



## **Local authorities, WiFi and the SCCP:**

Exploring the business case for local authorities and suppliers

**Prepared by:** Annelise Berendt  
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Point Topic Ltd  
73 Farringdon Road  
London EC1M 3JQ, UK  
Tel. +44 (0) 20 3301 3305  
Email [annelise.berendt@point-topic.com](mailto:annelise.berendt@point-topic.com)

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## 1. Introduction

A new study published by the European Commission has highlighted the importance of WiFi for European consumers and recommends that extra spectrum should be made available across Europe to support this rising demand. In the UK, the Super-Connected Cities Programme (SCCP) identifies wireless connectivity as a key ambition, which has led to a flurry of recent activity in wireless concessions.

This new report from Point Topic focuses on how local authorities in the UK are using WiFi in their broadband plans and their motivations. We have included several case studies on local authority deployment and examined the challenges facing smaller authorities outside the SCCP.

We also profile the main suppliers bidding for wireless concessions and look at the business model for entering this market. Free WiFi is not commercially viable for these players, and so frequently a local authority's ambition to provide free public WiFi needs to be a benefit negotiated into a wider wireless concession that is predominantly about small cell deployment – while still a speculative market this is expected to be the real revenue driver for suppliers.

Point Topic believes that significant changes are occurring in this sector and we will continue to report on it with interest. If you have any questions or comments on the report, or if you would like to contribute your own experience of working with wireless broadband solutions, please [get in touch](#).

## 2. Options for wireless connectivity – DCMS and the SCCP

In July 2013, DCMS published its [Options for Wireless Connectivity](#) as part of the Super-Connected Cities Programme. The publication states that “wide-spread, fast and high-quality wireless connectivity is a key ambition of the £150 million Super-Connected Cities Programme (SCCP)”.

The publication outlines three choices for wireless solutions within the SCCP:

### 1. Wireless concession contracts

The city authority grants an operator the right to use city authority assets to provide a wireless communications network and receives payments (fees and revenues) in return. The assets are usually street furniture (i.e. lampposts, CCTV, traffic lights etc.) and buildings.

21 SCCP cities were considering the wireless concession contract in July 2013.

### 2. Hot spots in public buildings

Establishing wireless technologies within public buildings, such as council buildings, museums, libraries and health centres, to provide wireless connectivity for members of the public inside, as opposed to outside. A hot spot typically uses WiFi technology although DCMS has recommended a technology neutral approach.

16 SCCP cities planned to install hot spots in public buildings in July 2013.

### 3. Wireless transport services

Implementation of improved wireless connectivity on public transport services within city centres such as buses and trams, where the service cost is less than the De minimis threshold for State aid and/or the transport service is publically owned and operated.

Eight SCCP were considering wireless transport services projects in July 2013.

At the end of September 2013, Point Topic knew of the following supplier tender wins for the major suppliers:

Table 1: Recent wireless concessions awarded (24 September 2013)	
Supplier	City
Arqiva	London Boroughs – Camden, Wandsworth, Hounslow, Islington and Hammersmith & Fulham, Barnet, Haringey Manchester, Southampton, Colchester, Eastbourne Has at least 12 concessions in total.
BT Wholesale	Cardiff Expects two more contracts to be announced shortly.
Virgin Media Business	Leeds/Bradford Birmingham One more contract expected to be announced shortly.
Telefonica O2 WiFi	Westminster

All tenders through the SCCP are being issued under European procurement rules.

In August 2013 the European Commission published the results of a [new study – Study on the importance of WiFi & the socioeconomic benefits of using small cell infrastructures](#) – which emphasised the importance of WiFi for European consumers and recommended that extra spectrum be made available across the European Union in order to support expected demand.

### 3. Local authority motivations for using WiFi

There are already several success stories for local authorities providing public WiFi services. [Newcastle](#) already offers some free WiFi in public buildings, especially libraries, as part of its own internal connectivity contracts. Bristol City Council also has a long history in public WiFi which is profiled in detail in the [case study](#) below.

Even so, some early WiFi schemes initiated by local authorities appear to have failed. In 2005 lampposts in Islington were used to create a 4km area of free wireless access and the scheme was expanded to cover 10,000 local authority homes in 2008. However the initiative became a victim of local authority spending cuts – it was not regarded as high enough priority to maintain. In Swindon the company due to install a free WiFi network across the town in 2009, Digital City, in which the Council had a stake, went out of business before the network was up and running.

