



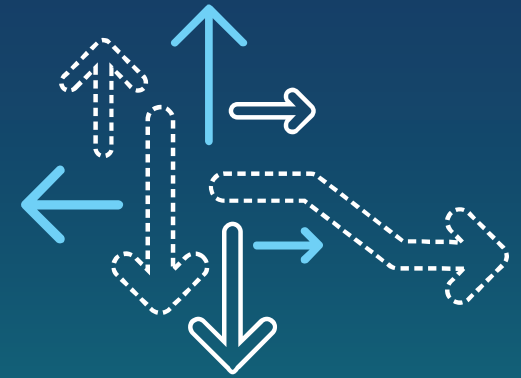
Guillaume Lebrun, Director
Mai, 2015
Qualcomm Technologies, Inc.

Media Distribution: Requirements

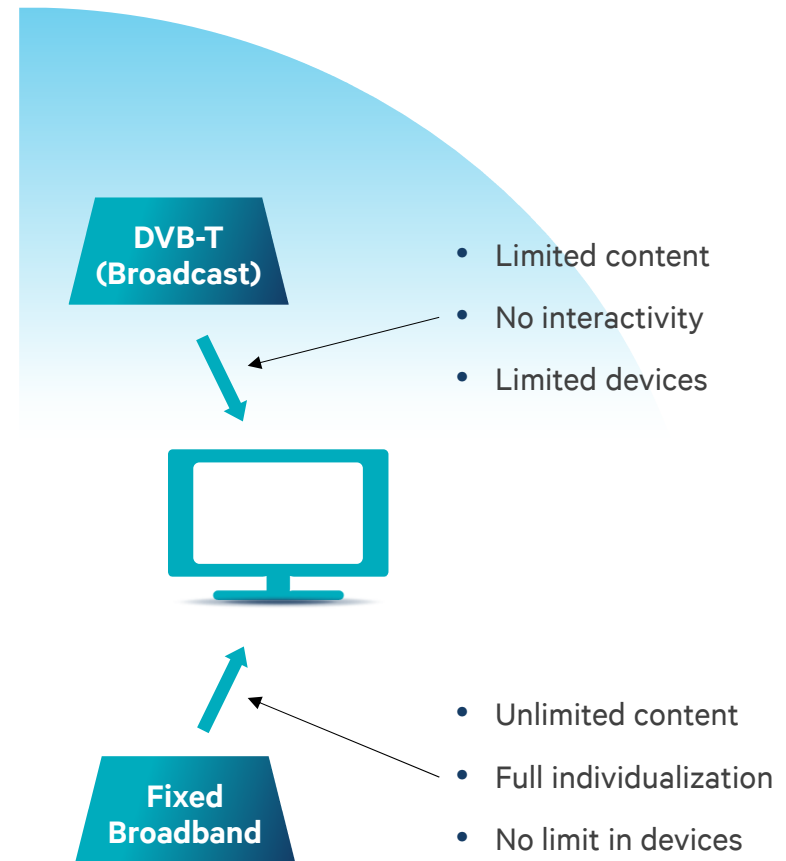
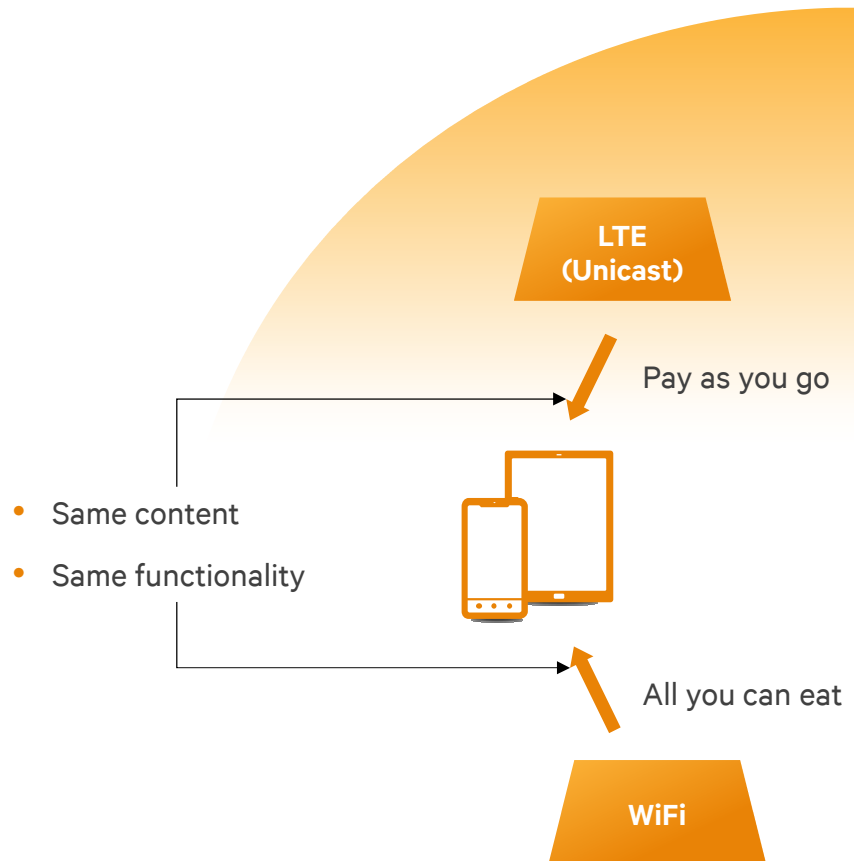
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Business Vision



