developing countries expect five basic infrastructures in place: 1. Water & Sewage, 2. Electricity, 3. Roads, 4. Health Care, and 5. Information and Communication Technology (ICT).

In Trinidad and Tobago for historical reasons, the first four infrastructures are the responsibility of the government while the fourth is left up to the private sector. Without a well-designed and implemented ICT infrastructure there will be little or no access to the internet; higher costs for technology linked services; and little or no competition in some sectors like cable and radio.

Of the two islands, Tobago lags behind Trinidad in the development of its ICT infrastructure. Due to its topography and small population size, there is little or no profit incentive for the telecommunication companies in Trinidad to invest in this much needed infrastructure in Tobago.

OPTIONS

The options for ICT infrastructure in Tobago are:

- **Wired** – cables or fiber optics used to connect users (TSTT)
    - Extremely reliable
    - Very secure
    - Very good performance
    - Cost of build out is very high
    - Services may not be affordable for users

- **Cellular** – wireless technology to connect users (Digicel)
    - Extremely reliable
    - Less secure than wired network
    - Very good performance
    - Cost of build out is very high
    - Services may not be affordable for users

- **Wireless Mesh Network**
    - Extremely reliable
    - Less secure than wired network
    - Very good performance
    - Cost of build out is low
    - Services offered can be free or low cost to users
    - Robust and redundant (supports high demand)
    - Extremely adaptable and expandable

DISCUSSION AND RECOMMENDATION

The broadband connectivity (high speed internet access) resulting from the ICT infrastructure will have a huge positive impact on all sectors of the island, e.g., tourism, education, and government services, to name a few. In addition, it will put Tobago in a great position to leap frog ahead of the Caribbean and Latin America by its ability to offer the latest available technologies (e.g., cloud computing).

In order to reap all the benefits of broadband connectivity Tobago needs to take action to ensure that the ICT infrastructure is in place. For an island with the unique size, topography and demographics of Tobago I propose the setting up of a **wireless mesh network**.

The main advantages of building a mesh network infrastructure in Tobago are:

- The mesh network infrastructure can be built and maintained by a non-profit public private partnership.
- It can be built with off the shelf parts, which eliminates the cost and complexity of installing fiber/wires.
- If one link becomes unusable, it does not incapacitate the entire system. It can be designed so that the network will be programmed to automatically take up the slack when parts of it are down (especially in cases of a disaster).
- One wired node shares its internet connection wirelessly with all other nodes in its vicinity.
- Services to businesses and individuals can be either free or low cost.
- Can be used as an environment to expose and train youths in various technology areas.
- Infrastructure build out can be completed on a sector by sector or community by community basis.

APPENDIX
The following are examples and case studies of successful wireless mesh networks:

- The Catalonia region of 50,000 people in Spain is a good example of the deployment of a wireless mesh network (Guifi.net). It was developed in 2004 as a response to the lack of broadband internet, where commercial internet providers weren't providing a connection or a very poor one. Nowadays with more than 30,000 nodes it is only halfway a fully connected network, but following a peer to peer agreement it remained an open, free and neutral network with extensive redundancy (Wikipedia – Mesh networking).

- (Red Hook Wi-Fi) is a community-led iniative to close the digital divide, generate economic opportunity, facilitate access to essential services and improve quality of life in Red Hook, Brooklyn NY via the deployment of a wireless mesh network. In partnership with local businesses and residents, Red Hook Wi-Fi is providing residents with access to the Internet and to the resources of its Initiative. This is a neighborhood in Brooklyn where broadband adoption rates are lower than the city average. Red Hook Wi-Fi is completely free to users (Red Hook Initiative, Brooklyn N.Y.)

Schematic of a wireless mesh network
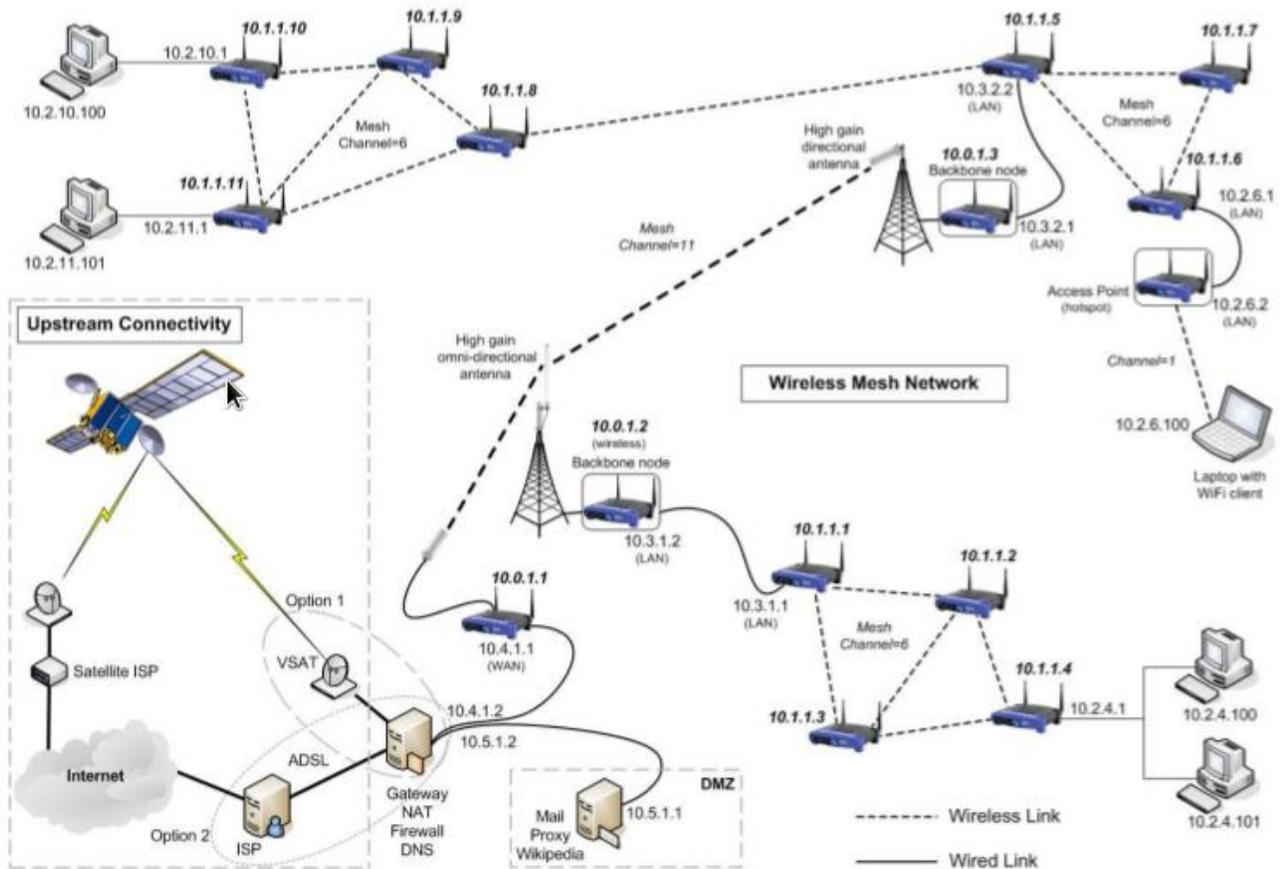
Neighborhood view of a wireless mesh network