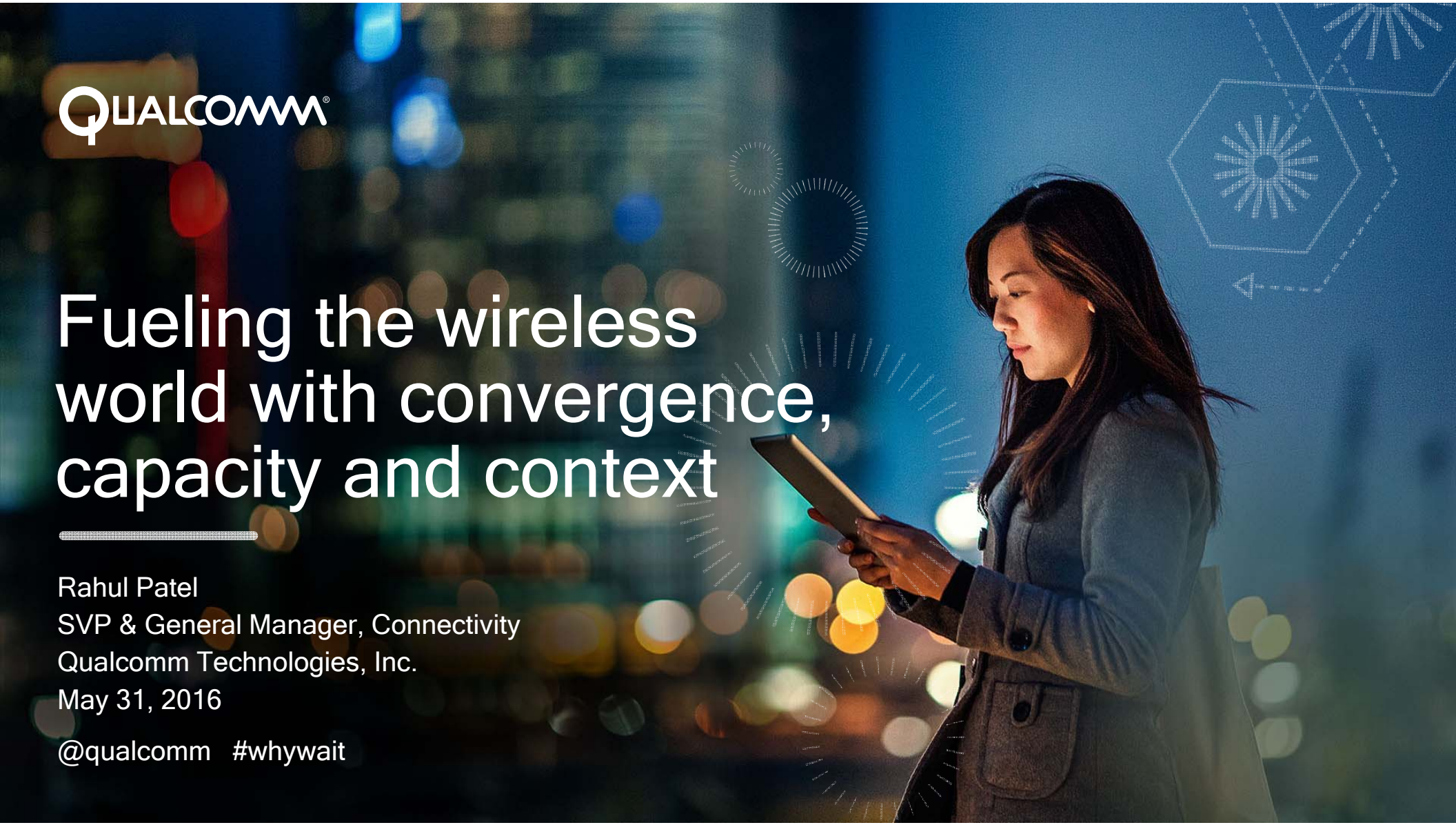
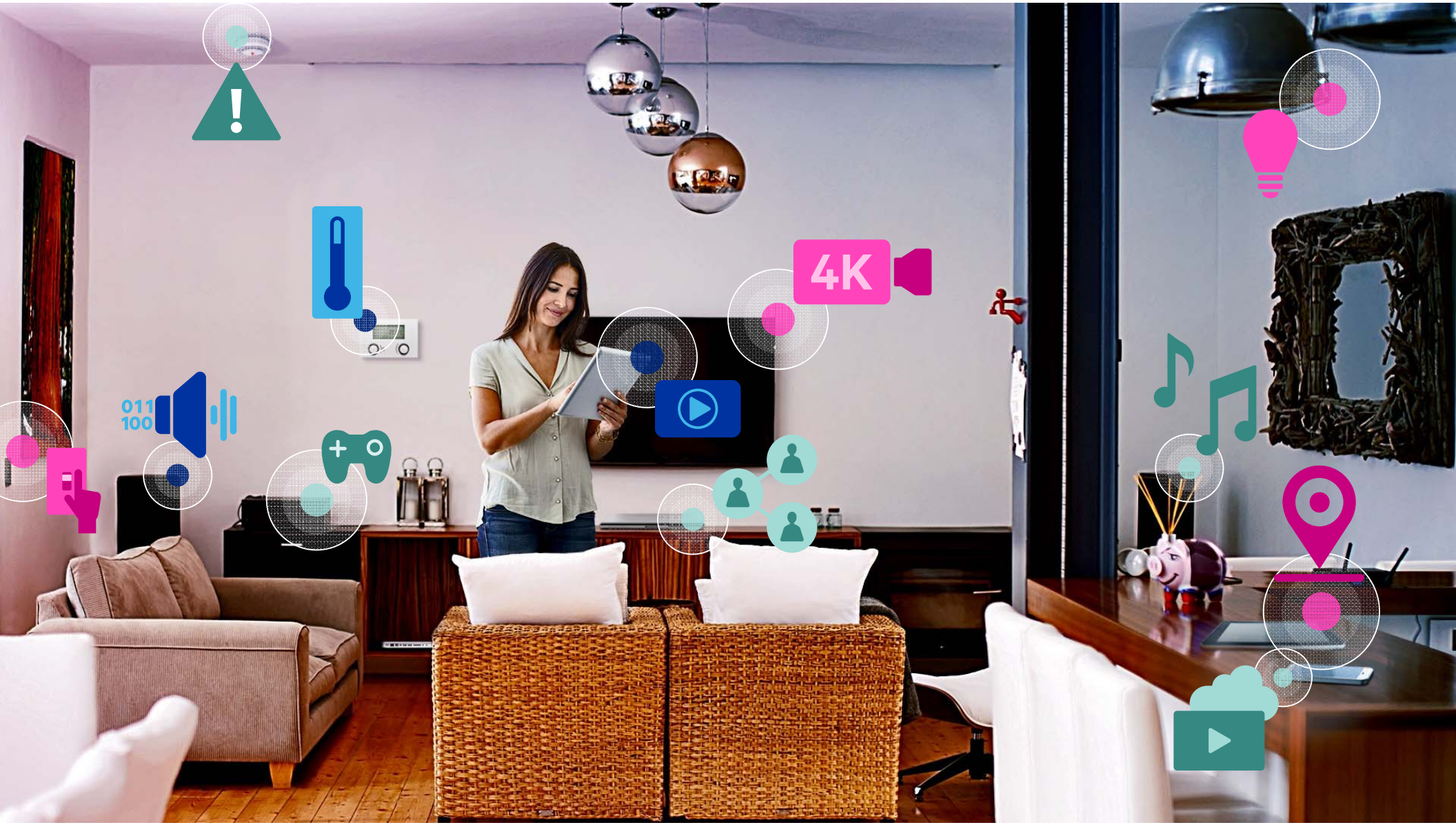