As part of the research carried out for this report, Point Topic interviewed representatives from several local authorities that are already delivering or planning to deliver public WiFi solutions. Many

reasons were offered to rationalise providing free public WiFi, covering public amenity, technology infrastructure and financial return.

Full [case studies](#) for a selection of the authorities interviewed are provided at the end of this document.

## Public amenity

- **Digital inclusion** – providing at least one WiFi network that residents in the city can use at no cost, as long as they have a WiFi-capable device. These networks could be provided in public spaces and places where residents or visitors gather socially.
- **Benefits of access to public and private services** – services could provide access to invaluable public and private services such as job vacancies, access to benefit claims and price comparison sites.
- **Social value** – reaching out to the community through digital channels to reduce costs.
- **Remote working** – embracing mobile working in spaces with public WiFi.
- **Meeting expectations** – there is a general view that residents and visitors now expect free public WiFi in major cities, and that these services are essential for the future.
- **Political standing** – once other cities start to offer free public WiFi services there will be increasing pressure on others to offer it too.

## Technology infrastructure

- **Looking to 4G** – ensuring that 4G technology is enabled in a city and possibly brought in earlier as a result through small cell deployment facilitation.
- **Mobile traffic off-load** – linked to 4G above, some local authorities believe wireless solutions will ease mobile network congestion and make locations more attractive to 4G provision from mobile network operators. This view, however, is not supported by some wholesale suppliers.
- **Intelligent infrastructure in smart cities** – enabling the Internet of Things and machine-to-machine communications indicating, for example, when lampposts need repairing or bins need emptying – instead of having inefficient schedules for maintenance and reporting.

## Financial return

- **Economic stimulus** – covering local high street shops could help bring business to the high street and increase visitors' 'dwell time'.
- **Revenue generation** – whilst there was general agreement among those we spoke with, that local authorities are becoming less focused on this, all local authorities will want to take a small share of any wholesale to mobile network operators revenues. There is also the potential to monetise data collected through WiFi networks, although it is not yet clear how this would be done. There are also issues around data privacy and local authorities' ability to track and analyse data on citizens.

- **Foundation layer to enable other initiatives** – WiFi gives a city more capacity to deliver and provide new services. Open data will be central to the development of new applications and business models.

Local authorities have no targets for WiFi usage or its impact, although they are able to access data on its general usage and the types of groups using it. Generally WiFi is regarded as a foundation layer to enable other targets.

Interestingly some suppliers to this market are rather sceptical about local authorities' digital inclusion motivations in providing free public WiFi. They ask whether the socio-economically excluded will really spend time around public buildings and parks in order to connect devices to free public WiFi. They say there are bigger issues that lead to digital exclusion – not seeing any benefit in going online or not having the skills to access the internet. However, Virgin Media Business says it does embrace the potential opportunity for digital inclusion by providing a time unlimited free service.

## 4. Suppliers to this market

There are three main suppliers currently winning Tier One wireless city concessions. These are all wholesalers and therefore hold a neutral position, although BT also owns spectrum.

### Arqiva

Arqiva won a number of high profile Camden-led London boroughs concessions announced in June 2013. The company adopts a neutral wholesale model whereby it effectively provides access to the authority's assets, to the wireless industry. It then uses these assets, such as street lampposts, to install mobile network operators' equipment and can provide backhaul. Arqiva also sells wholesale WiFi to mobile operators for mobile traffic off-load.

In May 2013 Arqiva bought itself into the WiFi advertising space acquiring the remaining 50 per cent share in Selective Media following the purchase of the first 50 per cent a year earlier as part of Arqiva's acquisition of Spectrum Interactive.

### BT Wholesale

BT already has a commercial WiFi operation, which is mainly used by BT Broadband customers. This service has been active in 15 cities since 2006. Along with support operations, these networks could be leveraged and opened up for free public WiFi in certain areas. BT also has its own street furniture in the form of payphones, which could be used for installing WiFi equipment. The operator has been running small cell trials with Telefonica O2 through Openreach for the past 10 months. BT is also working with Transport for London (TfL) as TfL looks to leverage its street furniture assets.

It was this WiFi experience and ability to look at real traffic patterns and usage that led to BT Wholesale hanging back from the first SCCP wireless concessions – the operator did not see a strong business case for providing free public WiFi to local authorities and was unsure about the case for small cell deployment. However the provider is now bidding for contracts, perhaps in itself a good indicator of potential value in this market.