Alternate future 1: no convergence of wireless TV platform



Looking at the world through the eye of a needle

Mobile Network Operators

- I cannot get access to content
- I cannot monetize my infrastructure
- Video content is killing my network



Broadcast Content Provider

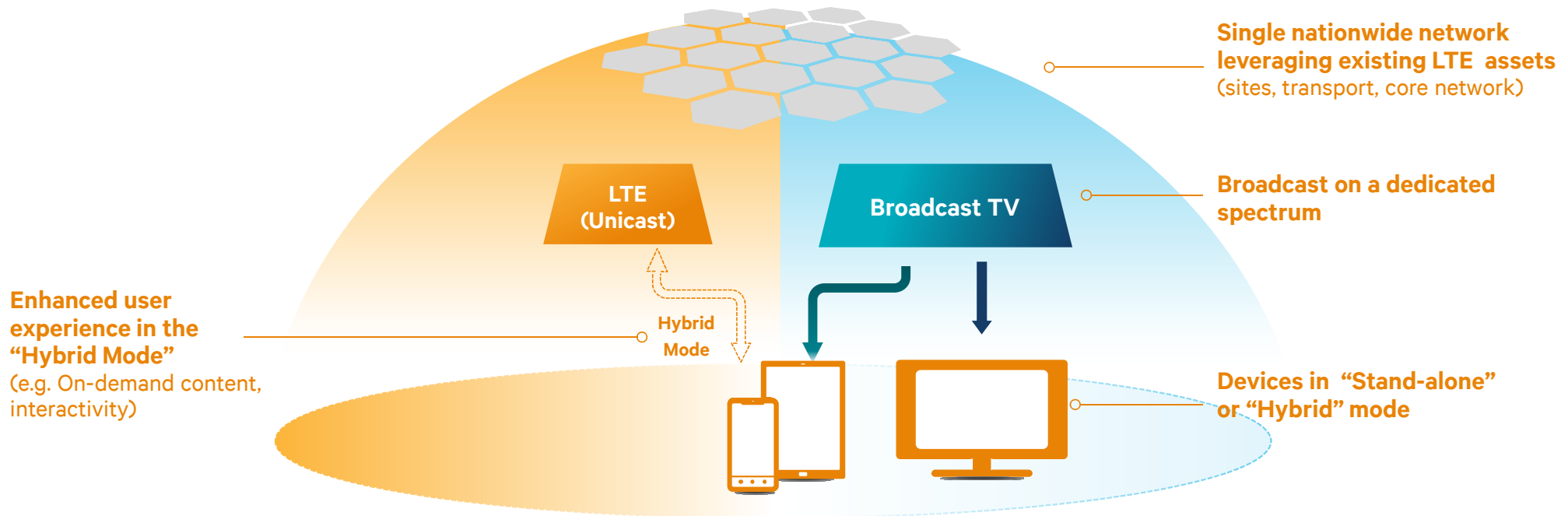
- I cannot reach out to mobile devices
- I do not have a personal relationship with customers
- The network costs too much
- Any upgrade is a 10 year process