Fueling the wireless world with convergence, capacity and context

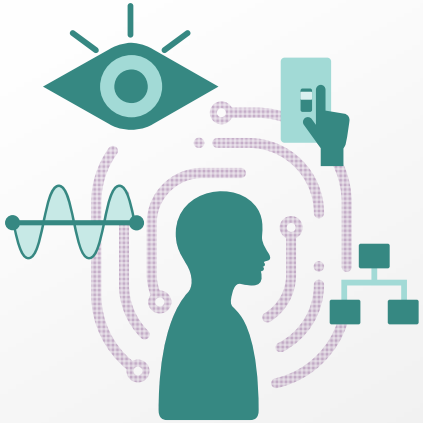
Rahul Patel
SVP & General Manager, Connectivity
Qualcomm Technologies, Inc.
May 31, 2016

@qualcomm #whywait

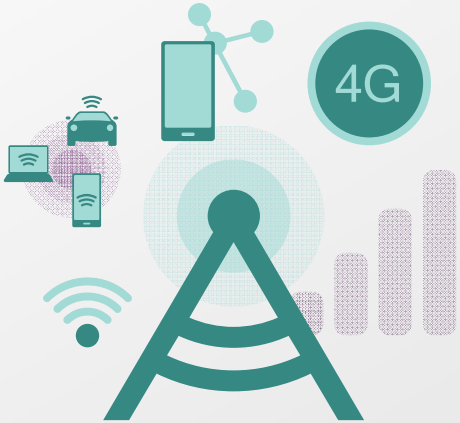

4K
011
100

Our holistic approach

Capacity



Context and experience



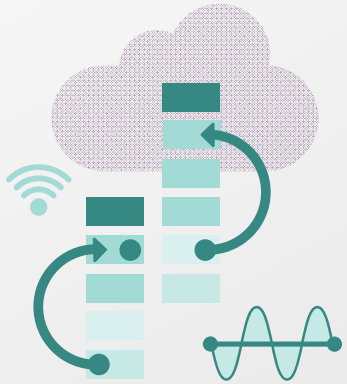
Convergence

Capacity

Three ways of addressing capacity

More spectrum

More antennas



More efficiency

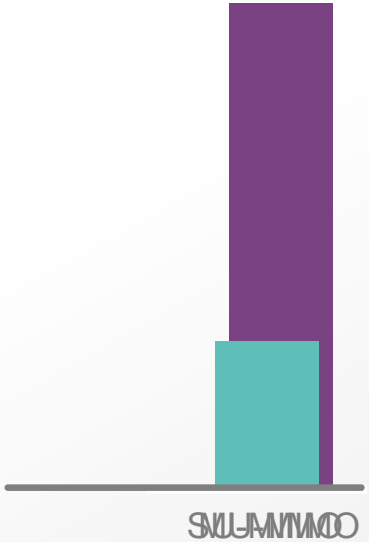
Multiplying Wi-Fi capacity can greatly improve experiences

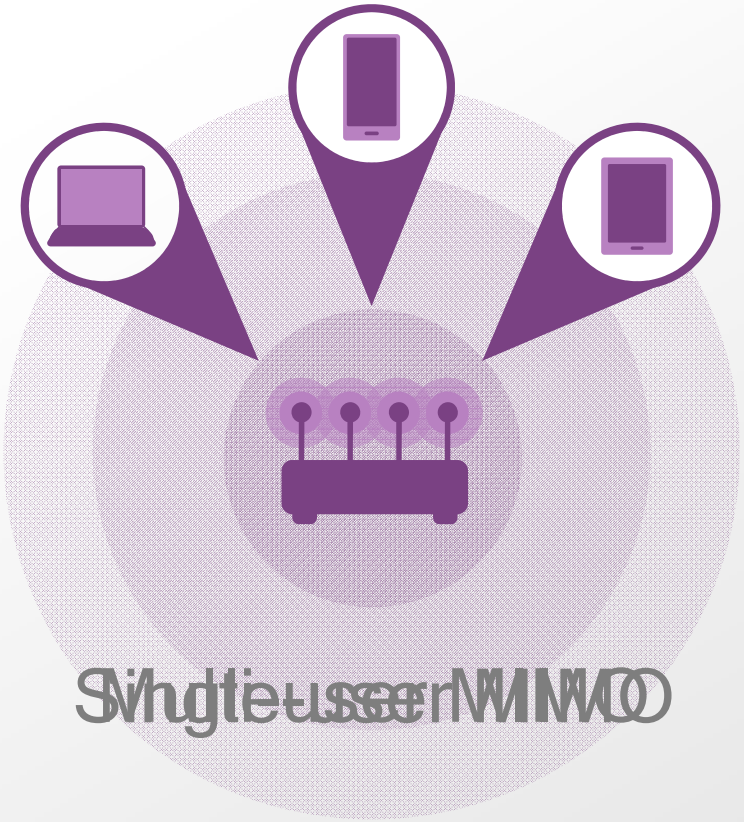
802.11ac with Multi-User MIMO solves traffic congestion

Up to

3x increase

throughput and capacity





NEWS: Tri-radio platforms bring high-end performance & user-friendly features into mainstream 11ac routers

Integrated SoC
Quad-core ARM Processor
Two 2x2 11ac radios
Gigabit Ethernet
Qualcomm Wi-Fi SON

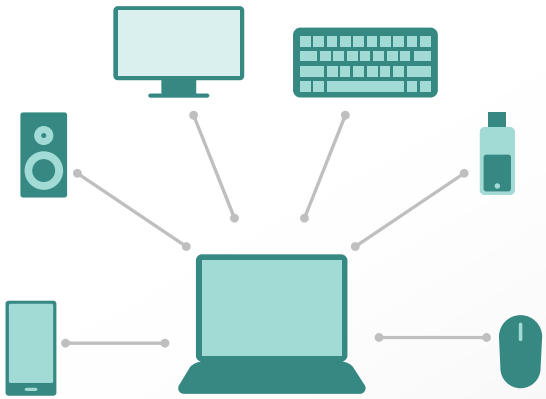
Premium Routers
4x4 11ac radio

Mainstream Routers
2x2 11ac radio

- More network capacity
  - AC3200 or new AC2200 router classes
  - Multi-User MIMO
- Greater flexibility
  - Band-steering & load balancing across 2.4 / 5 GHz
  - Ideal for distributed & mesh networks
- Better connected experiences
  - Less congestion
  - Wi-Fi SON for simple setup and automatic optimizations

