



# WBA CTO Innovation Forum

# Wi-Fi 7 & 5G Convergence

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Boingo Wireless

Dr. Derek Peterson, Chief Technology Officer

October 5, 2022



**Boingo simplifies complex  
wireless challenges to connect  
people, business and things.**





**Chicago O'Hare  
International Airport**



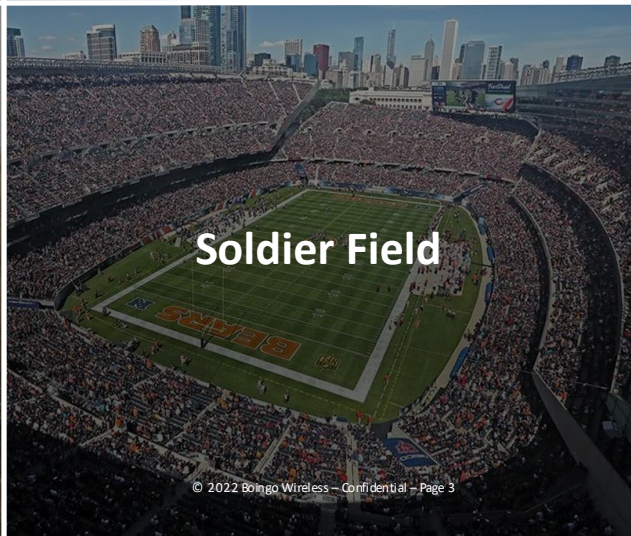
**World Trade Center**



**Rockefeller Center**



**Camp Pendleton,  
U.S. Marine Corps**



**Soldier Field**

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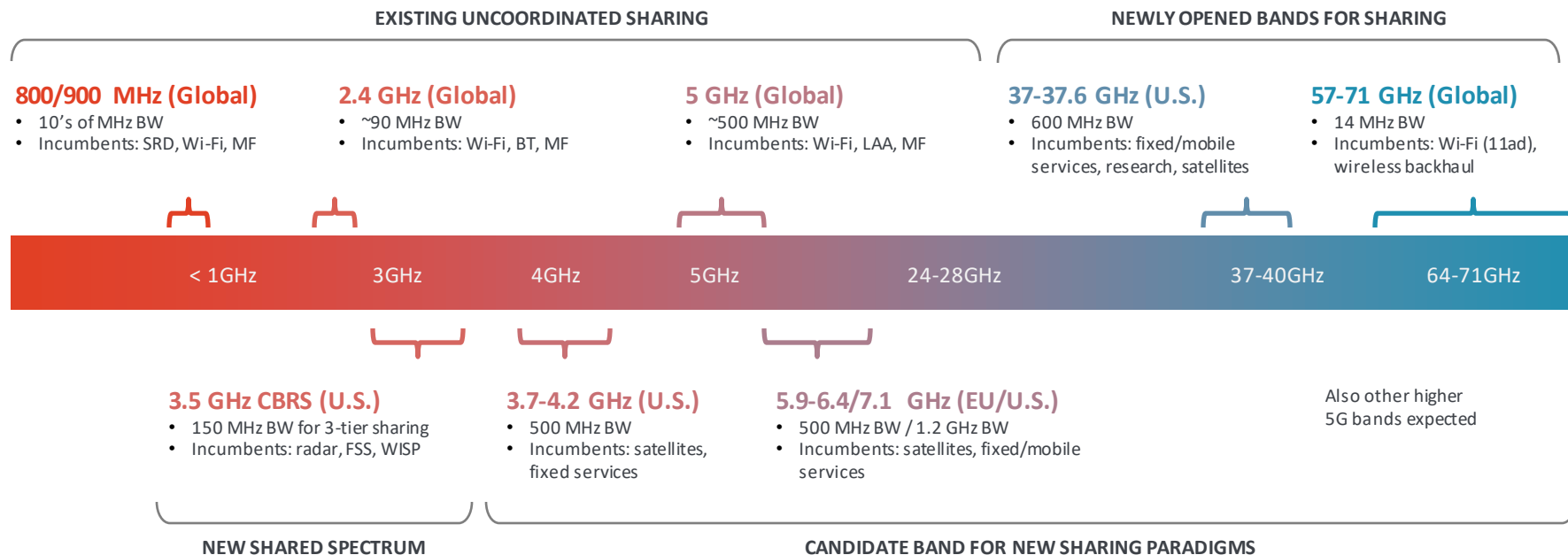
**Las Vegas Monorail  
Convention Center  
Station**

A low-angle, upward-looking photograph of several modern skyscrapers with glass facades. The buildings are silhouetted against a dark, overcast sky at dusk or dawn. The perspective creates a sense of height and scale. The text 'Spectrum Today' is overlaid in the center-right of the image.