Alternate future 1 through the eyes of analysts

- **Conviva** - Internet-delivered television is becoming perfectly normal - TV is becoming a more individual, rather than community, experience. Viewers swiftly move to mobile for their content
- **Infonetics** - the OTT business grew to nearly \$6 Billion in revenues in 2014 and is poised to nearly double to \$10 billion by 2018.
- **Freewheel** - Wherever you look in digital video, there is overwhelming evidence that it is rapidly maturing and growing into its long-awaited role as the future of television. The advertising landscape for digital video continues to converge with that of linear TV. Advertising dollars [are driven] to digital channels.
- **Freewheel** - Once authenticated, viewers enjoy access to the rich on-demand libraries that lay behind the wall. digital video's premium positioning is the adoption of measurement currencies. Monetization via authenticated viewing grew 368% year-over-year in Q3.
- **Yume** - This year, consumers are likely to go online to not only purchase gifts but also to prepare for their holiday shopping. In order to strategically target audiences this holiday season, the multiscreen strategy is important for advertisers to adopt.
- **Wywy's** - Marketers are spending millions on TV ads only to potentially lose interested TV viewers when they use their companion second-screen device to purchase or seek more information and can't find the advertised product.

Alternate future 2: fully converged TV services



"TV is dead anyway!"

"What, another DVB-H?"

"Whatever you say/prove, it won't ever work!"

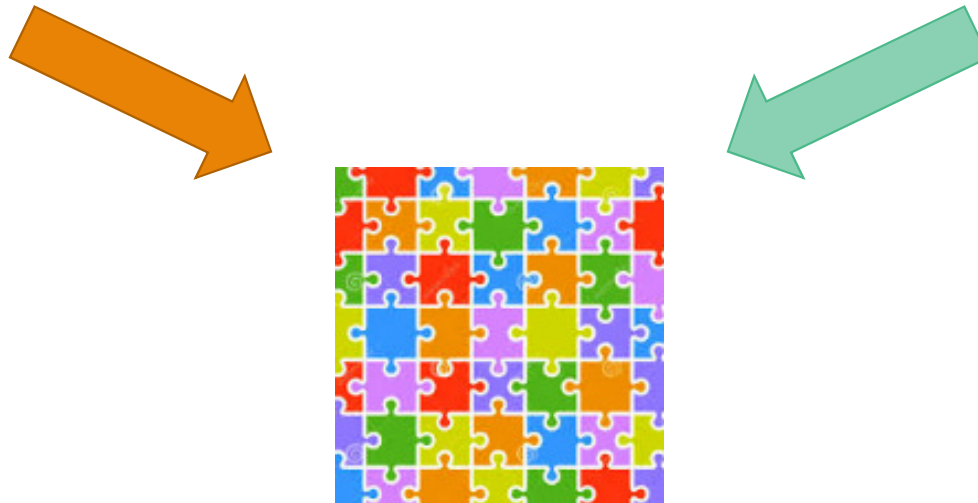
Combining assets to expand the offer

Mobile Network Operators

- Mobile grade network, latest technology
- Integrated unicast + broadcast platform
- Customer relationship + Payment platform