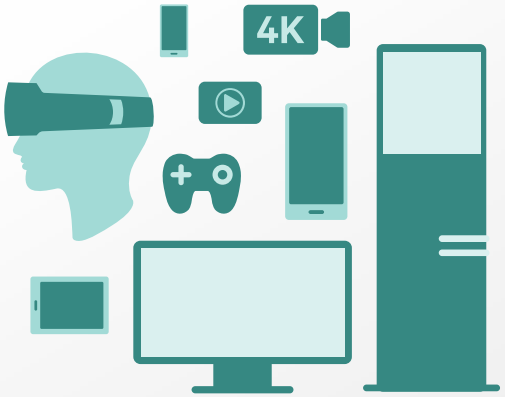
More capacity can also empower completely new services

802.11ad taps into new spectrum to transform Wi-Fi experiences



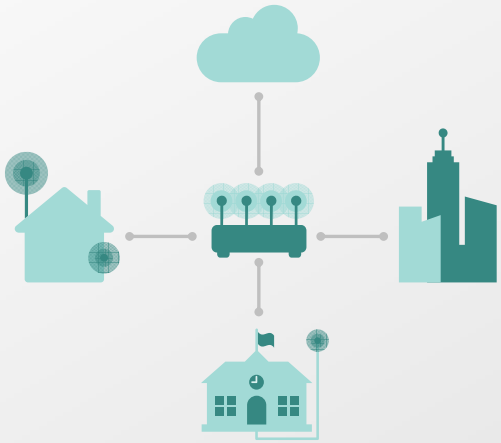
Productivity

Wire-free desktops,
back-up and sync