## **Virgin Media Business**

Virgin Media Business aims to ensure a leading position in this market, saying it is well placed to do so. The company has outsourced the WiFi element of its wireless concessions to partner Global Reach Technology, which provides the technology and service for Virgin's free WiFi commitments. This is seen as a smart move by several in the sector, given that free public WiFi is a commercially challenging component of the concessions. However Virgin Media Business remains contractually responsible for providing the free WiFi service, at least in those contracts it has won in Birmingham and Leeds/Bradford.

The provider's core focus is on the commercial deployment of small cells and it says it has led the sector with the concept of a 'one-stop shop' for mobile network operators – the site, single permission and wayleave, power supply and backhaul whilst the mobile operator deploys its own equipment. Virgin Media Business pays rental to a local authority for the use of its assets and the local authority then takes a share of the small cell wholesale revenues. This seems to be a strong approach and Point Topic believes that it will become the main model at least for the larger cities.

## **Other suppliers**

There are smaller suppliers of WiFi and other wireless technologies, and our future reports will include their perspective and business models. MLL Telecom, for instance, is one such supplier. In June 2013 it was announced that Tendring District Council in Essex is to sign a concessionary agreement with MLL Telecom to deliver a Wireless Coast project. This will provide a public WiFi service using the Council's assets, mainly CCTV columns, focused on Clacton Town Centre and the seafront, with plans to extend coverage in 2014.

Birmingham City Council received 10 submissions by varying suppliers to its tender process with different propositions. Of these submissions two were selected for further examination – one involved tower blocks to create a 4G network using macro cells which was likely to be a closed, one service provider system, and the successful submission from Virgin Media Business using its wholesale approach.

Telefonica O2 WiFi, which won the Westminster concession early on, appears to have dropped out of wireless concession bidding. Point Topic was unable to speak to O2 WiFi for this report, but it has been suggested that costs associated with the Westminster project (rumoured to be at least £4 million) are part of the reason. Also O2 WiFi may be less attractive to local authorities because it is a mobile network operator rather than a neutral provider. However, as Westminster City Council says, as noted in news reports, an open competition was run in the borough to identify the commercial partner that could make best use of Council street assets as part of their own development plans. It is also likely that O2 was attracted by potential small cell deployment in Westminster, London being a particular pressure point in terms of expected mobile capacity requirements.

There are also interesting developments taking place in Ofcom's 'white space' trial with around 20 public and private organisations testing a range of applications over the next six months. This is part of the regulator's plan on how to manage spectrum, including the possible rearrangement of digital terrestrial television bands to release more mobile broadband spectrum. Among those taking part are Microsoft, which will use white space technology to assess how it can provide access to free Wi-

Fi in Glasgow; and BT and Neul, which are working with the Department for Transport to test using white spaces to transmit data on traffic congestion.

## 5. Supplier motivations and concerns

For the big suppliers at least, the key motivation for involvement in the concessions is small cell deployment. Free WiFi is commercially challenging for these players, and so frequently the local authority ambition to provide free public WiFi needs to be a benefit negotiated into a wider wireless concession including small cell deployment. Even so, this market is still speculative – no-one knows when small cell deployment will really take off and whether the networks can be monetised.

Suppliers have warned that concession pricing must not be too high because costs have to be recouped in the long run. There are several parties in the value chain for small cells and adding together all their various ambitions can bring a high cost. Costs for small cells have to be contained within the total cost of ownership – said to be around 10 per cent of that of macro cell sites – that mobile operators are willing to pay. It has been suggested that the concession pricing agreed by O2 WiFi and Arqiva with regard to London boroughs have set false expectations of potential returns. Suppliers believe that if local authorities try to charge too much the industry will look elsewhere – that there will always be an alternative to local authority street furniture – Transport for London's own assets being one such case in London. Another example cited is that of negotiations between shopping centres and mobile network operators some years ago – concession prices were set too high and the industry walked away, leading to poor indoor mobile coverage in shopping centres.

Concerns have also been raised about the capacity of suppliers to handle the amount of tenders being issued. The number of projects in the pipeline for suppliers could be a problem with limited resources available, and smaller authorities have been experiencing a push back because of this lack of resource.

### Role of advertising in WiFi

The WiFi business case does have challenges in general, let alone free public WiFi. Networks are too fragmented and are not national in scale, making it hard to attract big brands into using them as advertising platforms. This may change in future as technology and platforms develop that can analyse and leverage usage patterns, including data on footfall movements within a retail area that could then be used to develop local commercial offers.