Broadcast Content Provider

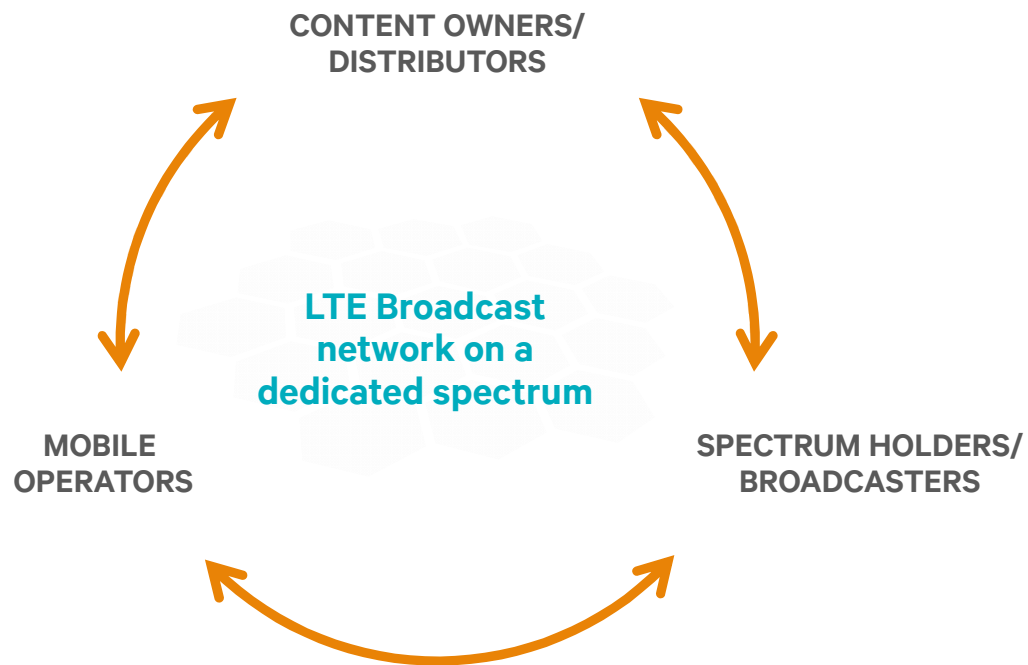
- High quality content
- Free to air + Quality of Service
- Ability to influence demand



Alternate future 2 through the eyes of analysts

- **Freewheel** - This was a yet another huge quarter for live viewing [on OTT platforms]. We saw 214% growth in live video ad views year-over-year, with live accounting for 21% of all video ad views.[] Digital-first networks... see a compelling value proposition around digital viewing of 'TV-Style' content []
- **Conviva** - Our 2014 data shows that the highest picture fidelity isn't always delivered where we might most expect it. As more and more people use the same pipes, their individual share of available bandwidth is reduced. As mobile audiences grow, the mobile carriers become a critical link in the chain of delivering the ideal experience.
- **Freewheel** - [In Q3 2014, video adds'] monetization on smartphones and OTT devices exploded, growing 77% and 208% year-over-year.
- **Wywy's** - Second-screen device home pages increases conversion rates two to five times and is vital to getting the most out of a TV media buy.
- **Juniper Research** – Carrier billing [increase consumption of OTT content/applications] more than 30 times over credit cards billings in some instances.