Entertainment

4k media streaming, wireless VR,
lag-free gaming, mobile media kiosks

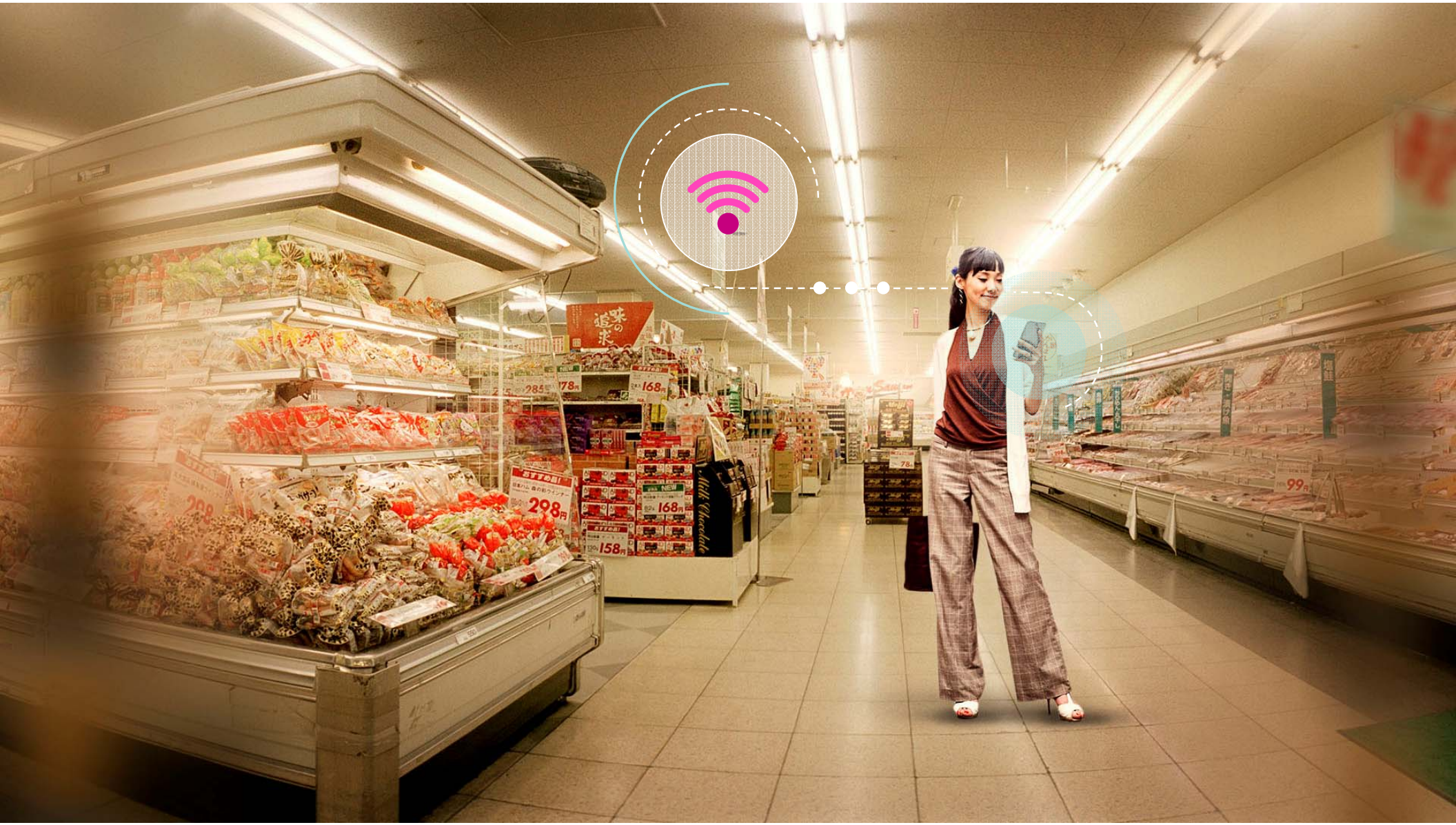


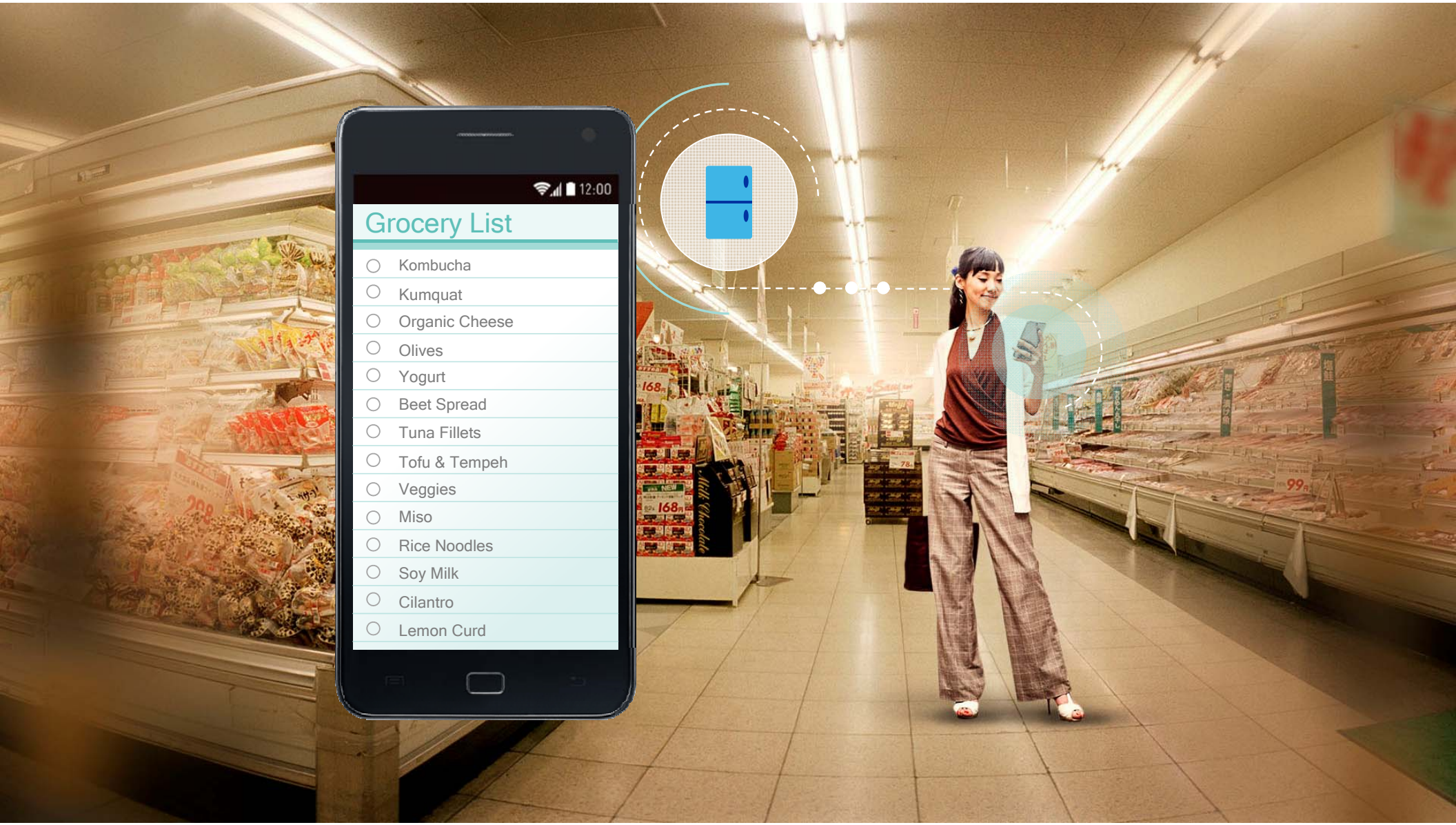
Networking

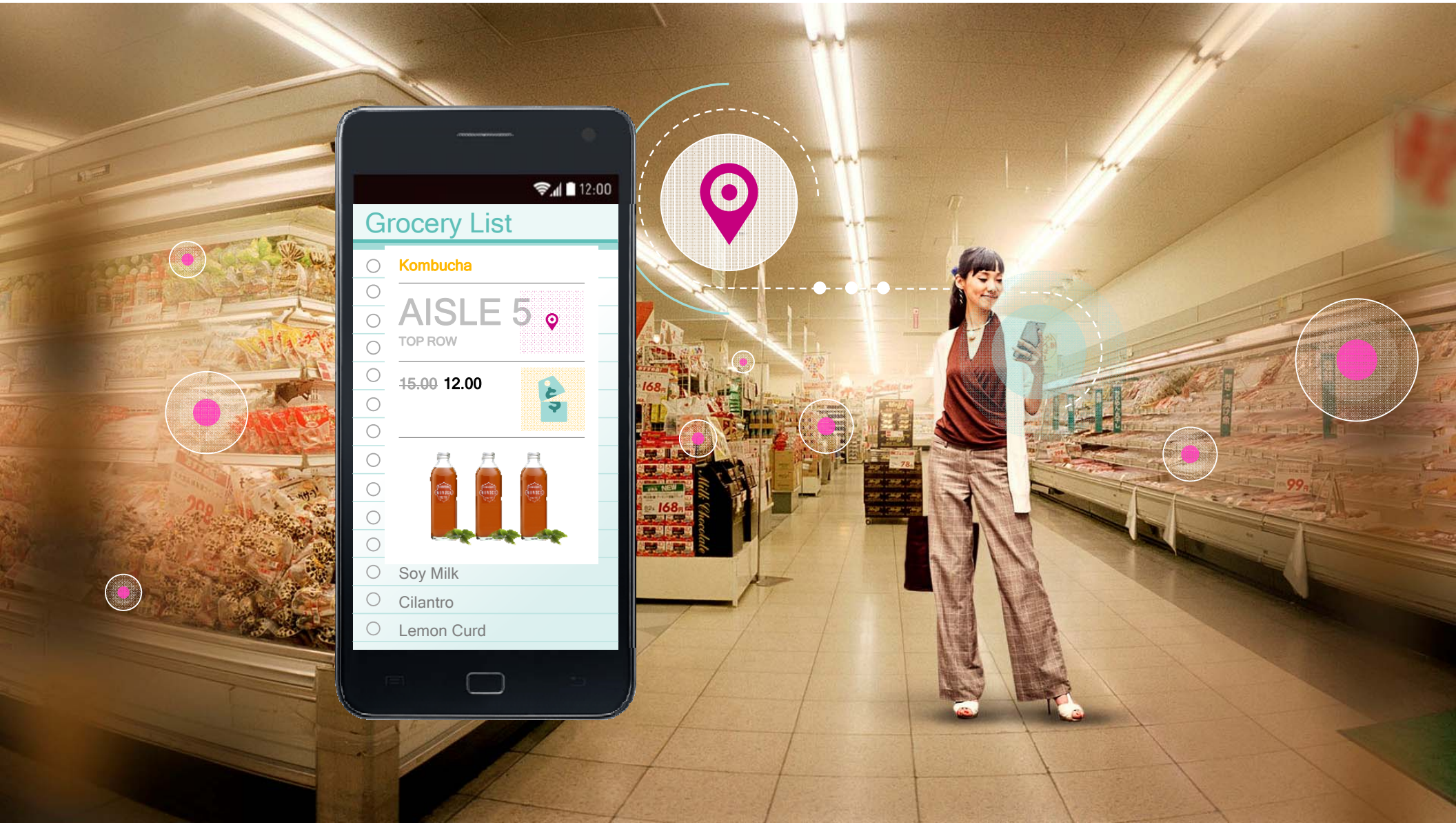
Homes, enterprises, schools
and universities

