

WHITEPAPER

Planning and Deploying

Community Wi-Fi

AUGUST 2019

AttreLogix Networks

www.attarelogix.com

01

Why Community
Wi-Fi?

02

What is Wi-Fi?

03

The Wi-Fi
Cook Book

04

Who is the
Community?

05

How to maintain
the network?

06

Summary



Giving People Free Wi-Fi Can Help To End Extreme Poverty

Why Community Wi-Fi?

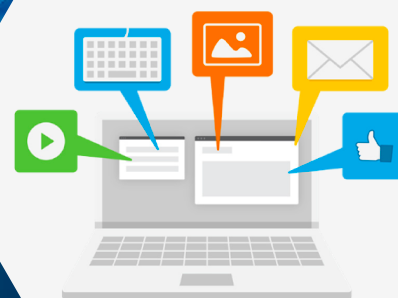
One of the most requested items in any city planning master plan is the “Wi-Fi Zones and Hot-spots”. A public internet connection means there is one more place where citizen can connect to a world in which they feel comfortable, where they can research the closest good restaurant, look at pictures from friends’ adventures on social media, and find out quickly whether Nicholas Cage was in National Treasure 3 without using up cellular data plan.

But aside from allowing people to check in on social media or send that essential email, there are many other benefits to building a free community Wi-Fi zone. Some real benefits to free community Wi-Fi internet access includes...

DISASTER RELIEF



DIGITAL LITERACY



TOURISM PROMOTION



When natural disaster strikes, many communities are having difficulties in getting timely messages out to everyone. Communication methods ranged from daily meetings to printed newsletters, updated municipal websites, social media and local radio stations.

In a disaster situation, it's relatively easy to get a community Wi-Fi up and running. A small generator or solar panel will do the trick. With cloud management, administrator can add information to the captive portal which could easily be used as a means to spread information about where to volunteer or get help, what roads are closed, and what supplies are needed. Wi-Fi zones can become a key part of communication in a post-disaster situation.

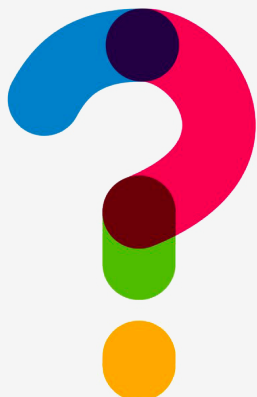
People recognize that a town is "cool" and "hip" when their smartphone dings a free Wi-Fi signal as they stroll through. That free Wi-Fi gives them a motivation to stop and explore the town more, and also allows the town to be recognized as a forward-thinking place.

In addition, Wi-Fi hotspot can be set up so that a landing page is seen by everyone who begins to use the free Wi-Fi. This page can have a calendar of town events, a listing of local eateries, and a page on things to do. At times, most of the Wi-Fi users are visitors, they have stopped in one of the stores and decided to log on to the Wi-Fi zone. They might just want to check their email, but each of those visitors will see what else the town can offer them as well.

Wi-Fi has always been the key technology to address Digital Divide where communities are being left behind because they don't have access to internet. Libraries are making great strides to stem this issue but internet access is now more important than books.