Opens up new business opportunities



Individual/contextual advertising

Improved audience tools

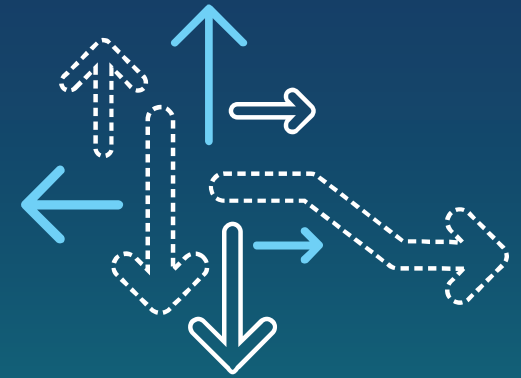
Carrier billing

Interactive TV

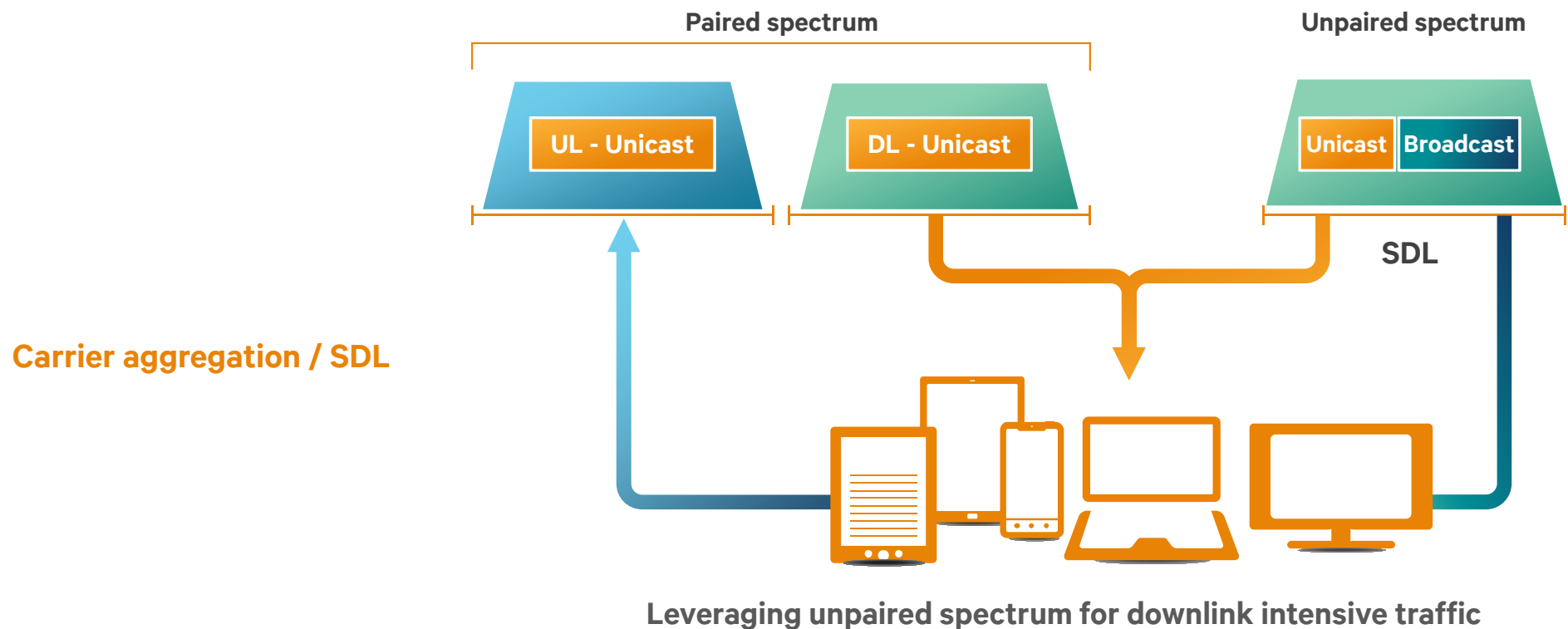
Mobility designed content

True anywhere/anytime content

Identifying corresponding requirements



Requirement 1: support both unicast and broadcast



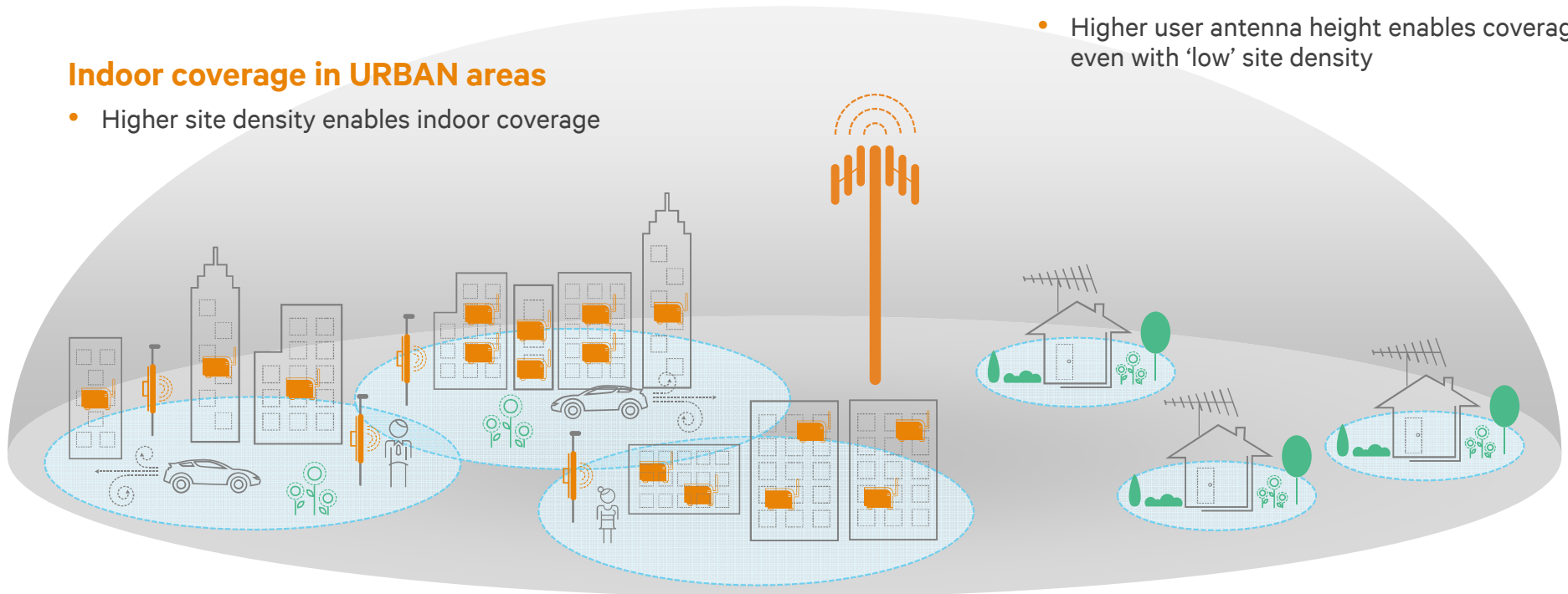
Requirement 2: support both fixed rooftop and mobile