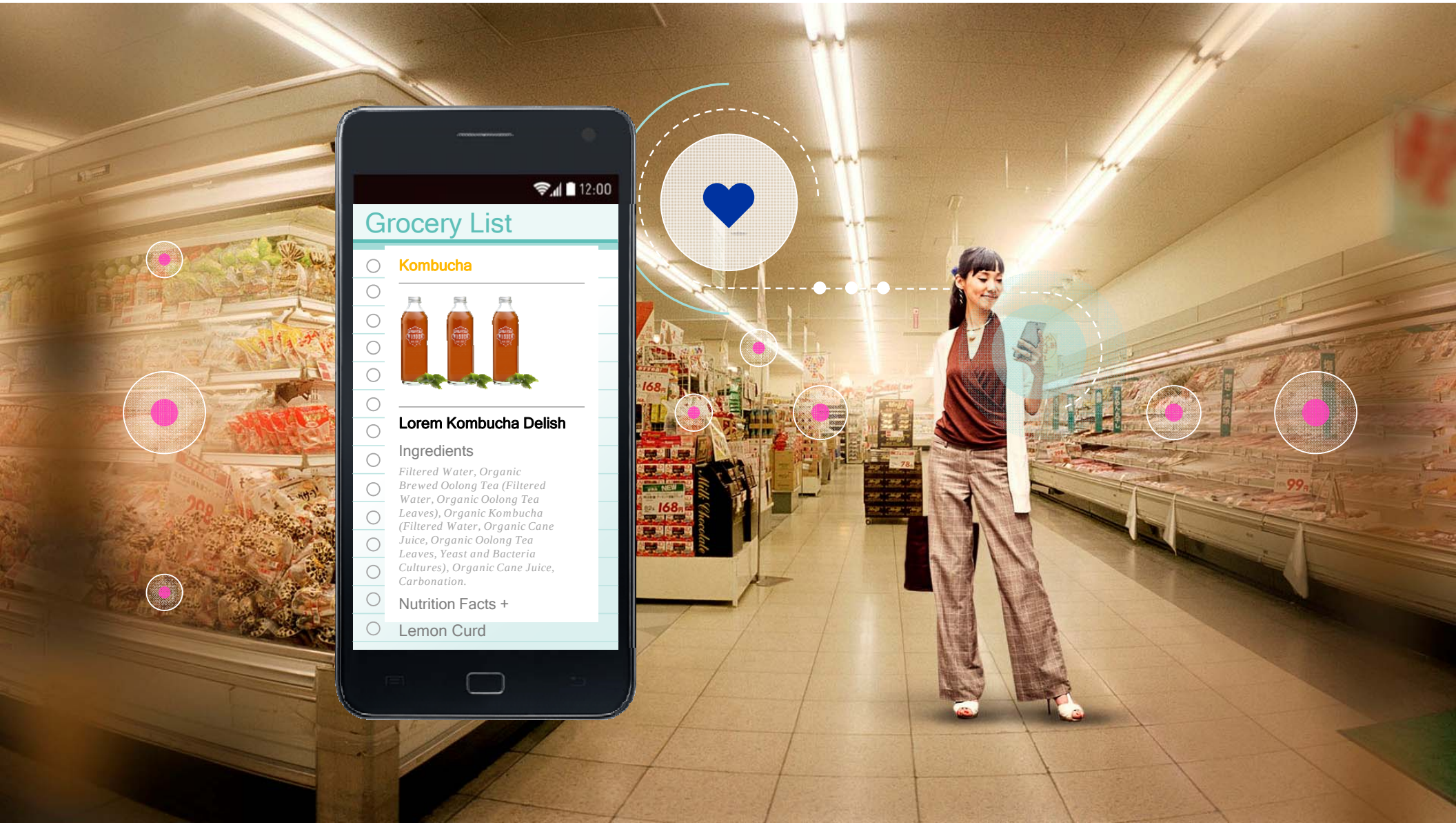
Context and experience

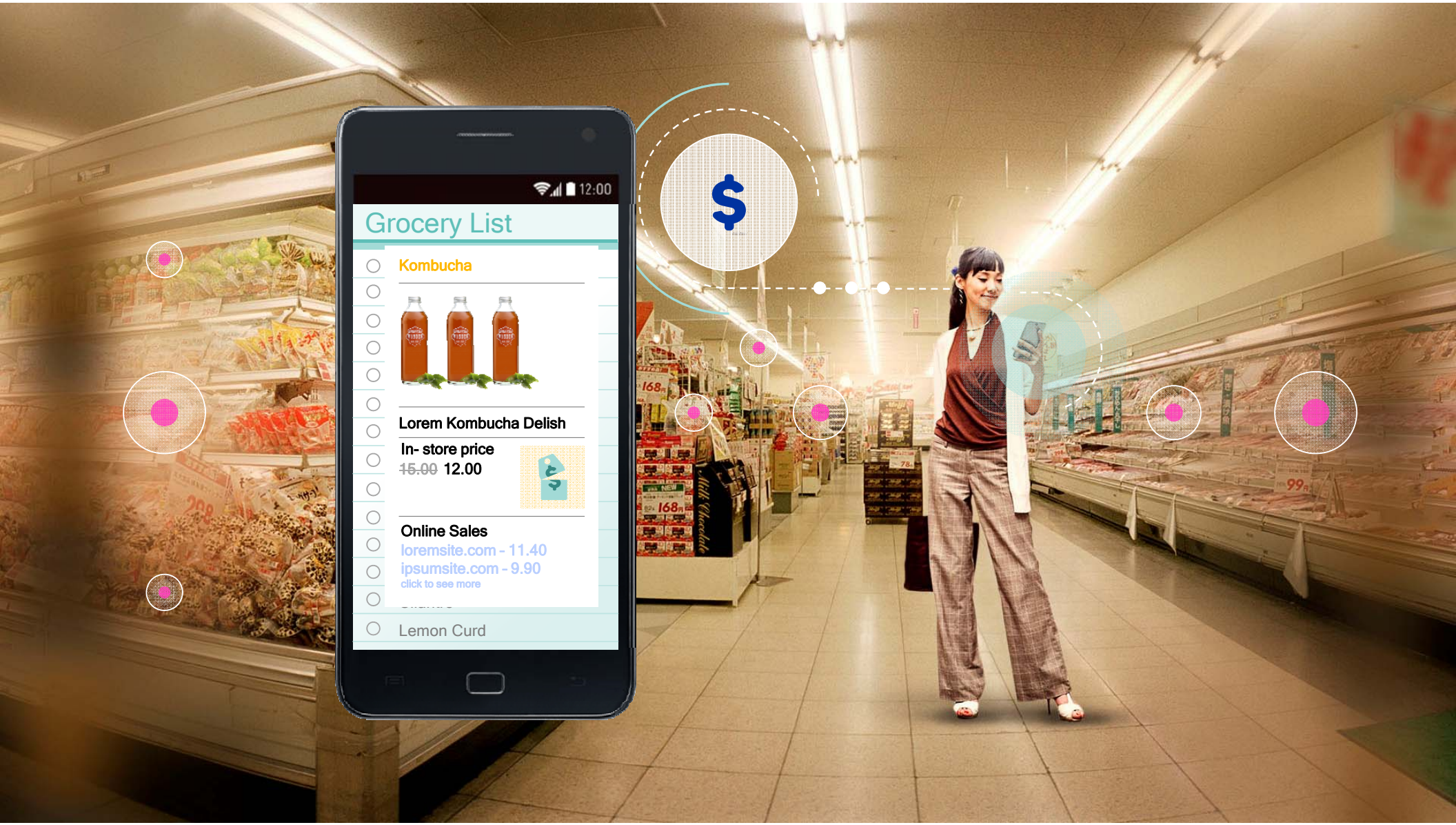

Reminder
grocery


298円
168円
158円
99円


12:00
Grocery List
Kombucha
Kumquat
Organic Cheese
Olives
Yogurt
Beet Spread
Tuna Fillets
Tofu & Tempeh
Veggies
Miso
Rice Noodles
Soy Milk
Cilantro
Lemon Curd


12:00
Grocery List
Kombucha
AISLE 5
TOP ROW
15.00 12.00
Soy Milk
Cilantro
Lemon Curd


12:00
Grocery List
Kombucha
Lorem Kombucha Delish
Ingredients
Filtered Water, Organic Brewed Oolong Tea (Filtered Water, Organic Oolong Tea Leaves), Organic Kombucha (Filtered Water, Organic Cane Juice, Organic Oolong Tea Leaves, Yeast and Bacteria Cultures), Organic Cane Juice, Carbonation.
Nutrition Facts +
Lemon Curd


12:00
Grocery List
Kombucha
Lorem Kombucha Delish
In- store price
15.00 12.00
Online Sales
loremsite.com - 11.40
ipsumsite.com - 9.90
click to see more
Lemon Curd

User-centric view of context awareness

Personalization
For best user experience

Optimizations
For best performance

Action
Autonomous

Location
Where

Activity
What is happening

Co-presence
Who is around

Environment
Who is around

Inferring context
Smart algorithms

Connectivity
LTE, Wi-Fi, BT

Sensors
