Density Solution for Campus Wi-Fi

Satisfying Capacity Demands for Wi-Fi in Crowded Spaces

Is your vision to enable 21st century learning and provide cutting edge technology that attracts the best minds; to provide a network that is ubiquitous, reliable and invisible, no matter what gets thrown at it today, and can scale for years to come?

The Bring Your Own Device, or 'BYOD' phenomenon is bringing a flood of smartphones, tablets and laptops to campus. As the device population, and use of video-hungry applications continue to increase everywhere on campus, demand on the network infrastructure exceeds the planned WLAN capacity in many areas. These Wi-Fi density issues result in, wasted class time, reduced learning from distracted and frustrated students, and complex and expensive site surveys on campus.

Density is not limited to lecture halls, though. With the proliferation of smartphones and tablets, users have access to internet or campus resources from anywhere there is coverage. Consider student centers, gymnasiums and stadiums, crowded dorms, computer labs and libraries, and even graduation.

Density exists throughout your campus today, wherever and whenever students, faculty and guests come together.

Scaling Up Capacity

To help you achieve your goals, Meru Networks deliver a BYOD solution which easily supports a lecture hall full of laptops, iPads and smartphones, with Gigabit-capacity access points that deliver a reliable and fast Wi-Fi experience. Thanks to its unique single channel architecture, Meru's Virtualized WLAN offers an easy-to-deploy, reliable and cost effective solution by intelligently managing each device's connections, pooling and allocating the network's resources, and continuously optimizing network operations.

With network control over RF, channel contention is greatly reduced, which makes single channel deployments feasible. Single channel deployments avoid the cost and complexity of traditional site surveys, making deployments easier and drastically less expansive. Additionally, IT can utilize Meru's unique Channel Layering to scale capacity wherever and whenever needed, and with contiguous connectivity and mobility to adjacent coverage areas.

Solution Benefits

➢ **Predictable Performance**
Wi-Fi spectrum is a shared medium. By managing client transmissions, clients can have close proximity without contention.

➢ **Ease of Deployment**
With Meru you can deploy on a single channel, without capacity loss due to co-channel interference, and easier deployments.

➢ **High Capacity**
With Meru, you can layer Wi-Fi channels - like stacking Ethernet switches - to maximize capacity.

VILLANOVA UNIVERSITY

"We moved to Meru because we needed to scale our network quickly, without expanding our IT team."

— Robert A. Mays
Director, Network and Communications
Villanova University

Meru WLAN Network: Architected for Density

Network in Control

- Wi-Fi spectrum is a shared medium, for which clients contend. Imagine a small airport. It may operate by letting pilots fend for themselves by looking out the cockpit to avoid colliding with other aircraft, or use collision avoidance radar. But scale this to hundreds or thousands of planes? Collisions would be catastrophic!

- To be safe, and to get the greatest performance, one needs to control the airways. Air traffic controllers at airports do this every day. If you think of planes as laptops and access points as run ways, then network control of client transmissions would schedule which laptop is transmitting, and which AP is transmitting to it, at any given time. This is exactly what Meru's Air Traffic Control® does. And because Meru can dramatically reduce contention in the air, you can deploy access points on a single channel.

Single Channel

- There is a big difference between deploying 802.11a/b/g (circle patterns), 802.11n (blast pattern) and Meru's a/b/g/n (blanket coverage). Other products have highly unpredictable coverage that needs constant tuning—especially with 802.11n. It is hard to predict what capacity you gain when adding an access point. One student in the hall might be enjoying 100mbps download speed, while the person next to them is puttering along at 10mbps.

- With Meru, your WLAN deployment is predictable, reliable and linearly scalable. What does that mean? If a radio on a given channel supports 50 clients, then to increase capacity to 100 clients, simply add a radio on another channel - another layer. Want 150? Add a third layer. It's that simple.

Traditional MICROCELL
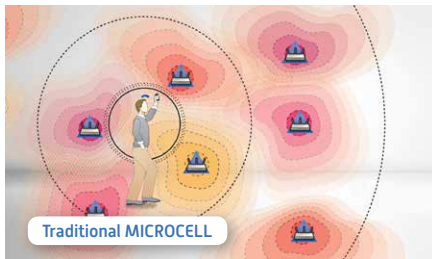
Complex redesign for density
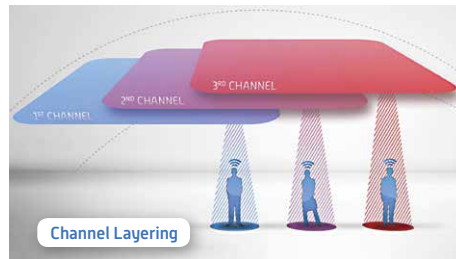
Channel Layering

Simple layer for density

Channel Layering

- Unlike others architectures which add channels to avoid co-channel interference, Meru allows you to add channels to add capacity, to alleviate density issues on campus wherever or whenever needed. This technique can be applied in a blanket across a given area, or just to provide extra capacity in a hot-spot location. And you have the flexibility and ease of moving access points where needed for temporary capacity crunches, such as events/conferences, without complex site surveys.

Meru Very High Density Video 500 Clients

"In our view, density is not an interesting future concern or technical curiosity; rather, it's a key requirement that belongs in network planning (and, in many case, operations) today."

— Craig Mathias
Principal
Farpoint Group

About Meru Networks

Meru Networks (NASDAQ: MERU) is a leading supplier of virtualized wireless LAN solutions that provide enterprises with the performance, reliability, predictability and operational simplicity of a wired network with the advantages of mobility. Meru Networks eliminates the deficiencies of multichannel, client-controlled architectures with its innovative, single-channel, virtualized network architecture that easily handles device density and diversity. Meru wireless LAN solutions are deployed in major vertical industries including Fortune 500 businesses, education, hospitality, healthcare, and retail supply chain. Founded in 2002, Meru is headquartered in Sunnyvale, Calif., with operations in Europe, the Middle East, and Asia Pacific. Visit www.merunetworks.com or call (408) 215-5300 for more information.

For more information about Meru's education solution

Watch the video
www.merunetworks.com/WLAN500-demo

Read the white paper
www.merunetworks.com/density-whitepaper
"Exploring Wireless LAN Dense Deployments: Meru Networks' 500-Client Demonstration"