Indoor coverage in URBAN areas

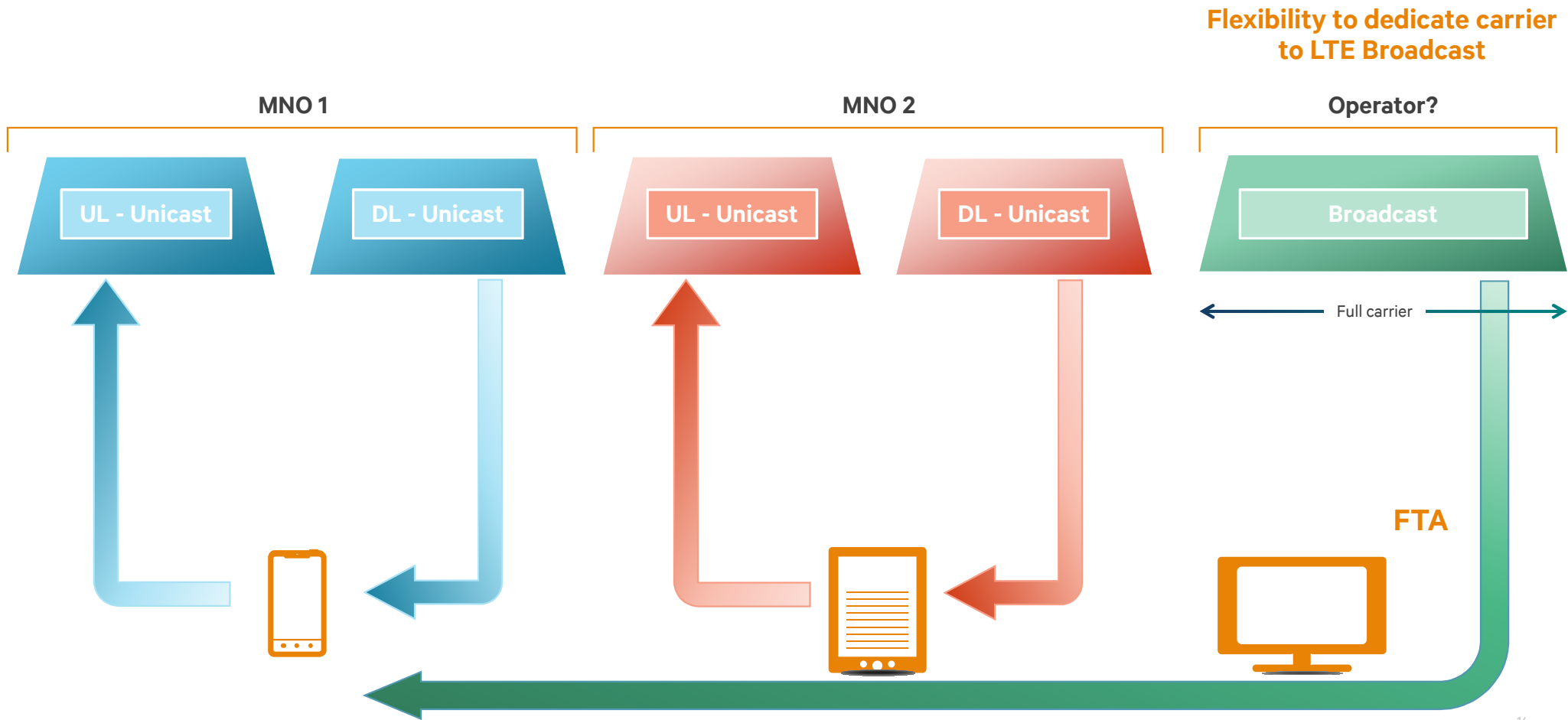
- Higher site density enables indoor coverage

