

Town WiFi

A Guide

Introduction

The Digital High Street Advisory Board have produced the 'Digital High Street 2020 Report' which highlights a number of actions High Streets can take to remain competitive and serve the changing needs of customers. The report defines a number of aspirations that town centres should aim for, as follows:

- Economically strong
- Convenient
- Engaging
- Relevant
- Adaptive
- Authentic and diverse
- Experiential

Local leaders and influencers can consider a number of factors to make sure that a town's digital potential is 'switched on', these include:

1. Assess and invest in the local digital infrastructure to consider factors such as the availability of broadband, mobile data and public WiFi schemes.
2. Monitor and develop the digital skills and presence of retailers and other service providers.
3. Understand the 'customer profile' of the town and work with businesses and other stakeholders, to develop the town brand and offer, to match with customer expectations and needs.
4. Create and use every opportunity to gather data and intelligence from digital interactions so this can help monitor progress, understand footfall, target marketing and lead to improvements in the customer offering and service standards.

Town centre areas, and high streets in particular, have seen a large scale impact from Digital Technology. This includes online sales, click and collect, mapping and amenity identification via tourist and shopper "trails". There is a general need to "raise the game" in terms of what a Town centre offers, to maintain customer traffic, footfall and viability. Digital High Street Activity provides economic benefit and new opportunities.

Digital resources can be used to alleviate poverty. Digital Inclusion promotes a multitude of ways for individuals and groups to improve their financial and social position. Examples include enabling a reduction in transportation costs, access to money saving and price comparison. Digital Inclusion also raises knowledge and accessibility of services available, increasing their use. Universal Job Match, Leisure

Centres, health information and support facilities can be accessed more easily and efficiently. Wi-Fi improves access to the Digital culture, with all the benefits that entails.

This links to improving opportunity and viability for retailers by focusing on Digital activity. Where innovative Digital services are used effectively (or existing services are “streamlined” by using Digital Access coupled with “cloud” technologies) businesses can increase profitability by working more efficiently, saving both cost and improving customer access and sales. Wi-Fi can have the effect of maintaining and driving pedestrian traffic into Town Centres, increasing potential sales.

A thriving town centre improves employment opportunities, both within the retail sector itself, and with its associated service industries. A “Digitally Dynamic” town centre also raises the potential for external investment, and can help to attract national and international companies into the area, enabling them to contribute to the quality of life in an area.

How does a town WiFi scheme work?

A series of WiFi access points are placed at strategic locations in the town to provide ‘free to the user’ broadband to enable visitors to access the internet. A business is required to act as a host, for both placement of the access point and ‘piggy backing’ on their broadband service.

See below for an example of an access point located on a building which is part of a scheme in a Welsh town.



As seen, the access point is quite discreet, no bigger than a burglar alarm. They don't tend to need planning permission although in some cases, within national park areas for example, it does make sense to inform the relevant authorities that these access points are being installed so that they know about them. On occasion, authorities have advised the best location for the access points on particular buildings so as to minimize their visual impact on the area.

Firstly, and most obviously, giving visitors free WiFi whilst outdoors in the coverage area will be seen as an added draw to the Town. Where schemes have been implemented, there has been strong anecdotal evidence of increased footfall and dwell time directly outside access point locations where the WiFi signal is strongest.

Secondly, the businesses need to agree to provide the use of a standard power socket to provide electricity to the unit. The approximate annual cost of electricity to these points is around £25 a year. In some cases towns have sought to offer incentives to the businesses to offset this cost in the form of a reduction in membership fee to the town's chamber of trade, business circle or similar, or offer a reduction on an advertisement on the town website for example. However, in most cases, businesses are happy to absorb this relatively small cost into their running costs.