Motion, Location, Proximity

Application
Usage/Behavior

Gathering data
Always ON, low-power

Introducing Qualcomm® All-Ways Aware™ Hub

Utilized by Google Awareness API; Part of Qualcomm® Snapdragon™ processors

Google I/O 2016

Qualcomm snapdragon™

- Low-power DSP
- Low-power Wi-Fi Scans
- Low-power BT/BTLE Scans
- Low-power Location
- Power Efficient 3G/ 4G LTE
- Range of sensors

Network-centric view of context awareness

Speed
e.g. for media

Optimized configuration

Bands, technologies, and topologies
802.11n, ac , ad, ax
2.4GHz, 5GHz, 60 GHz
LTE, BT, BLE
xDSL, PLC

Battery life
e.g. for IoT

Efficient management

Latency
e.g. critical services

Robust connection

Security
for whole network

Round-the-clock security

Monitoring air links

Understanding device/app needs

Action
Autonomous

Qualcomm® Wi-Fi SON (Self-Organizing Networks)

Contextually aware networks address many pain points associated with networking

Self-configuring
Plug-and-play

Self-healing
Network bottleneck resolution

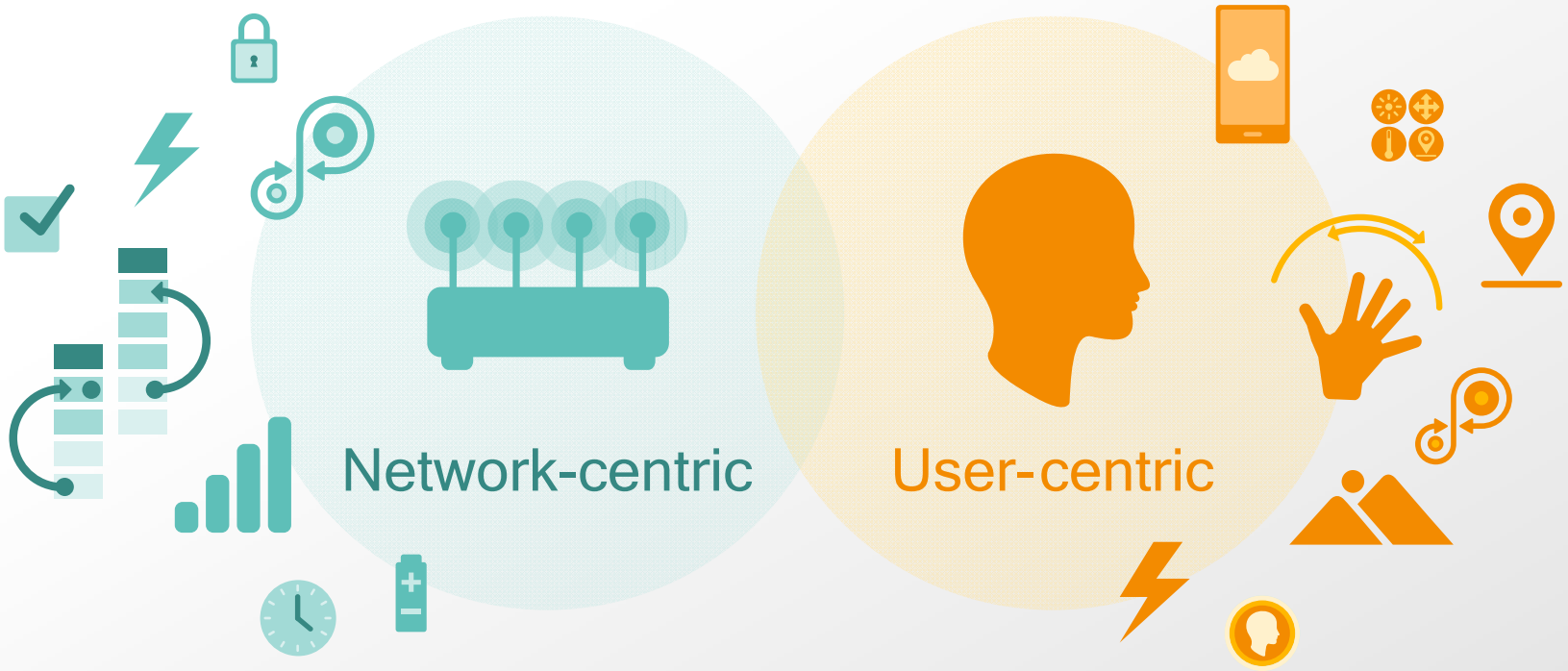
Self-managing
Autonomous performance optimization

Self-defending
Round-the-clock security

Qualcomm Wi-Fi SON is a product of Qualcomm Atheros, Inc.

