



A Strategy for Mobile and Broadcast Services: Working together to meet consumers' needs in a sustainable way

Graham Mills

Chairman, DVB Commercial Module

6th May 2015

What is the role of wireless distribution in the future media landscape?

- Let's take a strategic view of the future media landscape: -
 - From my perspective as a Telco 'insider' that understands broadcasting ...



- Current strategies of both the broadcasters and mobile operators have served us well, but they will not be 'fit for purpose' to meet consumers' needs through the 2020s.
- "We can only meet the mobile and broadcast needs of our customers, in a sustainable and profitable way, by working together to deliver strategic solutions for wireless distribution."

How will the market place evolve?

Three fundamental trends will drive convergence in our two sectors:

1. Annual growth in mobile data (57% Cisco VNI), primarily driven by TV and video content, is likely to be sustained well into the 2020's
 2. Consumers will continue to value terrestrial broadcast TV, thriving in many countries to 2030 and beyond; HD will become the baseline and more services including UHD/HDR will be added
 3. In-home, more and more services will be distributed wirelessly through smart hubs linked to fixed or mobile networks using a combination of Wi-Fi and 4G/5G or DTT repeaters.
- The broadcasters' challenge is to reach all their users on personal devices, in-home and on-the-move over fixed and mobile broadband as well as broadcast networks
 - For mobile operators it's a capex challenge - to meet user demand, delivering much more content at substantially lower unit costs i.e. 1,000x less per GB by 2030



Cisco VNI 2015

**Both challenges have a similar set of potential solutions.
Why wouldn't we work together to deliver them?**

What strategies will need to be implemented?

Some elements of the mobile sector's strategies are not sustainable:

- Seeking ever more spectrum from existing users of UHF broadcast spectrum
- Predominantly using unicast to deliver TV / video content over mobile broadband
- Business models and standards to deliver broadcast / multicast content over MNO's dedicated spectrum only to their own customers i.e. duplicated multi-cast delivery

Elements of terrestrial broadcasters' strategies are also flawed:

- Not adopting optimal new technology and standards fast enough e.g. DVB-T2 / HD
- Slow response to consumers' use of hand-held devices to view TV and video content

The strategy for 2020 onwards could adopt:

Multi-cast and caching in mobile devices (and/or local hubs), in place of unicast delivery of popular content

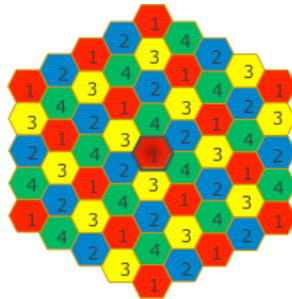
Home hub repeaters for DTT and 4G/5G services - better in-home coverage

Enhanced global standards: 5G to use the very best from DVB and 3GPP?

Regulatory changes and revised standards to enable MNOs to share capacity

What could broadcasters do better?

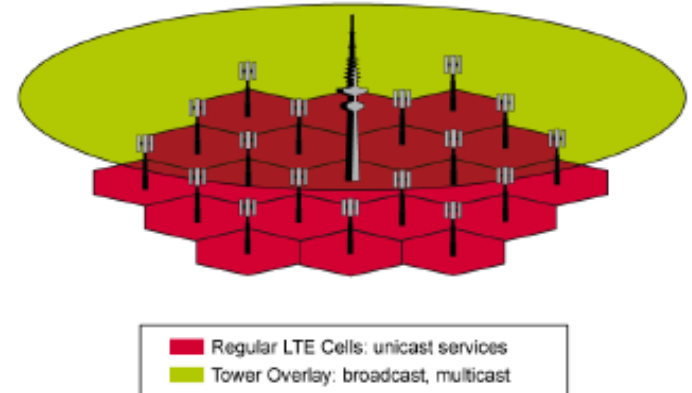
- DTT still uses planning rules and techniques from the analogue era
 - Up to 7 UHF frequencies used to broadcast a single DTT multiplex
 - Only 4 UHF frequencies required for Multi-Frequency Networks, and just one for Single Frequency Networks



- Legacy technologies are promoted for far too long e.g. DVB-T / MPEG2
 - Why are TV sets still being sold today without DVB-T2 tuners and MPEG4?
 - Standard definition and HD services are simulcast without a planned SD end-date
- TV channels with low viewing figures (long tail) could be delivered by other means, enabling DTT to go 'All HD', embracing UHD and HDR too
 - Other delivery networks could be cheaper per viewer for long tail content, freeing-up valuable spectrum to enable DTT to do what it does so well ...
 - DTT free-to-air mainstream TV is loved by viewers, its audiences are valued by broadcasters and it's 'socially inclusive' so it's strongly defended by politicians

What could mobile operators do better?

- Use existing mobile spectrum much more efficiently
 - Design and build networks for asymmetric, multi-cast data services
 - Consider multi-cast / overlay techniques
 - Use low towers for 2-way symmetric services
 - Use large 'overlay' sites for multi-cast delivery



- Plan for 50%+ annual growth in mobile data for the next 5, 10 or 15 years
 - Demand could be 10x by 2020, 100x by 2025 and 1,000x larger by 2030!
 - Additional sites, smaller cells sizes and buying more spectrum are costly solutions
 - Popular TV and video content is the main driver of growth, therefore ...
 - Better options for delivery over mobile data networks could be: -
 - Multi-cast delivery, using shared capacity between MNOs
 - Device caching, with 1TB device memory as Moore's Law drives down its cost
 - Enhanced modulation techniques, using the best of DVB and 3GPP's know-how
 - Roof top aerials and in-home 4G / 5G repeaters, to boost S/N and reduce spectrum

What might the solutions be to our shared challenges?

Let's look at the overall overall picture to understand each others' position – the opportunities, barriers to overcome and 'no-go' areas

There's always resistance to radical change, so let's start by building confidence and taking 'baby steps' now. Where will we be by 2020?

1. **Handsets:** Grasp the 'device cache' opportunity, validate the benefits, define new business models and technical solutions e.g. built-in cache or SD sockets
2. **Compelling consumer propositions:** What frustrates users now and what will 'wow' them in future e.g. no video buffering and all-you-can eat content?
 1. **DRM:** Simple-to-use, unobtrusive content access, under providers' control
 1. **Defined / agreed business models:** e.g. for revenue from advertising
 1. **Software innovation:** Let's build predictive tools to cache the content each user values, profiling and clustering users with similar needs and behaviours
 1. **Regulators and International Agreements:** let's take a global approach to standards for air interfaces, handset capabilities and spectrum enablers

Let's work together to meet consumers' future media needs

Call to Action:

- The mobile industry, led by MNOs, and the broadcast industry could work much more collaboratively with each other
- Let's apply the best and most innovative ideas from each sector to better meet the needs of consumers
- Let's make optimal use of the available spectrum for broadcasting and mobile applications

• Current strategies of both the broadcasters and mobile operators have served us well, but they will not be 'fit for purpose' to meet consumers' needs through the 2020s.

• "We can only meet the mobile and broadcast needs of our customers, in a sustainable and profitable way, by working together to deliver strategic solutions for wireless distribution."