Also required is a connection into the business's internet connection which needs to be a contract with unlimited data. If an access point doesn't have a direct internet feed, it can still provide WiFi as long as it is close enough to another access point with an internet feed. The system will 'mesh' together to provide the best performance depending on the various connections. However, although it isn't critical for every access point to have an internet connection, the more points that have one, the better the system will perform. It increases the performance of the system as more bandwidth is available and it increases the failover of the system as a whole if problems occur with a particular connection.

In order to maximize performance of the system and to ensure as many users have access to a functional system as possible, it is good practice to place a reasonable limit on the type of usage available to them. The following are general recommendations and can be amended according to specific needs of the scheme.

Firstly, the amount of bandwidth available at each business should be established and an agreed proportion of this should be given to the WiFi system. This ensures that the internet connection of the business in question is still able to meet the requirements of that business. For example, in a business with an internet connection of 80Mbps (the highest level of speed currently available through a superfast connection), the business may agree to allow the public WiFi system to use up to 20Mbps at any one time.

However, for a lower connection with lower speeds this would need to be amended accordingly.

Similarly, each user device should be limited to a certain amount of bandwidth. It's recommended to limit the type of content available to the device via this scheme so that things like video streaming, downloading music, downloading software updates and similar resource-heavy applications are not allowed. This, coupled with a device limit of, for example 0.5 Mbps (which is enough for general web-browsing, uploading images etc.), will ensure that the maximum number of devices can use the system without degradation of the service.

The above information will answer most of the standard questions and concerns of businesses in the area and should lead to a high proportion of businesses agreeing to host an access point. Outlining the business benefits of the scheme is also a useful way of getting businesses to get onboard with the scheme.

The strongest benefits though are the analytics data and the user data which will be extremely useful for marketing purposes.

The system

There are two main parts of a WiFi system. They are

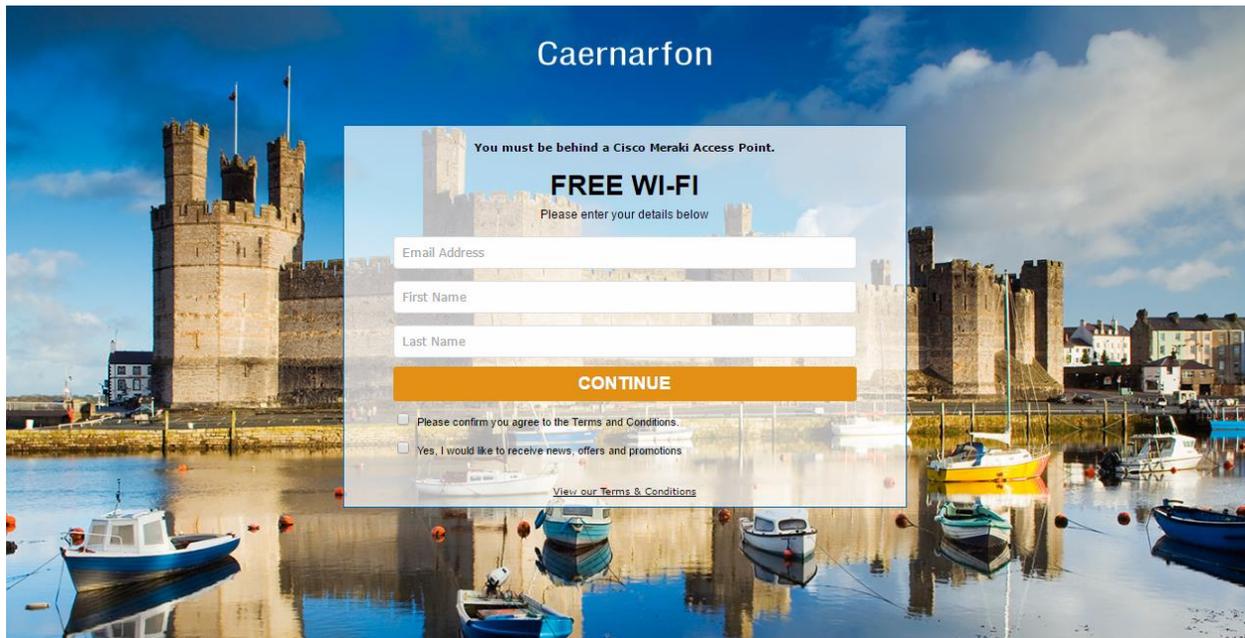
1. The initial splash page that collects user data before they are permitted to use the system.
2. The data analytics system which collects anonymized data from all users of the scheme and of those devices within range of the scheme even if they haven't logged on to use it.

