

Global Consultancy Firm

Powering Enterprise Wifi: Transforming Performance and Throughput

A WhiteSpider Case Study





“ The difference in the WiFi from before WhiteSpider undertook their work and after was like night and day. Since implementing their recommendations, we have had no further complaints about the WiFi across the building. Their work has made a real difference to the way we connect. ”

**UK IT Infrastructure
Manager**

Situation

In a modern office environment, users require seamless connectivity across the building. However, when staff from a global consultancy firm moved into their new London office, it quickly became clear the WiFi infrastructure was underperforming.

Employees and guests were experiencing difficulties connecting to the WiFi and there were many 'black spots'. Also, the throughput speed of the WiFi was very poor, especially when compared to the wired infrastructure. This was having an adverse impact on the productivity of office staff and visiting contractors. The poor WiFi infrastructure was also detrimental to employee satisfaction – staff were complaining that they were unable to use the WiFi infrastructure reliably.

WhiteSpider – having been recommended by a US technology partner – was approached by the consultancy firm to assess the current infrastructure and improve the WiFi. WhiteSpider's experts,

having worked with enterprise wireless networks for over 20 years, had the experience to recommend and implement the necessary changes. The company's initial assessment ascertained that:

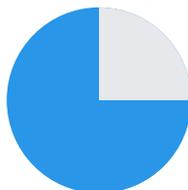
- The original, predictive WiFi survey had been completed on an empty building, with some partition walls not built. Once the refurbishment was complete, the furniture, walls, equipment and people significantly changed the building's interior characteristics.
- Many of the existing Access Points (AP) had been mounted close to exposed metal beams. This was causing problems with signal reflection and interference.
- The WiFi infrastructure had been designed and configured to be used for light web and email browsing. It transpired, however, that the WiFi was being used to run heavy, production workloads that is was not optimised to support.

Solution

WhiteSpider approached this project using its ea4 framework, a proven methodology that standardises the delivery of IT services. This 4-stage approach can

be flexibly adapted to fit projects of differing scopes and scales. During this engagement, the emphasis was on the 'Audit' and 'Alignment' parts of the framework. Audit

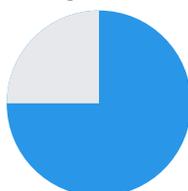
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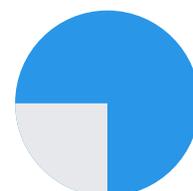
Assessment



Alignment



Architecture



“ WhiteSpider were both highly professional and structured in their approach. This helped us be very clear about how the work would progress. When actually undertaking the work, it was immediately apparent that their expertise was of the highest level and we were confident they would deliver. ”

UK IT Infrastructure
Manager



Audit: Once the consulting firm's business objectives were understood, WhiteSpider started by building a detailed knowledge of the environment and the capabilities of the existing wired and wireless infrastructure. This assessment was undertaken in three stages:

- An analysis of the physical environment was undertaken, identifying construction materials, office layout, location and the mounting of Aps. Any objects that could have a significant impact on performance were noted.
- A Radio Frequency (RF) analysis of the building was carried out to create a comprehensive picture of the wireless coverage across each floor. This analysis included Dynamic Channel Allocation (DCA), Transmit Power Control (TPC) and Coverage Hole Detection, which all provide mechanisms for managing the performance and power delivered to wireless channels. The survey also identified the cell overlaps to understand potential redundancy and over-provisioning.
- A full spectrum analysis was recorded at various times of the day which delivered a picture of the RF environment. This revealed numerous different signals from mobile phones, microwave ovens and WiFi

signals from nearby buildings. These were causing interference and needed to be accounted for in the updated WLAN design.

Alignment: With a detailed image of the environment, a plan was created that accounted for both the existing AP locations and their ideal locations based on the RF analysis. The plan recommended alterations including:

Changing individual AP settings and locations.

Moving AP locations (considering the challenge of delivering power and connectivity), changing power settings (reducing or increasing as appropriate), altering AP frequencies between 2.4GHz and 5GHz and switching AP broadcast channels.

Changing Wireless LAN Controller (WLC) settings.

Alterations to the Radio Policy settings to force devices, where possible, to use the less cluttered 5GHz band. Also new settings for WiFi Multimedia and time-outs were proposed.

Aligning the WLAN for 802.11ac.

The business needed their new WLAN to be future-proof. This required it to be ready for 802.11ac, which has significantly different RF and configuration setup to previous WiFi iterations.

Outcome

WhiteSpider, with their deep knowledge of WLAN technologies, worked alongside the company's IT team to assess the existing design and implement changes that transformed user experience and enabled the use of high-bandwidth applications. WhiteSpider undertook a detailed assessment of the WLAN environment and, after implementing the recommended changes, users were able to reliably access the WiFi for 'production' capabilities.

The improved WiFi infrastructure helped the consultancy business ensure:

- More reliable WiFi infrastructure – the WiFi coverage was far more consistent and the throughput speeds increased
- Improved productivity
- Improved network performance
- Improved employee satisfaction

About WhiteSpider:

Established in 2012, WhiteSpider specialises in providing consultancy, strategic advice, and practical support in enterprise service architectures. The company helps organisations to standardise their IT and communications infrastructures by using a unique new service framework - ea⁴ - developed specifically with the needs of global enterprises in mind. Head-quartered in the UK, WhiteSpider works with global companies across 12 industry sectors, including Financial Services, Pharmaceuticals, Healthcare, Construction and Motor Sports.

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