# Spectrum Today

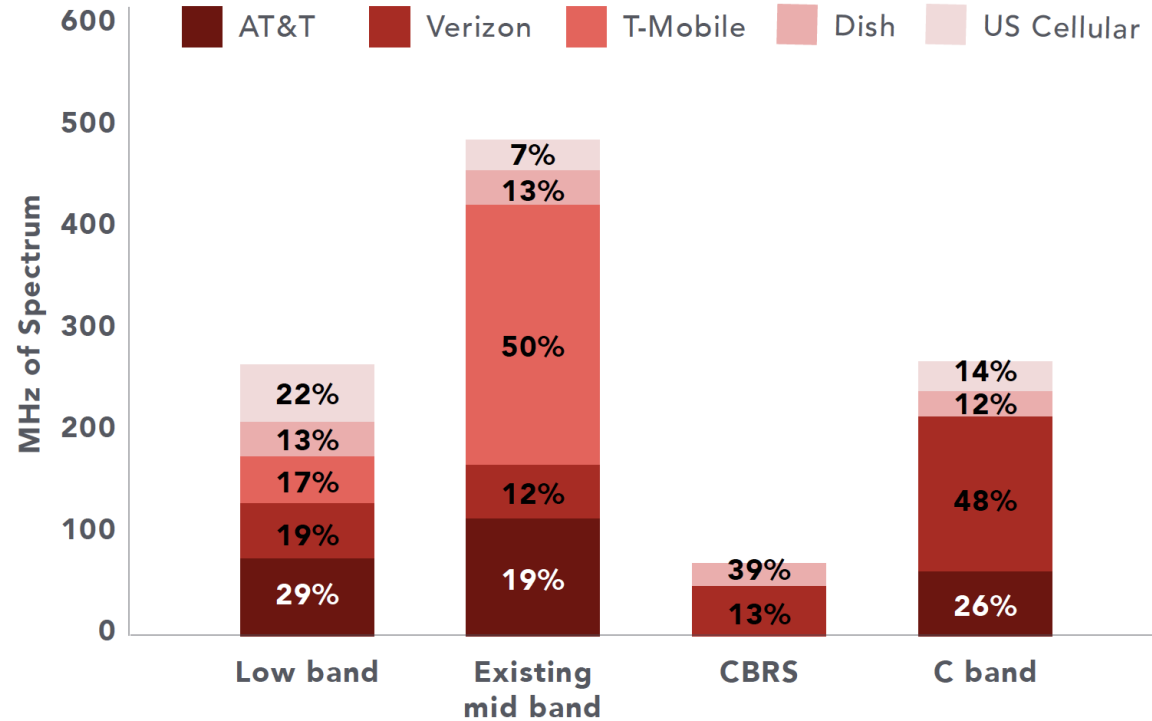


# Open Spectrum



# 5G Cellular Spectrum

Boingo works with  
all carriers to  
deploy 5G  
networks



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# Wi-Fi 6/6E and 7

# Wi-Fi 6/6E Delivers KPI Improvements

ENHANCED

Efficiency

Speed

Capacity

Performance



DENSE/DEMANDING  
ENVIROMENTS



SUPPORT GROWING MOBILE  
TRAFFIC



ACCOMMODATE  
FUTURE USE CASES



CONNECT MORE  
DEVICES



QUICKER RESPONSE TIMES

WBA is championing a  
global Wi-Fi program  
to ensure industry  
needs are addressed



# Road to Wi-Fi 7

## Wi-Fi 7 / 802.11be Specifications

- 7<sup>th</sup> generation
- 30Gbps – 46Gps Throughput
- 4096 QAM
- 320MHz channels
- Multi-AP operation
- Milti-link operation
- 16 Spatial Streams
- Multi-RU
- WPA4 Security
- Extended Spectrum in 6GHz
- Spectrum sharing with Incumbents

## Innovative Use Cases

- Wi-Fi Sensing
- IoT segment with smaller channels
- 3D content
- XR (AR/VR) type of applications
- Location Based Services
- Convergence and Co-Integration with 5G / CBRS etc.
- Rural
- Multi AP for Residential
- SmartHome
- Connected Vehicles

## Infrastructure Digitization

- NFV/SDN
- RAN Virtualization with Software Defined Radios
- Cloud based Controllers
- Open standards (OpenWiFi)

## Quality of Service

- WMM
- OCE and MBO
- Wi-Fi Vantage™
- Similar quality to QCI/5QI
- Deterministic Transmission
- Deterministic Low Latency
- Higher Spectral efficiency (~80%)
- Traffic Classification advancements