“Roof-top” reception in RURAL areas

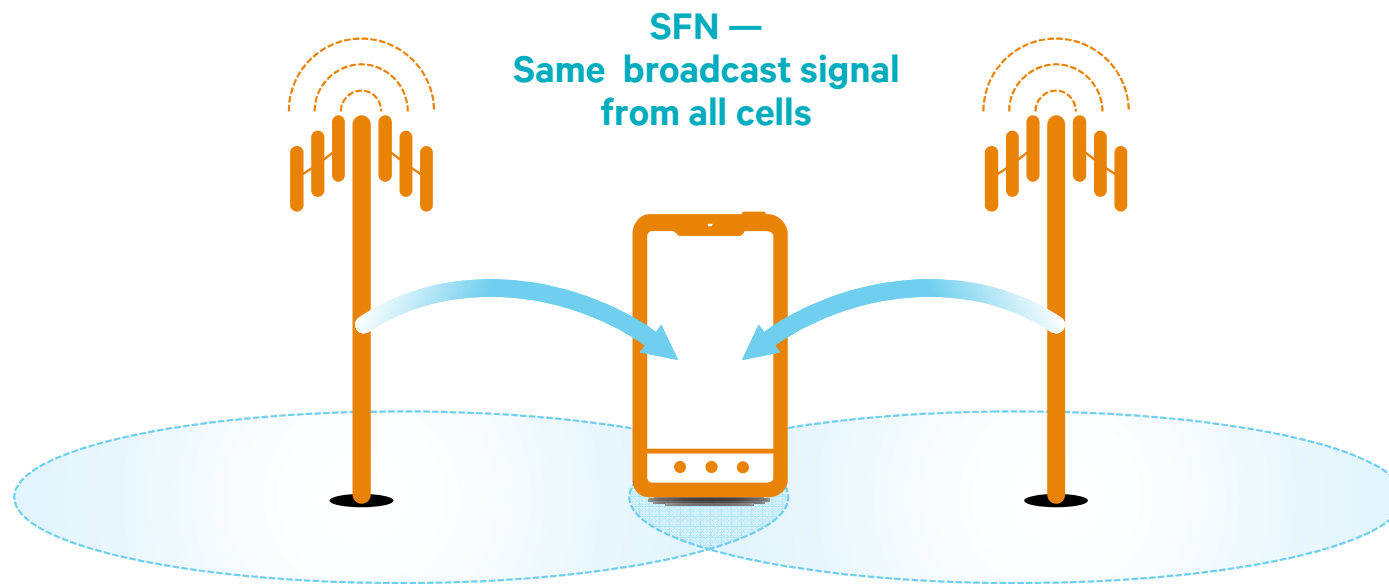
- Higher user antenna height enables coverage even with ‘low’ site density