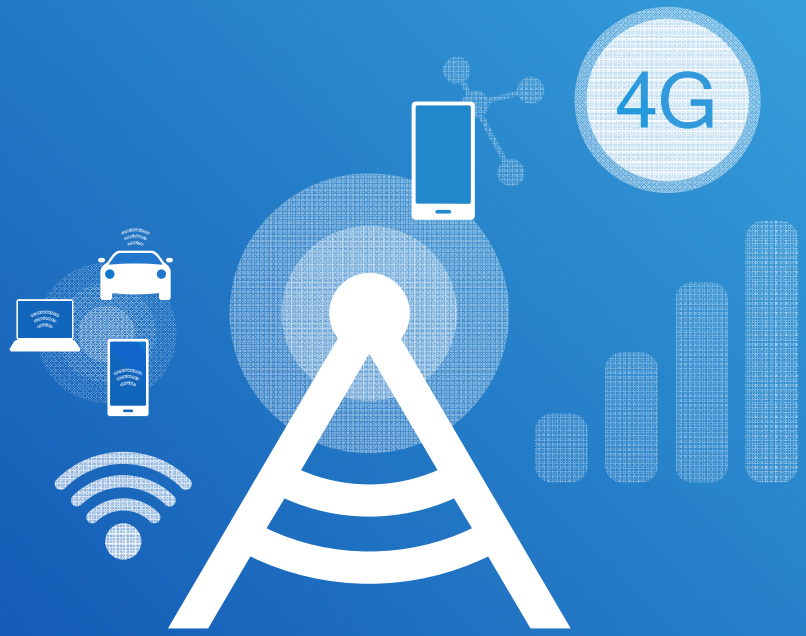
End-to-end approach to deliver best contextual experience

For the “always best connected”

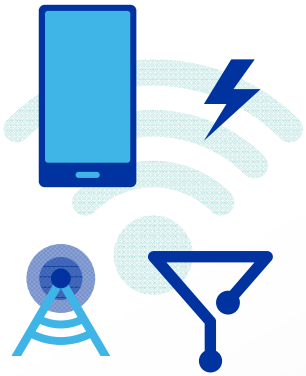


Utilizing context from both sides

Convergence

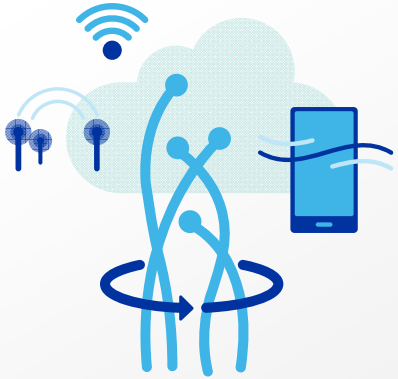


Convergence across multiple dimensions



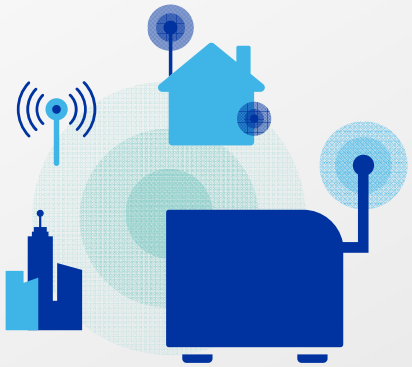
Device integration

Optimizing components for better size, cost and power



Resource aggregation

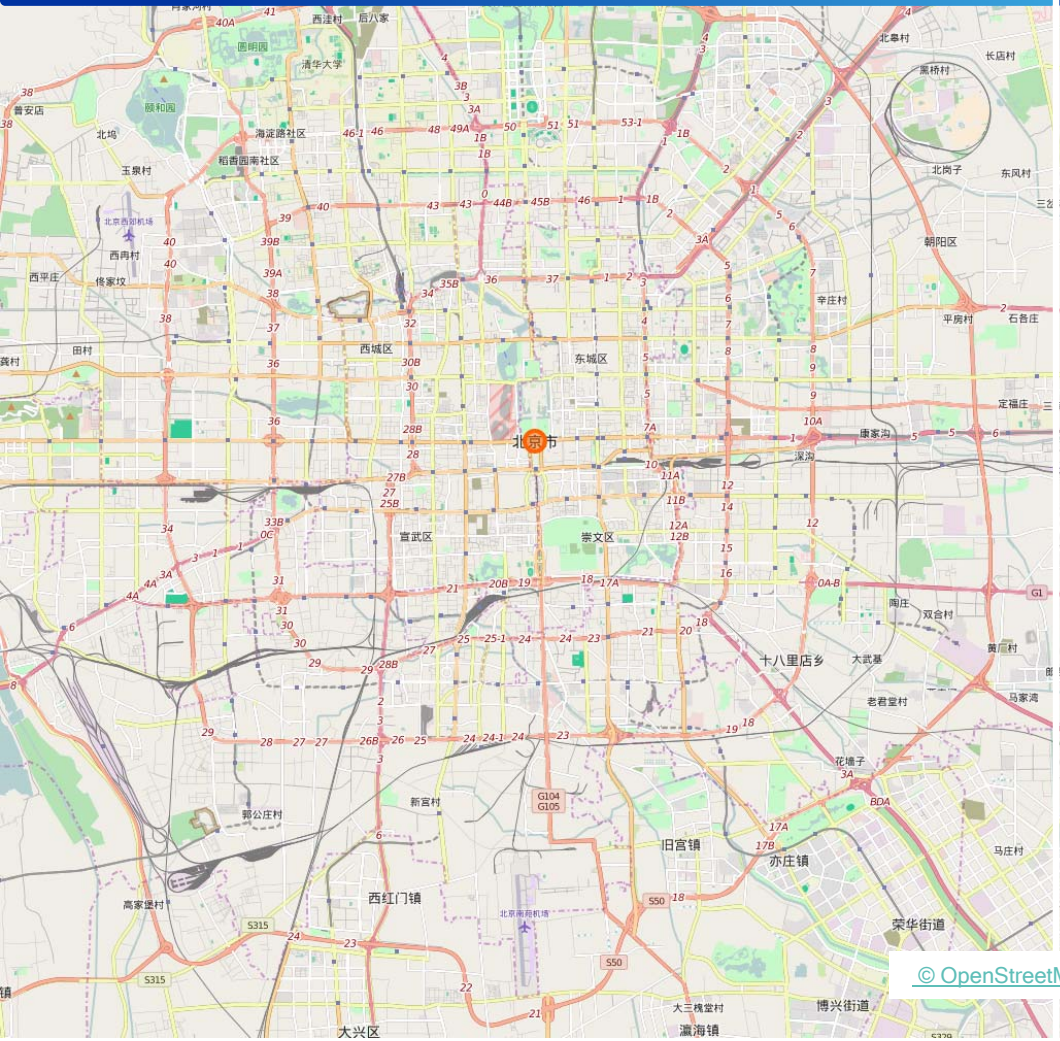
Making best use of spectrum and infrastructure to maximize performance