## Market Segments

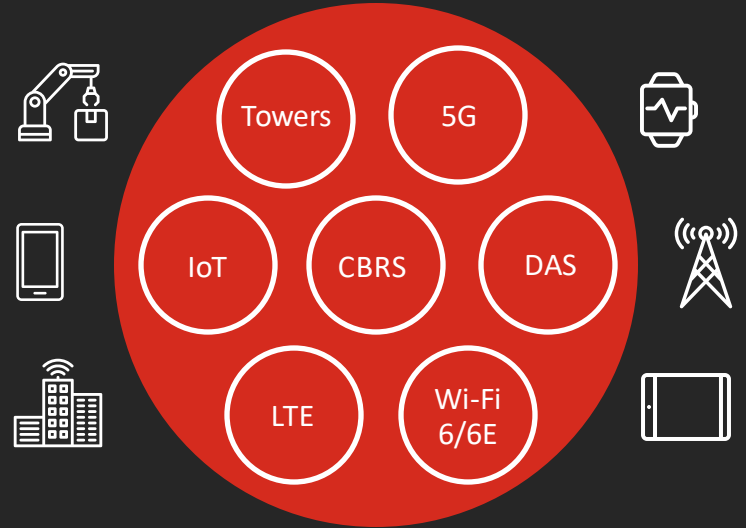
- Airports
- Healthcare
- Smart Cities
- Transit Hubs
- Manufacturing
- Office Buildings
- Industrial IIoT
- Public Safety
- Outdoor Spaces
- MDU
- Hospitality
- Automotive
- Stadiums
- Concert Venues

# Network Convergence

## Siloed



## Converged



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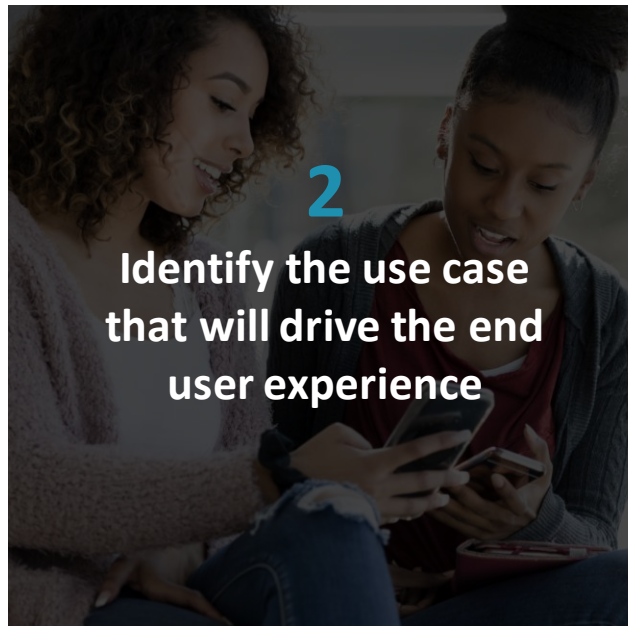
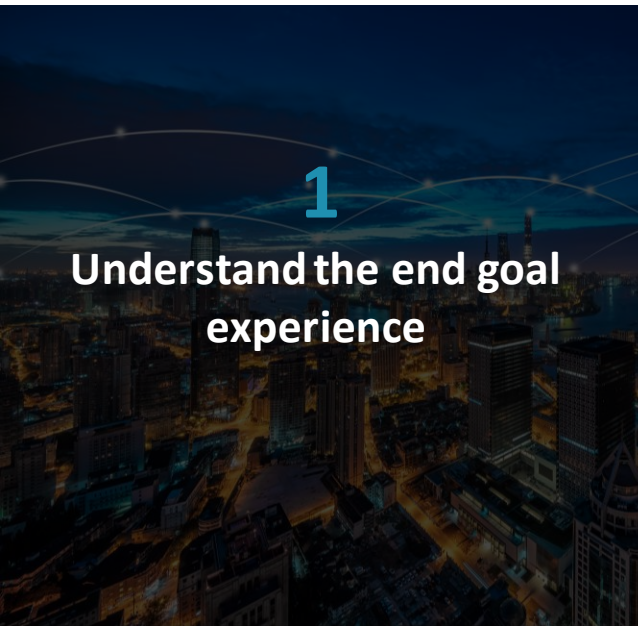
# Use Cases Lead the Way



# Focus on the Use Case

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The end user experience and connected use case must lead the way when designing and building network solutions.



A large crowd of people is gathered at night, likely at a sports event. The scene is illuminated by bright stadium lights, creating a vibrant atmosphere. In the background, a large scoreboard is visible, displaying the word "Sycuan" in a stylized font. The overall mood is energetic and festive.

# Connecting Petco Park Gallagher Square

A conversation with Ray Chen, San Diego Padres Vice  
President of Information Technology