Splash page

When an user first logs on to the WiFi system, they should be presented with a splash page such as is shown in the following illustration. The data asked for on the splash page can be bilingual if required and can be amended to ask for any information you require but it's usually a good idea to keep this as simple as possible.

This particular example asks for:-

1. First name
2. Surname
3. Email address



This information is kept in an encrypted database and should only be accessible to authorized users. The number of authorized users should be kept to a minimum to ensure that the data within it is not abused.

A beneficial way of using the data is to create a marketing campaign so that emails are sent periodically to all users on the list containing all the individual offers and adverts etc. from the town's businesses.

There is a good choice of effective and inexpensive software available that can manage this process for you.

On this example splash page there are two tick-boxes which are:

1. To agree to the terms and conditions of the system. This can be read by clicking the associated link at the bottom of the page. Access to the system cannot be gained without the users ticking this box.
2. To opt in to email marketing. This box is optional and users can gain access to the system without ticking this box.

By keeping the two tick boxes separate, the average percentage of people opting in to receive the marketing material is around 10%. A further option you have is to amalgamate these two tick boxes into one whereby users would need to agree to the terms and conditions and to receive marketing material before they gained access to

the system. In other schemes where this has been done, the drop-off in the number of people accessing the WiFi has been negligible.

Analytics data

The WiFi system should be capable of providing analytics data of the devices (and therefore people) within range of the system. The market leader in providing WiFi with the combined capability of analyzing footfall and other analytics is the Cisco Meraki system. It does this by logging when each device is within range of an access point and monitoring it until it moves out of range of the system. This data captured is completely anonymized in that no personal data is logged and is achieved by recording a unique identifier that each electronic device has which is its MAC code.

The system is extremely powerful in terms of the data it can give you but here is an example of some of the more basic data that it captures that you should find useful.

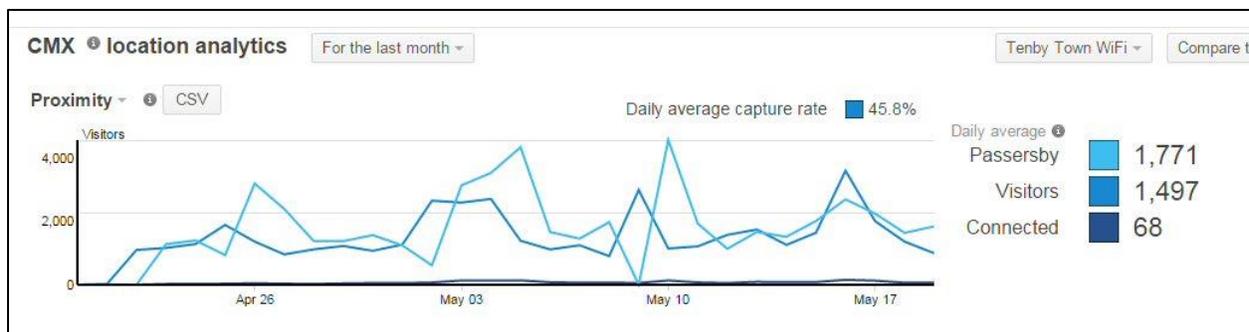
Below is data captured during a trial scheme we installed in Tenby during May 2015.