However, given that the public no longer expects to pay for WiFi, the business case remains weak. One option could be for the mobile network operators to include WiFi GB within their phone minutes – in effect reselling capacity provided by wholesalers that would then organise coverage.

There are a number of specialists aiming to build and develop the market, including Global Reach Technology and Selective Media. Global Reach Technology focuses on monetising WiFi using advertising. However there may be restrictions placed on advertising through a service operated by a local authority. Currently a significant proportion of mobile platform advertising reportedly comes from pay day loan and online gaming companies, which may not be allowed onto local authority-branded WiFi platforms.

Global Reach Technology can also wholesale WiFi services, although not at a superior level to the free WiFi offer in its partnership agreements with Virgin Media Business on city wireless concessions. As WiFi networks scale, this will benefit Global Reach Technology in terms of wholesaling WiFi and bringing in national advertisers. It is already building scale through its commercial WiFi networks.

Arqiva has entered the WiFi advertising sector having bought Selective Media in May 2013. Selective Media offers advertising campaigns across Arqiva's WiFi networks, offering online display, pre-roll and video on-demand using targeting methods based on location, gender and time.

### **Roll of WiFi as off-load for mobile**

Manufacturers such as Ericsson regard mobile off-load as vital to the role of 4G in order to support widespread use of streaming video. Point Topic believes that mobile network operators consider mobile hand-off as vital to the role of 4G as a full alternative to fixed broadband. However not all the suppliers Point Topic spoke with for this report were convinced that mobile network operators, when given a choice, will use WiFi for this purpose in the context of their small cell deployment plans.

The argument is that mobile operators do not like using WiFi networks for mobile traffic off-load because it is more expensive and they lose control of the customer experience – for example not being able to replicate their own network's policies on adult content. This may be different for indoor systems such as the London Underground network where there is less choice of networks for off-loading traffic, but not for outdoor WiFi networks.

Arqiva does sell wholesale WiFi to mobile network operators for off-load, however and some local authorities cite off-load as important. This topic will be explored further in future reports from Point Topic.

## **6. Typical concession terms and business models**

Wireless concession contracts are typically long-term – between seven and 10 years. A local authority allows its assets or street furniture, such as lampposts and CCTV columns, to be used by a supplier for the deployment of small cells for 3G and 4G network capacity boosting and dips in coverage. The local authority then gains a rental over a number of years in return.

The supplier could be a mobile network operator deploying for itself, or (increasingly likely given that local authorities probably need to adopt a neutral position with regard to promoting competition) a wholesale supplier to mobile operators which enable these operators to deploy their own small cell equipment at particular sites, and also provides the mobile operator with backhaul services. The supplier effectively becomes a 'one-stop shop' or landlord for these assets, with a set protocol for deployment covering wayleaves and other legal aspects. Local authorities then receive a small revenue share from the wholesale operation of that supplier – perhaps in the region of a fraction of a pence.

As part of the contract the local authority gets free, or a certain amount of free WiFi provision from the supplier or its contracted partner. Virgin Media Business is providing free unlimited WiFi to a

number of small locations at high performance as part of its contracts so far. Arqiva takes a different approach providing a number of minutes of free WiFi, after which payment is required.

Extensions to the coverage area in future seem to be linked to the success of the wholesale operation over the coming years. A local authority gains no revenue directly from this free WiFi service and it is up to the supplier or their partner to monetise the service, perhaps via some paid for element e.g. pay after 30 minutes free, wholesaling WiFi to other players, or via advertising and sponsorship deals.

The rental and revenue amounts and percentages involved will vary depending on the attractiveness of a location – London for instance is different to other locations because of the density of its population – as stated earlier possibly explaining relatively high payments for wireless concessions there. Point Topic is keen to learn of other business models being pursued – particularly by smaller players in individual locations. Indeed, given the focus on small cell deployment initially at least in larger cities, smaller locations may well need to find alternative business cases.

### **Timing considerations**

The local authorities and suppliers that are coming together for these wireless concessions have very different agendas. Local authorities are keen to obtain free public WiFi; suppliers, or at least the three big players reviewed for this report, regard this as a small cell deployment opportunity for their mobile wholesale provision businesses.

Local authorities want free WiFi now but the small cell market is unlikely to begin to scale before 2015. 4G services need to be up and running for some time in order for operators to see where capacity boosting is required and where there is a requirement for mobile traffic off-load – according to those we spoke with this is not likely to be determined in less than 12-18 months. There is also uncertainty about the standards ratification of some small cell products and some manufacturers do not yet have ready-for-market cells.

