

Trends in wireless services



- Need for Cellular Coverage and Data Capacity
 - New Urban buildings lack in-building cellular coverage
 - Data capacity requirements have increased dramatically
 - Many suburban and rural areas lack competitive high capacity broadband providers
- Residents are demanding that properties support wireless devices for both voice and data
- In-building wireless services support operational systems
 - Staff services
 - Audio/Video and information requirements in amenity areas
 - Fitness equipment
 - Controlled access – door locks, video surveillance
 - HVAC monitoring and control of common areas



WiFi Has Become a Holistic Solution That Solves Problems Inside Buildings



- Managed, property-wide WiFi solves these building owner pains on one physical network:
 - Lack of in-building cell voice coverage
 - Need for amenity area data services
 - Need for competitive Internet services
 - Support for wireless operational services
 - Need for scalable technology that can support future add-ons
 - Need for high-level security for wireless network users





The Wireless Backbone

One physical WiFi network that has the capability of supporting all wireless operational services on multiple Virtual Local Area Networks (VLANs).



Scenario 1: Class A Apartment Complex

WiFi Calling & Subscription Data with Operational Support Systems



What is WiFi calling?

- Calling is seamless to the user – the calling experience is the same as it would be over the cellular network.

Property-Wide WiFi & WiFi Calling

- Fully managed network with 24/7 support and monitoring
- WiFi Calling voice service with dedicated bandwidth, QOS and voice packet prioritization.
- Subscription-based high speed Wi-Fi to compete with existing service providers.

Separate VLANs for staff services, fitness center equipment, A/V equipment, door locks, IoT.

- Scalable for future IoT support

wifi360 Plans & Pricing			
For complimentary access in the Amenity Areas choose WiFi network: "WiFi360"			
For Subscription Data Service – just sign up			
wifi360 Quantum	wifi360 Super	wifi360 Basic	wifi360 Voice
Access for 5 devices	Access for 5 devices	Access for 5 devices	Access for 1 Device
\$39.99/ month	\$34.99/ month	\$29.99. month	Complementary
Our fastest plan. Perfect for the Internet of Things! Fast video streaming, surfing and downloads on your favorite devices. No buffering or skipping.	Great for streaming data, surfing the internet, work and staying connected!	Basic WiFi access. Great for email, work and just surfing the 'net.	Just need voice over WiFi access? This plan gives your property-wide WiFi calling access on your smartphone!
Includes WiFi Calling!	Includes WiFi Calling!	Includes WiFi Calling!	
Up to 30/30 Mbps on each device	Up to 20/20 Mbps on each device	Up to 10/10 Mbps on each device	Data not included
No Contract Required	No Contract Required	No Contract Required	No Contract Required
To sign up from your device choose WiFi network:	To sign up on your device choose WiFi network:	To sign up from your device choose WiFi network:	To sign up from your device choose WiFi network:
"WiFi360"	"WiFi360"	"WiFi360"	"WiFi360_Calling"



Scenario 2: Class A Mixed Use Complex

CellBoost® Radio Enhancement System



- Brings cellular signal that is outside a building, inside.
- Carrier agnostic solution that is quick to deploy.
- Does NOT require carrier approval – approved by FCC. Requires carrier registration only.
- Great solution for properties that encounter large number of occasional users – no initial sign up required.
- Support for 2-Way radio for first responders.
- Costs a fraction of a DAS and quick to deploy.



Scenario 3: Affordable Housing Complex

WiFi Calling & Wireless High Speed Data with Operational Support Systems



- ▶ **Voice Calling and High Speed Data Internet Access under one subscription.**

- With WiFi Calling and wireless high speed data under one subscription, and inclusion of multiple devices under that subscription, residents obtain both voice and data.

- **Lifeline Subsidy may apply (March 31 FCC Agenda Item)**

In the event the FCC approves the approach, an independent body will determine if the service provider and housing authority are eligible for the subsidy. Includes both urban and rural environments.

In that event, the initial installation fee needs to be enough to have the service provider offer services to apartment residents at \$9.25 per month per apartment which would be covered by the Lifeline subsidy.

- **Separate VLANs for other applications such as electric sub-metering.**
- **Scalable for future IoT support**



Future Proof By Pre-Cabbling



- **Add a cable – save time, money and heartache.**
- Buildings without an adequate cabling plan can end up costing building owners time and money.
- **New Construction:** Properties can be prepared to support current and future wireless needs by utilizing a pre-cabling design during the construction phase.
- **Existing Construction:** Determine the most cost efficient approach to add cabling.
- Proper cabling can ensure that your property is able to support the wireless devices of the future