

Implementing Wi-Fi that stands out in a crowd

Wi-Fi is embedded in the fabric of our society, integral to how we engage at home, work and play.

What's more consumer expectations of the ease and quality of service provided are equally as high whether they're connecting from the family residence, company offices or the terraces of a sports team's stadium.

Of course, providing reliable, secure, high-speed Wi-Fi connectivity to a large and often transitory audience is a whole different ball game to plugging in a home router.

It requires considerable thought, planning and expertise.

There are many things that you'll need consider, not least the topography of the area you plan to serve and the type of users - and type of use - your network will need accommodate.

From there you can start to determine the technologies which will best meet your needs and how to optimise their deployment.

Who, what, when, where, why?

The five Ws provide a good starting point on your path to determining how your Wi-Fi should be configured.

Who will be using your network?

Will it be one block of users, such as a company's entire staff, or a blend that might include employee sub-groups and/or visiting guests?

This is important because you may want to provide segregated networks with different access and use privileges.

What will they use your network for?

This requires some thought because how your network is to be used will determine, for example, your bandwidth requirements.

If streaming is likely to be a key user demand, then you'll need bear in mind it's bandwidth hungry and this will impact your choice of technology and service provision.

Will they be using mobile communication and collaboration applications like WhatsApp or Microsoft Teams? That matters because if they're walking around having a chat, then you'll need to deploy distributed intelligence Wi-Fi technology to ensure that the address and connection are maintained as they wander across your site.

By knowing how your network will be used, you can also better protect the mission-critical applications upon which your organisation relies. With the right technology, you can prioritise business over casual use through rules-based bandwidth management.



When will they use it?

You know when there's a big plotline breaking in one of the soaps? The nation is gripped. Then, there's an ad break. The nation is making a brew and there's a huge spike in electricity demand, a spike which National Grid engineers anticipate and manage to prevent power cuts.

You need think about your Wi-Fi network in similar terms. If there will be peaks and troughs in its use, you'll need ensure it has the capacity and resilience to manage.

Real-time load balancing will route traffic across multiple access points depending upon the demand for connections, thereby maintaining network performance and integrity.

Remember too that once someone enters your WLAN coverage area, their smartphone will automatically connect to it. Even if they're not using the network, their device will eat bandwidth, with routine background applications also gobbling capacity.

Where will they want network access?

The physical configuration of your network will, of course, be informed by how many users want to access it in any one place and time.

It may be that over your network area, usage will be fairly evenly distributed. Even so, you may find there are areas where people naturally congregate – a canteen, break-out zone – and demand for connections is higher. You can address this by increasing the density of access points.

Whether your network is to straddle indoor and outdoor locations is another factor which will inform your network specification. There are access points specifically designed to withstand the environmental challenges presented by exterior siting.

Why do they want network access?

Will your network be for business or casual use, or both?

Will you need to categorise and segregate your user base depending upon how they will be using your network?

These are important questions. Business users may not only need access to work servers but also peripheral devices such as printers. Resilience and performance will be critical.

Casual and guest use can impose different demands. In a closed user group – such as employees – the volume, type and time of use is fairly predictable.

Guest use can prove more difficult to pin down or, even when foreseeable see demand swing from low to phenomenal as the audience comes and goes.

Applying the theory

In order to explain the technologies you might need deploy to satisfy varied needs across a diverse topography, let's consider a notional sports stadium.

This is the kind of venue that can present multiple challenges. This could include not just peak demand – on matchdays – but peak demand within that as the half-time whistle blows and fans hit their mobiles. Excellent load-balancing capabilities, such as that offered by Alcatel Lucent Enterprise's OmniAccess Stellar WLAN will be of paramount importance.

Rather than feature a central control, this flexible, resilient and reliable kit instead incorporates an innovative, intelligent distributed control architecture. This delivers high availability, scalability and low latency, regardless of peaks and troughs in network traffic.

As the players trot off for their orange slices and manager's pep talk, at the same time fans may head to the concourse for a pie and pint, for which they'll likely expect to pay cashlessly. That means the stadium vendors will need access to a secure, reliable and segregated network over which to handle payments.

Fans may also have seats on an open terrace or hospitality box or restaurant. These will require different APs, with those facing the kind of British weather conditions that inexplicably encourage Newcastle fans to whip off their shirts, requiring protection from the elements.

A good choice here might be ruggedized outdoor-capable Access Points that can handle extreme conditions. One option would be Alcatel-Lucent's OmniAccess Stellar Outdoor AP1360, an access point which is designed to withstand harsh environments, including the kind of persistent rain with which British sports fans are all too familiar, as well as both high and low temperatures.

Then there's the requirements of staff teams working in and around the stadium. Stewards, cleaning, hospitality, box office and admin staff may require segregated networks and, if they're mobile, a guarantee that they'll have uninterrupted access to the apps upon which their work relies.

This is where kit incorporating distributed intelligence Wi-Fi technology comes in, once again pointing us in the direction of Alcatel Lucent Enterprise's OmniAccess Stellar WLAN. This particular bit of kit also provides smart analytics offering Wi-Fi Quality of Experience (QoE), customer behaviour and location data to enable superior user experiences.

Designing, specifying & implementing your Wi-Fi solution

As I said at the top, deploying Wi-Fi to serve a large user base across a sizeable area is a different ball game.

Because the design, specification and implementation of major Wi-Fi network can be highly complex, it can present huge challenges to an Estates or IT manager.

It's a specialist discipline which requires specialist expertise – and experience.

That's why here at Avoira we have a dedicated Network Solutions team that is versed not only in the latest technologies and applications, but their deployment.

The team offers a holistic consultancy service which begins with an outline discussion of needs followed by a comprehensive site survey.

This will involve examining the physical topography of the site to identify any particular structural and environmental challenges. In addition, our engineers will discuss the number and type of user and their usage needs and patterns to get the most comprehensive picture of a prospective clients needs.

Armed with that information, they'll then design, specify and cost a full network infrastructure. Presenting it they'll explain exactly why particular pieces of equipment have been specified across the network and answer any questions the client might have.

If given the green light, they'll then work with the client to map out an installation plan. This will ensure everyone knows what's to happen and when, minimising any potential disruption.



Once the network has been deployed, they'll then test it and be on hand for the go-live to provide further client confidence.

Once everything's up and running the team also offers a choice of highly responsive maintenance and support packages. These are designed to optimise network performance whilst providing a best-fit solution in terms of technical support services and response times.

In short, from initial meeting, through design, implementation, deployment and operation, everything about Avoira's service is design to put you in the comfiest of comfort zones.

Need expert Wi-Fi advice?

Our expert team is on hand to offer a free consultation - without obligation - at your convenience.

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