



Network Solutions Plus

What's keeping your WLAN awake at night?

- Currently 80% of newly installed wireless networks will be obsolete within the next year because of a lack of proper planning.
- Many users will be carrying more than one device – average 2-3.
- Companies deploying tablets will need 300% more WiFi capacity to be effective.

Source: Gartner, Top Wireless Issues That May Derail Your Mobile Strategy

We recently attended a forum with the IT managers of several schools and colleges in the South of England. Although some issues are similar to all commercial organisations many IT professionals consider Education to be one of the most challenging sectors; a highly mobile population, leading edge and content-rich applications, students with an innate curiosity; very knowledgeable, demanding and critical users; and a high density of wireless devices from smart-phones, tablets and traditional laptops supporting a variety of operating systems and applications.

Some of the issues raised by those IT managers were:-

- How to support multi-media applications on their existing networks,
- How to manage BYOD
- How to deploy wireless successfully but also securely,
- The lack of good tools to manage wireless networks that change more frequently than wired infrastructures,
- How to maximise the use of the existing network,
- How to keep Year 10 from bringing the network down or gaining access to staff resources,
- Lack of understanding from head-teachers or bursars that the success or otherwise of new applications or technologies will be dictated by the underlying network.
- Lack of appreciation from school managers of the security issues surrounding IT, such as 'acceptable use' policies and a lack of understanding of legal responsibilities.
- How to add redundancy & resilience to the network.

Wireless will be critical to way that users (not just in schools & colleges) access resources in the future. In the next few years wireless is expected to become the dominant technology for connecting devices to the network, relegating cables to the role of connecting servers and network infrastructure devices. Many under 25 yr.-olds may never have experienced using a cable to connect, may not know how to and more importantly do not see why they would need to learn as their preferred devices only support wireless.

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Aside from the skilled planning & deployment of wireless networks to maximise coverage and throughput, the new technologies introduced in the IEEE 802.11n wireless standard bring new challenges. Increasing throughput by bonding multiple channels together makes the planning of non-overlapping channels more critical than with older wireless standards. The deployment of 'n' standard wireless networks has more of an impact on the wired infrastructure as each access point is able to dump up to 200Mbit of capacity onto the backbone. Many organisations may see that they have over-estimated the amount of wired ports that they will require in the future, if each switched 1Gbit/s port is supporting via a wireless access point, up to 20 wireless users.

Wireless networks have matured from a niche area to carrying main-stream applications that require resilience and redundancy, imposing more strain on the backbone wired network.

The IEEE 802.11ac standard that was ratified at the beginning of this year will eventually provide up to 1.3Gb/s of capacity from each access point. This new standard is not expected to become main-stream for several years but organisations should take its requirements and impacts into consideration when making their current plans and purchasing decisions. IEEE 802.11ac is an evolution of the current 'n' standard making even more use of channel bonding with support for up to 8 channels to deliver the maximum throughput. Again this will have significant impact for channel planning but also to ensure sufficient capacity in the wired backbone. In order to support 1.3Gb/s access points will need to be connected to two 1Gbit/s switch ports, potentially doubling the number of switch ports that are required to support 'n' wireless networks.

Why use the services of Network Solutions Plus?

- We specialise in optimising the existing network setup, wringing extra value from the existing investment, but will also advise when future requirements out-strip current hardware capabilities.
- We have been working extensively with education establishments over the past 10 years.
- We do not sell hardware – therefore are able to offer impartial advice and work alongside existing hardware partners; IT departments and service providers.
- We are able to manage the whole project process if required from initial discussions, suggestions of improvements, implementation, training, and documentation. This flexibility makes us attractive in times when an organisations budget or staffing resources may be shrinking.

For further information about any of these services or other IT projects please contact Network Solutions Plus.

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