

CASE STUDY

ARUBA UNDERPINS NETWORK BACKBONE AT WORLD'S MOST CONNECTED BUILDING

Deloitte.

"We call it a computer with a roof. This building knows more about how we work than any of us. Of its size, we think it's the smartest building in Europe."

Theo Slaats, CIO of Deloitte in the Netherlands, is nothing if not proud of The Edge, Deloitte's Amsterdam office. The 15-floor building, opened in late 2014, is home to 3,300 Deloitte staff and has had a transformational impact on the business.

"From a cost and sustainability perspective, it's been huge," reveals Slaats. "But none of this would matter unless it created a positive impact on workplace productivity. The technology we've been able to deploy throughout the building has changed the way we work."

RETHINKING THE ROLE OF THE OFFICE

The origins of The Edge go back at least 15 years. Traditionally, Deloitte had opened small offices near its biggest clients, but it recognised the working world was changing: employees would be more mobile, teams would need to be more ad hoc.

"We knew the office of the future would be a place where people met, where you would interact and engage with clients and new colleagues," explains Slaats. "Also, our offices should be more visible, and create an impact."



Closing smaller satellite offices would make the financials stack up; investing in sustainable energy and water and waste management solutions would deliver against Deloitte's environmental agenda. "The challenge was getting the technology in place to create a productive workplace, and smart office," says Slaats. "We didn't have a crystal ball. We needed a network that would allow us to add new applications and hardware as they became available."

REQUIREMENTS

- Enable intelligent building management to deliver savings on energy, water, waste and more
- Support workplace productivity applications, allowing 3,300 users working from 1,500 hot desks and efficient scheduling of meeting rooms
- Establish a technology roadmap to support development of new applications, including location-based services
- Allow the business to test and develop new ideas, and act as showcase for consultancy skills

SOLUTION

- 500 Aruba HD Wi-Fi Access Points
- 2 Aruba Mobility Controllers – redundant mode
- ClearPass Policy Manager for Guest and Staff Access Control
- AirWave Network Management
- Aruba Analytics & Location Engine (ALE)

OUTCOMES

- Underpins connectivity for more than 30,000 sensors and 3,000 users, creating thousands of data points and creating a platform for intelligent building management
- Simplifies the management and maintenance of wireless network, making it easy to onboard new users and devices, and segment access
- Creates a single data lake from hundreds of siloed data points, providing clarity of building usage and trends

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THEO SLAATS
CIO, DELOITTE NETHERLANDS

Mature network management, with innovation roadmap

Deloitte had an existing network solutions supplier but, while it examined the incumbent's technology roadmap, it was keen on an open tender. "We wanted to see an investment in R&D, the ability to integrate with other technologies, particularly Microsoft®, and a mature network management platform," says Jeroen Hassing, Networking Architect, Deloitte.

A period of testing demonstrated Aruba to be the clear choice. The Aruba solution comprises 500+ Aruba 330 Series access points, with an integrated BLE Beacon, along with AirWave Network Management and ClearPass Policy Manager. "We also liked Aruba's work on location-based services, and earmarked ALE, the Analytics and Location Engine, for future use."

The most connected office

On opening, The Edge was judged to be the most sustainable building in the world. Three years on, Slaats insists it remains the most connected.

Every Deloitte desk at The Edge is wireless. More, employees are connected as soon as they enter the building and can then connect and work from anywhere.

The building is home to 30,000 sensors, monitoring everything from parking bays to room occupancy, lighting to the food consumed in the restaurant. While Deloitte acknowledges privacy is paramount, and location-based functions are opt-in, the Edge knows how many people are in the building, what time they arrived, and who they sat next to.

"The building knows more than we do," says Slaats. "There is more data to unlock."



Already the building is delivering efficiencies on energy, water and maintenance costs (it uses 70% less energy than a standard office building). Smart lighting detects when rooms are empty, smart robots spend more time cleaning busy hallways, more robots conduct security patrols, a smart gym tracks a user's fitness session and smart towel dispensers understand when a bathroom has been busy and alerts cleaning teams. Building services should be directed by demand, not a set calendar, is the thinking.

"But we mustn't focus too much on these 'gadgets'," says Slaats. "We want to use technology to help us in our work."

DEMONSTRATING THE ART OF THE POSSIBLE

Alberto Ogura leads the Edge 2.0 project. His challenge is to make sense of the data generated by the building, and to prioritise the right kind of innovation. "We started with data in siloes; the next step has been to bring all this data together in a new data lake."

Ogura says The Edge is already hitting its launch objectives: "We had three aims: to use The Edge as a lab to test new ideas; to show clients that we 'do' rather than talk; and to inspire. The Edge is all about the art of the possible."

Indeed, two and half years after opening its doors The Edge continues to run guided tours for visitors.

"The Edge allows us to demonstrate how concepts of Internet of Things become reality," Ogura explains. "We have data analysts,

app developers and UI designers all working on live projects. We can show clients the possibilities of new technology, of IoT, of smart buildings, connected devices and a connected workforce. And we can show them the whole process, from the user interface to the back-end."

Continuous innovation to tweak productivity

Ogura says innovation will be continuous, but points to four upcoming initiatives as examples of where workplace productivity could be tweaked.

Data from the restaurant is being meshed to create a better understanding of queue times, popular items (boiled eggs and avocado are perennial favourites) and pricing. The idea is that it can reduce food waste, cut waiting times and ensure the right food is in stock on the right days.

A revised room booking system will attempt to direct people to the most appropriate rooms employing wayfinding technology built around Aruba BLE Beacons and Wi-Fi positioning to locate the individual's mobile device. A smartphone app will tell users if a room is busy and use augmented reality imaging to direct them to the nearest empty alternative. Smart lighting will alert users when a meeting is coming to an end. Being wireless, the building's facility management team can make the physical changes to rooms, without the need to call in IT.

"We can do more to understand how the building is being used," Ogura says. "Do we need smaller rooms, fewer chairs, shorter meeting times? The building can help us."

Linked to the metrics on room occupancy, maintenance and cleaning schedules can also be optimised. Rooms which have not been used can be left alone, while those used more frequently may be cleaned and inspected more frequently.

Ogura's team is also testing a smart defibrillator prototype using Aruba Asset Tags, with employees able to locate the device through an app. The test results are being shared with Deloitte clients, with the possibility of extending this to fire extinguishers and first aid kits.

In addition, Deloitte is working with a tech partner to create a sensor capable of detecting human silhouettes. If an individual has booked a meeting room, but no one is detected there, they can be messaged to take action to either release the room or other alternatives. Meanwhile, lights and other resources in the room can be switched off.

Ultimately, Ogura says, the aim is to have all these features available through a single application and the role of the network, both wired and wireless, is critical in ensuring data is properly captured, analytics are available, and services are delivered to the end users.

"Developers use the term 'smart buildings' but most buildings are really not that smart," Ogura admits. "We want to change that. With the data we're generating at the Edge we can open up the whole construction and property management chain. This smart building can inform the R&D across the whole industry."

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