Basic overview of system showing location of access points (green/yellow shapes). The colour of the access point shows the current status of the point with green indicating full function and yellow indicating a minor problem, in this case a system update which lasts a few minutes usually. The numbers contained within these shapes are the number of devices that logged on and used the WiFi during the last day.



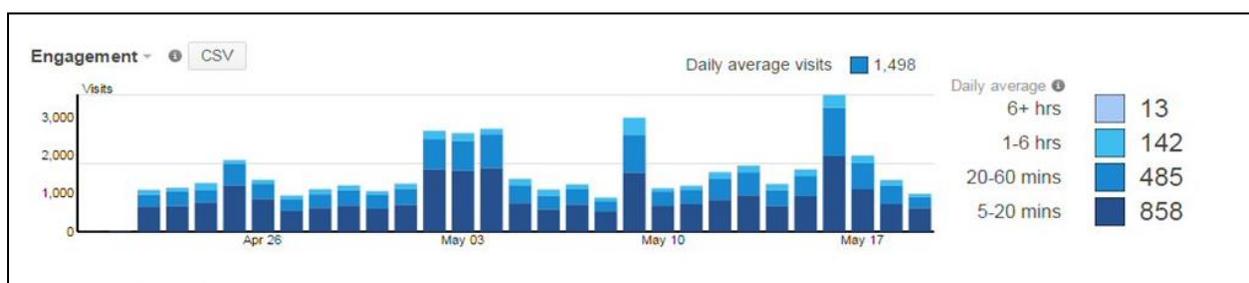
This is a heatmap showing the relative density of devices within range of the system at a particular point in time. The colour red indicates the highest density of devices down to green which is the lowest density. The small circles show where are individual devices are located – blue circles show that they are connected to the system and grey circles are ones that aren't. These locations are approximate but give a good indication of average locations over a period of time. This example is at 6PM one particular evening and the two large red areas in this example are a pub and a restaurant respectively.



This screenshot is an example of the number of devices detected by the scheme on a daily basis across a period of a month in 2015. The figures are categorized into three parts as summarized on the right into 'passerby', 'visitors' and 'connected'. These are average daily figures and are defined as:-

1. Passerby – a device detected by the system but that was within range of the system for less than five minutes during that day.
2. Visitors – devices that were within range of the system for more than five minutes during the day.
3. Connected – devices that were used to connect to the internet or an app via the system.

The first two figures add together to give the total number of devices detected by the system on a daily basis over that particular month which is 3,268.



Also available is this data which is the amount of time each device was within range of the system as a daily average. As you'll see the majority of devices are within range for a short amount of time (less than 20 minutes). Also from this graph it's clear to see the busiest days (represented by the higher peaks) and also a longer three-day peak which is the May Bank Holiday weekend.

A combination of these sets of data can give you valuable insight into the general patterns of movement and visitor numbers over a certain period. This data is for the

scheme as a whole but can be broken down to each individual access point and each user can be looked at individually as well.

It can also tell you more about the users – what device does the user have, what websites do they most frequently look at, how much data do they download etc.

Once you have this data, you can compare to expected averages and ask questions such as, Which social media platform should I use to maximize my marketing to my potential customers? Does the town attract more or less Apple users or Android users than I should expect on average and what does that tell me about the types of people that visit the town? The usable data you can draw from this information is huge and could prove invaluable to businesses as they look to develop their offer and measure its success.

How to proceed with a scheme

We would suggest the first stage in developing a scheme would be to undertake a feasibility study to look at the coverage area required and assess where access points might be located to cater for the footfall and topography of the town.

Another consideration for most town's would be to identify who would be the main sponsor(s) and users of the scheme which might include the Town council, chamber of trade, business group or Business Improvement District initiative.

In the first instance we would welcome an opportunity, to outline to the full range of stakeholders in a town, the opportunity that a town WiFi scheme opens up to the traders and businesses and what is involved in developing a strategy for implementation.

You can start a discussion by contacting Aled Davies, our Town WiFi Executive, using the following contact details:

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