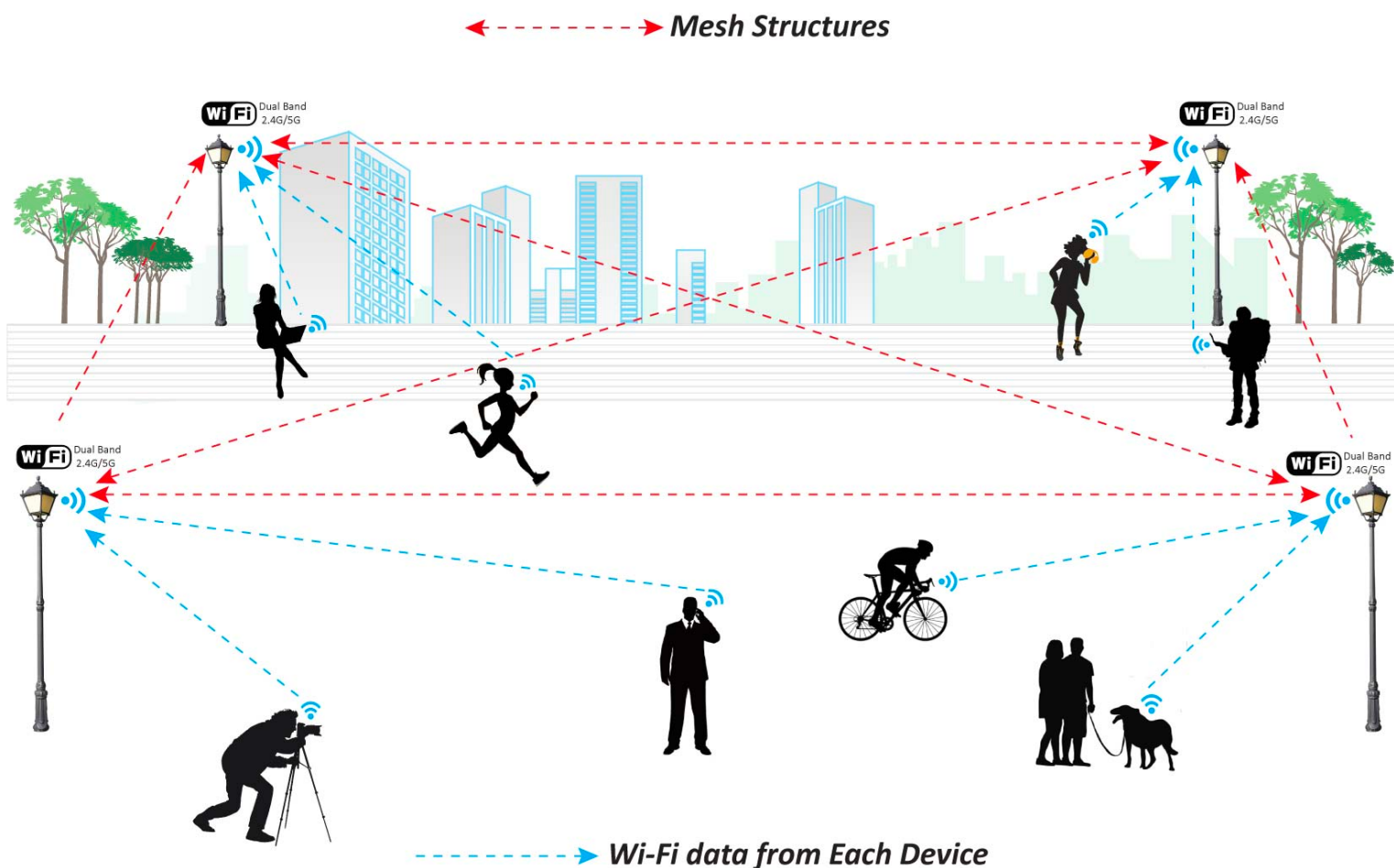
Even community centres have closing times, there are people driving miles to park outside of a closed facility and use its Wi-Fi. In town, people buying food from a restaurant with free Wi-Fi just so they can check their email. A community Wi-Fi zone would always be running, and would not necessitate food purchase. It would allow students to find a place to do their homework, and others can check their email, or apply for a job.

What is Wi-Fi?



Wi-Fi is a popular technology that allows an electronic device to connect to the internet wirelessly using radio waves. It uses the same technology that is in a simple radio to project the internet, which can then be collected by any device that has a Wi-Fi receiver (such as a smart phone, computer, or tablet.) It is a way to get and transmit internet wirelessly using short-range radio-waves, which is different from the cellular data plans you can get on your mobile device (3G, 4G, LTE or even 5G). Wi-Fi is shorter range and is connected to a local access point or router that is plugged in to internet from a cable, fiber or DSL connection, whereas mobile data comes from larger cell towers.

From a user's perspective, most smart phone users have limits on the amount of data they can download on their phones, and to use it, they need to be within range of a tower (which can be challenging in some rural areas). Often, given the choice between joining a free local Wi-Fi network or using up data (which they pay for), users will opt for the free Wi-Fi. More often than not, cellular data plans can be costly for average income users.