Nevertheless there are those who believe the foundations for small cell deployment have been laid, and that the ball is now in the mobile network operators' court, with 2014 focused on trials.

These timing issues in turn affect wireless concession contract lengths – concessionaries must be able to offer mobile network operators long-term contracts (around seven years), and if they are already two years into a seven-year concession the ability to do this is reduced.

## **7. Is there room for smaller cities and towns?**

In general smaller cities and towns are not as attractive to suppliers because the core of the business case is currently about small cell deployment rather than free public WiFi. Suppliers are focusing on those local authorities that show high enough footfall or high density areas – estimated at between 30 and 60 of all authorities. Some would argue this is why the London borough concessions referred to above cost what they did. Bringing wireless solutions to the remaining local authorities is therefore not a priority for at least the big three wholesale suppliers at present.

The model for small cell deployment is a challenge and may not work or be attractive in smaller cities and towns. Much depends on the requirements of 3G and 4G networks, and therefore growth and costs in this sector.

Arqiva, with its strong relationships with the mobile operators, has a model leveraging operator data to identify capacity hot spots and hence the ability to predict small cell concession opportunities.

BT Wholesale has a model predicting where small cells will be required, i.e. where 3G and 4G capacity will need boosting and where there will be dips in coverage. This it says helps it to evaluate the best areas to gain wireless concessions.

Virgin Media Business is currently focused only on the UK's biggest cities and centres where there is highest mobile demand. It is unlikely to extend into smaller cities until the commercial model for small cell deployment has been proven and it can identify where small cells are most useful for mobile operators.

Each city or town may present its own business model for free public WiFi, which could then persuade a supplier to invest in smaller areas if the business case is viable. However as many tenders for concessions are running at the same time, there is a limit on the available resource in turn meaning that suppliers will focus on the most economically viable areas.

## **8. Conclusions – lessons learnt from the concessions so far**

The specification of concession contracts cannot be too set in stone. Leeds and Bradford found that a negotiated process works much better, as both supplier and local authority will change what they offer. Newcastle City Council recently pulled its wireless concession contract because the specification was too rigid – it is now reissuing a tender using a negotiated approach.

Local authorities must be clear about the assets they own – where they are located, what can be done with them and the legal access they have to those assets. In Colchester, for example, the wayleaves for 18 out of 23 powered CCTV street furniture sites identified for wireless deployment did not belong to the Council, and so legal costs were incurred in order to renegotiate access. With hindsight, the local authority would have only suggested assets that were already fully accessible as part of the concession.

The majority of local authorities interviewed did not want services to be tied into one mobile network operator. The general view was that the local authorities need to contract with a neutral party, as otherwise it may look as if competition is compromised.

Experience has shown that suppliers will not need as many assets as a local authority perhaps initially thinks and that a concession will not provide revenue from every lamppost.

In terms of network management, there is a consensus among those we spoke with that it would be a mistake for local authorities to try to manage their own WiFi network, instead of engaging a supplier. Whilst it is important to check proper protocols are being followed, managing the service without a supplier would simply take too much resource. There are others, however, including

manufacturers, that believe local authorities could manage such systems and that this approach may benefit them more over the longer term.

The issue of backhaul also needs to be considered. A constraint on wider deployment of WiFi is the cost of backhaul which needs to be scalable and flexible to accommodate rising demand but obtainable at the lowest possible total cost of ownership. Small or metro cells seem to be the way forward as their coverage area is much greater than access points for WiFi – typically over 300m compared to 120m – so the capital costs are smaller overall as far fewer are needed. However, small cells have a much greater requirement for backhaul than conventional access points so the backhaul network needs to scale or could become a bottleneck to growth.

Finally a shift in the local authority mindset is required when getting into the legal details of any wireless concession. Local authority lawyers have to think differently when it comes to tenancy arrangements – renting out a lamppost and terms related to landlord/tenant parties are very different to a local authority's traditional rental and tenant businesses. Indeed, one interviewee argues that Britain's outdated property system and the length of time it can take to obtain landlord and tenant (and sub-tenant) permissions for deployment on properties, together with backhaul issues, are part of the explanation for the slow take-off of WiFi which is currently restricted to high footfall areas in dense urban environments where the business case for deployment is stronger.

## 9. Case studies

### Birmingham City Council



#### Establishing a smart city

Birmingham City Council was conscious of emerging 4G technology and 3G upgrades some years ago and wanted to ensure that next-generation mobile infrastructure would be brought into the city. This was a key driver underlying its wireless concession, awarded to Virgin Media Business and announced in July 2013. The concession was not technology-specific; the Council used a competitive dialogue approach and chose an open network model provided by Virgin Media Business.