Requirement 3: support Free-to-air



Requirement 4: support nationwide SFN



More consistent user experience

The whole network behaves as a “single cell” – no interference

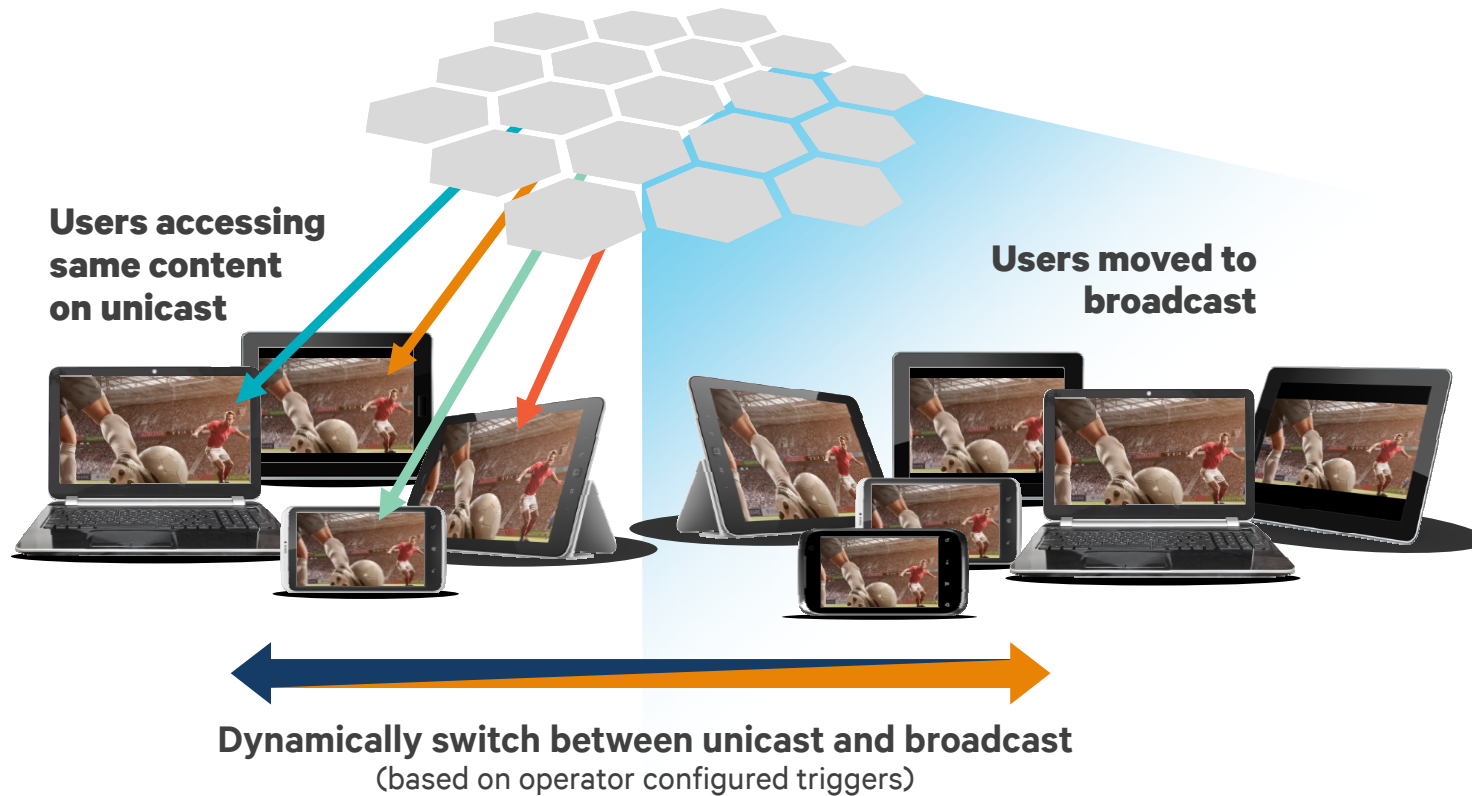
Better cell-edge performance

By combining same broadcast signal from multiple cells at cell-edge

Higher overall efficiency

Cell-edge performance dictates network design and efficiency

Nice to have: Dynamic switching / broadcast on demand



Demand or event driven

- Based on demand, e.g. breaking news
- Pre-scheduled, e.g. at stadiums during games

Seamless transition

- Make-before-break connection
- Fully transparent to users

Part of LTE Broadcast Rel. 12

- Known as MoD (MBMS operation on Demand)

To do list for SDOs

- SDL
- Low Power Low Tower
- Extended CP
- Advanced network planning + Fixed rooftop reception at SFN borders
- Dedicated broadcast carrier
- Free to air
- MBMS operation on Demand (MooD)
- DASH (or any system that can combine unicast and broadcast)
- TV service layer
- Billing platform

Thank you

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