The Wi-Fi Cook Book



Five things to look out when selecting access point...

- **Purposed-built AP** - ease of deployment
- **Antenna Technology** - for coverage and user experience
- **Mesh Capability** - to address backhaul challenges
- **IP-rating & Durability** - low or free maintenance
- **The Wired Network** - unified control and management

6 out of 10 Wi-Fi issues are backhaul related, which make selecting the right internet connection to power the Wi-Fi network is extremely important. Consider deploying SD-WAN to combine multiple best effort internet lines to create enterprise or even carrier grade reliability. It is a more cost effective and sustainable solution for the community Wi-Fi network.



Besides physical network, software is an integral part of the end to end architecture. In the modern world, most of the management, control and monitoring capabilities are cloud hosted and remotely accessible from anywhere. It's important to have a "**Single Pane of Glass**" **Dashboard** view and ability to get notified via instant app message for any anomalies across the network

A key factor to a successful Wi-Fi deployment is the user experience, from the moment their smartphone associate to the Wi-Fi network, to captive portal pop-up, followed by login steps and verification methods. Many Wi-Fi networks suffer low usage due to poorly design web pages, misleading messages and lengthy process to get connected. Always practise the rule of 1-2-3!





Who is the Community?

Stakeholders

- 1** Local Business Owners
- 2** Local Citizen
- 3** Town / City Council

Operators

1 Moderator

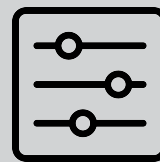
- Look after the Wi-Fi zone once it is up and running
- Moderate the network using cloud management tool
- Ensure no abuse of the free internet
- Be the first point of contact for community members
- Be responsible for maintaining the Wi-Fi network

2 Committee Members

- Connect with members within the town for best placement of AP
- Gain permission from landlords and town business people for installation
- Address any concerns that the community might have about the project
- Be responsible for coordinating the process, creating a liaison between business owners and technicians

a successful way to create the network involves asking businesses to “donate” unused bandwidth, which is then used to power the community Wi-Fi zone

How To Maintain the Network?



Once the Wi-Fi network is up and running, it will require some ongoing maintenance. While this maintenance is minimal, it is important for the moderator to be comfortable with the process of troubleshooting access points, and adjusting controls or configurations on the cloud management platform.

Some settings may need to be adjusted as the Wi-Fi network continues and moderator(s) responds to public input. For example, certain Wi-Fi zones were set with speeds fast enough to easily access information online but not fast enough to compete with commercial broadband subscriptions. Some towns required adjustments to reach that balance.

What is your funding strategy to upkeep the Wi-Fi network?



1 Council Budget

When town councils realize it is an important part of improving a downtown district, they are willing to budget for it.

2 Business Sponsor

Post login landing page, among others, is a real estate where businesses can opt to have their brand shown for better client engagement.

3 “Broadband Donation”

Establish an ecosystem where businesses donate their unused internet bandwidth to support Community Wi-Fi as an internet source.

DO YOU KNOW?

More than **90%** of the Community Wi-Fi networks deployed globally are sustained through combination of multiple funding strategies.

Summary

Town and city councils globally should take advantage of significant evolution of cloud computing and silicon chipset over the last 10 years, and drive Community Wi-Fi initiative through collaboration with local internet service providers and technology vendors.

Community Wi-Fi holds a lot of potential for enabling a functional connected future, where the barriers between private and public Wi-Fi blur to the extent that both humans and machines are able to be constantly and reliably connected.

The key to ensuring that the connected city, and indeed the connected world works, is to make sure that just as the traffic on our streets is regulated, so too is the data traffic in our air.



AttreLogix Networks Sdn Bhd (1191795-D)

6F-05, Tower 5, Puchong Financial Corporate Centre, Jalan Puteri 1/2,
Bandar Puteri Puchong, 47100 Puchong, Selangor, Malaysia

Tel: +6016 282 6686 | Email: info@attrelogix.com