Agreements have been made in recent years with individual mobile network operators for specific parts of the city and for certain assets. But the Council wanted to give these operators one point of contact and one package of assets. Virgin Media Business will provide that single point of contact and follow set terms and conditions for deployment. The provider has an exclusive concession for all street lights and CCTV columns which it will then wholesale to mobile network operators for small cell deployments across 90,000 lampposts.

The contract with Virgin Media Business relates solely to the use of lamp columns and CCTV infrastructure for the installation of wireless telecommunications equipment. Birmingham, however, has a vast portfolio of assets such as tower blocks and other properties located across the city, which are also potentially available for use. In instances where this type of asset would be more beneficial to an organisation, interested parties are still able to enter into commercial arrangements with the Council.

Virgin is contracted to provide free public WiFi as part of the contract, initially around Birmingham city centre. After that and depending on the success of the agreement, there could be a discussion on expanding the free WiFi footprint. The Council will take a share of small cells deployment wholesale revenue and also site rental, but not of any WiFi revenue.

Virgin has given some indication of the locations where free public WiFi will be available but says that it wants to manage expectations. The first access point to go live will be outside the new library. *BrumFreeWiFi* will be fully open – the registration process involves a person providing their email address, age and gender. They will then be directed to Birmingham City Council's webpage.

The Council also has ambitions to use Urban Broadband Fund monies to deliver wireless and WiFi in other areas of the city to promote digital inclusion. This will be free to access public WiFi in public buildings and/or properties such as libraries (free WiFi is already available in some libraries), leisure centres, and communal areas in sheltered housing schemes for residents. It will not provide WiFi in public spaces such as high streets, and is not part of the Virgin contract; instead it will be procured separately.

#### Key contact

**Richard Williams** [Richard.Williams@birmingham.gov.uk](mailto:Richard.Williams@birmingham.gov.uk)

## Bristol City Council



### A wireless pioneer with WiFi for a decade

In around 2003 Bristol City Council began working with a company called Cityspace which was installing street kiosks around the city to provide citizens with access to web information and emails. Although the i+Point kiosks were the main project, Cityspace suggested a wireless mesh overlay that could also make use of the kiosks' fibre connections and provide free wireless open access points across the city centre. This was called StreetNet. While the kiosks are now outdated, the wireless connections points have turned out to hold the most long-term value.

The Council developed a stronger interest in the WiFi service when it eventually began to get used – for example by university students on the green space in front of city hall. It then went on to develop a number of interesting wireless projects.

The fibre supporting both the kiosks and WiFi points belongs to Bristol City Council and is branded *B-Open*. Because of this ownership it was relatively easy to open up wireless hotspots at a low cost (£100s instead of £1,000s), and over the past few years the Council has built up its own hotspots to help with digital inclusion, reaching 80 hotspots in public buildings such as libraries and community centres. The Council added a further 600 access points when it made an arrangement to combine its *B-Open* network with Bristol University's JANET Eduroam network. Access is unlimited and inappropriate content is filtered. The Council also provides WiFi in its buildings for staff and visitors, which it says has been a huge step forward.

Looking to the future, the Council has two key schemes involving wireless technologies:

Firstly it is planning a concession for street furniture assets enabling telecoms providers to offer both 3G and 4G connectivity and cell points, and also a degree of WiFi coverage across the city. The priority for WiFi will be covering the 57 local high streets in Bristol as part of an economic strategy to support these neighbourhoods. Extensions could then be negotiated with the concession supplier or funded by revenues generated.

The second element is more innovative. The Council has been working with Bristol University on plans for an ultra-high speed fibre-based fixed network serving as an R&D test-bed. The network is non-commercial in that it has extremely high bandwidths with users making very large demands on the network.

One of the imports to this is a sensor mesh network – part of the concession is to include a sensor network which will use one of the WiFi channels. Such a network can collect a range of data including that on heat, air quality, noise, and also monitor movements such as traffic flow. This is regarded by the Council as part of the same wireless concession offer – it does not want to load the street furniture with different WiFi points.

Whilst the precise timing is unknown, the WiFi element of the concession should provide a number of different functions: a degree of open access; the ability for the telecoms provider to also offer paid for WiFi and off-loading of data. The Council expects the concession to be small cell deployment focused and has been running small cell trials with Virgin Media.