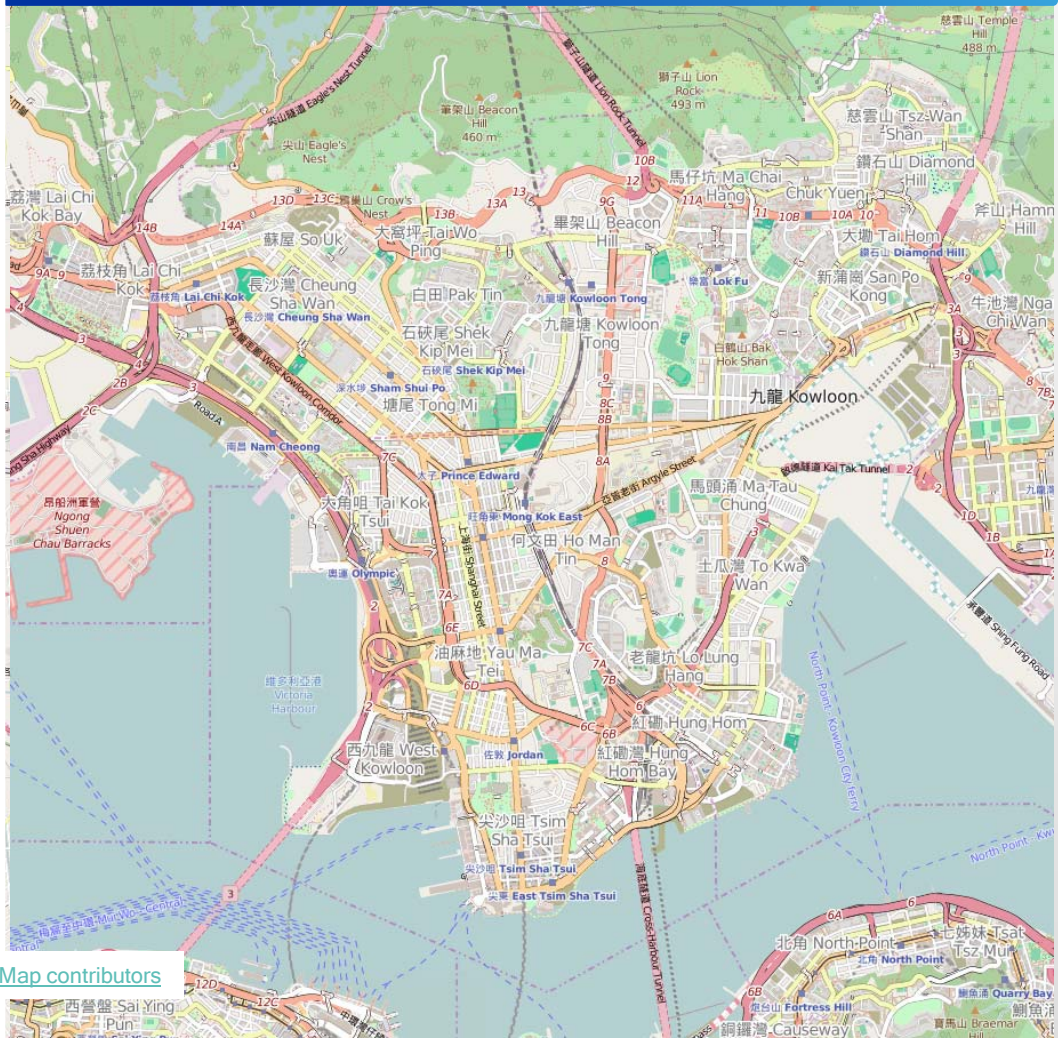
Platform convergence

Combining disparate parts of the platform to simplify home, enterprise, and carrier deployments

LTE is like Beijing

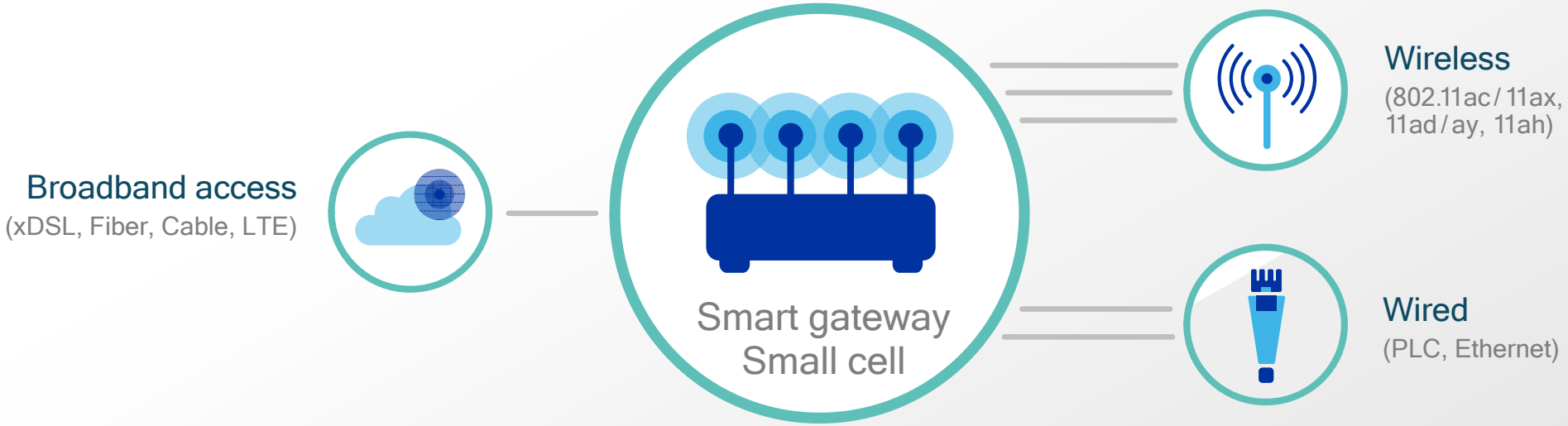


Wi-Fi is like Hong Kong



Convergence of access, wired, and wireless technologies

Smart gateway/small cell at the center of this convergence



Orchestrate connectivity

Central hub for all connected devices
Plug-and-play connectivity

Manage personal cloud

Securely store and manage user content, information

Continuously learn and adapt

Manage QoS based on analytics, user, and app behavior

Building the end-to-end ecosystem

Thank you

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