The Council is now working with the University to agree the governance and management of sensor data and the network. It would ideally like a joint venture between the Council, University and other partners. However, the Council needs to find a revenue stream for the project, which could be difficult. The sensor mesh network idea came out of work Bristol did for the Future Cities Demonstrator competition run by the UK's Technology Strategy Board.

#### Key contact

**Stephen Hilton** [Stephen.Hilton@bristol.gov.uk](mailto:Stephen.Hilton@bristol.gov.uk)

## Colchester Borough Council



### Early plans to be “first wireless town”

Colchester was at the forefront of wireless town ambitions and in July 2011 announced a deal with The Cloud for the provision of public WiFi in the Town Centre. However, following BSkyB’s acquisition of the company, which brought in other priorities for The Cloud, the agreement was dissolved. Colchester Borough Council then signed a new agreement with Arqiva in May 2013 for WiFi provision and small cell deployment. Installation is expected to begin in October 2013.

The *@ColchesterWiFi* network will have 23 WiFi access points within Colchester’s City walls. The deal provides for free WiFi lasting 30 minutes per day. In addition there will be three websites that are accessible without charge all the time – the Borough Council site, Visit Colchester – tourism, retail and events, and a site for JobCentre Plus.

The Council places a strong emphasis on employability measures for its residents and co-ordinates a network of over 50 partner organisations – “Colchester Works!” – involved in finding work and training. It also has a strong focus on channel shifting public services which mobile devices increasingly enable. The network is to cover the core retail centre of the town and there are aspirations to expand coverage in future – both within the Town Centre and perhaps through “wifi bubbles” for its major rural settlements. The Council is working with a number of other partners on these plans, with the public free WiFi strategy fitting into a wider next-generation access broadband infrastructure plan.

Part of the Council’s motivation for free public WiFi was to access 4G technology early – in fact EE has already installed 4G in Colchester as one of its first set of macro locations. WiFi is also part of the wider broadband plan to get better broadband connectivity fixed and wired into the town in order to bring broadband prices down.

No Council funding is involved in the provision of free public WiFi and Colchester expects to receive a very small share of Arqiva’s wholesale revenues. The real costs of the project have been in terms of officer time and legal fees to negotiate the real estate sites for deployment.

<b>Key contact</b>	<b>Jim Leask <a href="mailto:Jim.Leask@colchester.gov.uk">Jim.Leask@colchester.gov.uk</a></b>
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**One of the first SCCP wireless concessions**

A contract with Virgin Media Business was announced in November 2012 and free public WiFi has been completely up and running for nine months in the cities of Leeds and Bradford.

The service had 20,000 registered users in September 2013 with 2,500 new users joining each month during the summer. The speed is a comfortable 2-4Mbps, and the network covers the main shopping areas in Bradford and Leeds, as well as the open area around Leeds city hall. The project was initially promoted in Christmas 2012 and again in March 2013, and each lamppost has a plaque reading *Leeds City Free WiFi*.

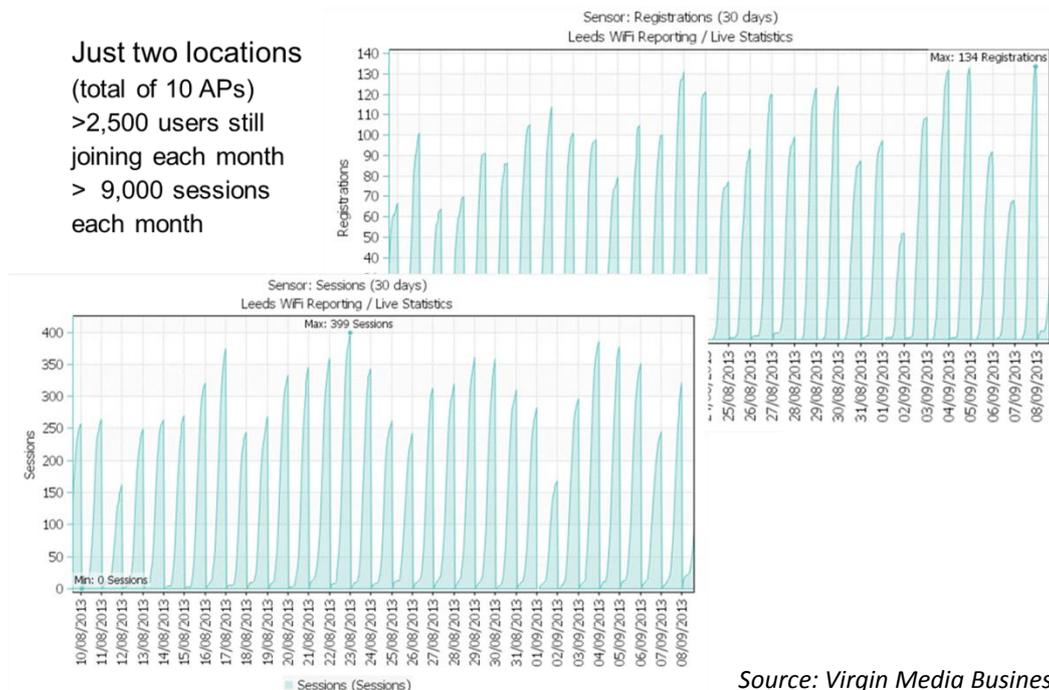
Bradford and Leeds Councils told Virgin where they would ideally like free WiFi coverage – expansion will be dependent on revenues from Virgin’s wholesale small cell deployment business. But any extension to the service will be about plugging gaps given that free commercial WiFi is available in a number of places. The Councils focused on areas where people sit and ‘dwell’, rather than simply covering streets which may be populated by cars but not so much people. The Councils are also looking to extend WiFi coverage to all libraries under a separate existing network services contract.

Virgin’s partner Global Reach Technology manages the free public WiFi service which includes a landing page containing some advertising to cover costs, although adverts are not heavily promoted. The Council has no daily involvement in running the WiFi network.

Being a pioneer in terms of SCCP wireless concessions, the Councils were surprised that responses to the tender focused on small cell deployment rather than WiFi. However the Councils believe the approach will work and look forward to the eventual deployment of small cell technology.

**Stats from the Free WiFi Service**

Just two locations  
(total of 10 APs)  
>2,500 users still  
joining each month  
> 9,000 sessions  
each month



Source: Virgin Media Business

<b>Key contact</b>	<b>Ian Jones <a href="mailto:ian.jones@leeds.gov.uk">ian.jones@leeds.gov.uk</a></b>
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### Taking a multiple approach to wireless

There are three key elements to Newcastle City Council's wireless strategy:

#### 1. WiFi on the Metro

The Council has been working with local metro rail provider Nexus to deploy WiFi into all its carriages. The hope is that this service will be free for anyone to use. Nexus is currently writing its wireless concession, and the Council is considering investing in equipment which could then be let to a service provider. This will be a contained wireless network, but with a large number of people passing through the service area.

#### 2. Free WiFi in all public and community buildings

Newcastle plans to deploy free WiFi in all public buildings and is working with community groups on how to extend this to their properties including churches and other centres. This is particularly relevant given community groups have taken over some libraries and sports facilities from the public sector.

The Council says it hopes to finalise the usage terms for these community groups in October 2013, after which it intends to start approaching suppliers. The Council is hoping for the concession to become active in March 2014. Whilst it wants WiFi to remain the focus, it is also open to small cell deployment schemes. Council funds will be used only for enabling works such as fitting power sockets.

#### 3. Outdoor wireless concession

The Council has been working in partnership with Gateshead Council to offer an outdoor wireless concession on street furniture including signage and CCTV columns in high footfall areas. It hopes to receive free public WiFi services as part of this contract, which is also expected to provide for small cell deployment. However, the concession is technology neutral and follows DCMS guidance as part of the "Super-Connected Cities Programme".

The procurement for the outdoor wireless concession was pulled on 19 September 2013 and is currently being revised to be reissued in October. This is largely due to changes in the market, an example of which is the revised prediction from suppliers which now believe that small cell deployment will not scale before 2015 rather than 2014. Newcastle will now use a negotiated process, likely to run until February 2014, to allow the Councils and suppliers to discuss the specification to ensure it meets the Councils' aspirations while also meeting their own commercial needs.

Newcastle City Council plans to ask for free WiFi as part of the deal, which it is hoping to get on an unlimited basis; however it is aware there is a need to get the right elements in the contract for all parties. The Council also says it would like to extend any free public WiFi coverage in future and will ask suppliers where their initial preferences for this would be.

No Council funding is currently being provided. Newcastle plans to charge rental for the street furniture and take a share of the revenues from any wholesale operation to mobile network operators. However, key for the local authority is the WiFi coverage and quality of service rather than simply revenue generation.

Key contact

Steve Smith [steve.smith@newcastle.gov.uk](mailto:steve.smith@newcastle.gov.uk)