



What is a “Broadcast Overlay”, and why does it make sense?

Television and Content Today

Using a high power/high tower broadcast infrastructure, today’s television Broadcaster business focus is on the distribution of content ‘most desired’ by a consuming public over a broad area of coverage. Local television stations produce and distribute such content (news, weather, sports, traffic, community events/services, emergency information, etc.), and it is the basis of today’s television ‘mass market’. Clearly, television has become an important part of everyday American life.

There are also other opportunities that can uniquely leverage the infrastructure of a fully capable future broadcast platform. When you take the time and effort to focus a degree of effort on the analysis and categorization of content that comprises the IP data traffic on today’s wireless carrier unicast networks, you find that a huge amount of IP traffic could be ‘off loaded’ from the wireless carriers if there was an effective broadcast ‘off-load’ mechanism. Bringing these observations together, it becomes somewhat evident that it is possible to make effective use of a broadcast infrastructure to match the distribution needs identified as “Unicast Equivalent” point-to-multipoint data traffic. Such an overlay can be designed to be fully complimentary to existing and future wireless LTE networks, which then becomes an extension on the ‘down-link-only’ side of an integrated unicast network.

Is There a Better Solution?

When one looks at the opportunities (business and technical) for the building out of a “Broadcast Overlay”, it becomes immediately evident that the UHF television broadcast infrastructure is the perfect starting point. The UHF spectrum is most important because of propagation characteristics ideally suited for covering medium distances, and an ability to provide effective penetration of typical buildings. The television broadcast infrastructure of today (**FIGURE1**) is effective and efficient because of the tall towers and high ERP’s (effective radiated power).

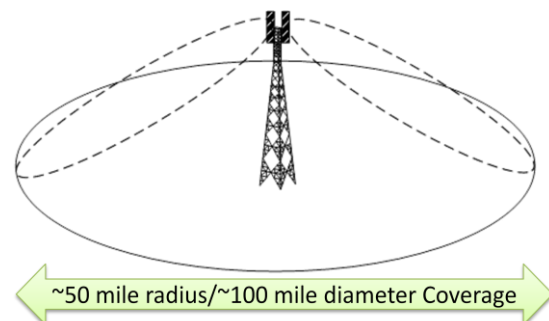


Figure 1 - Today's Broadcast High Tower Coverage

An evolution of our infrastructure's topology, with new and future standards moving towards a "single frequency network" (SFN) architecture (**FIGURE2**) over time, will provide for a higher QoS by providing of a more uniform 'saturation' of signal levels throughout a stations coverage area with 'high power/high towers'¹ as the starting elements. Depending on terrain and other conditions, some areas may be better served with a higher QoS by adding a 'handful' of additional low to mid-power repeaters within an SFN. Having said that, current UHF deployments of Mobile DTV make clear an adequate service area is available for a large percentage of consumers in any given market today² based on a single high power/high tower facility.

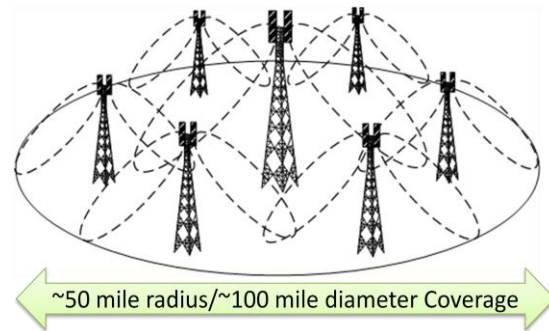


Figure 2 - Tomorrow's "SFN" Architecture extends the Core of a future "Broadcast Overlay" Network

The industry's current activities aimed at identifying the futures needs of a "Next Generation" DTV standard, known as ATSC³ 3.0, provides a good backdrop and place for discussion to move the "Broadcast Overlay" plan forward within the television broadcast community and the development of a new, future standard. The understanding of the need to develop a 'Next Gen' standard has gained traction and support, and there has been an engagement of industry manufacturers that are directly involved in the wireless carrier provisioning supply chain. There are also efforts underway to set a global framework for harmonization, with the global "Future of Broadcast Television" summit which was hosted in Shanghai November 10-11 of this year⁴. While regulatory and technical issues remain, if the FCC remains open to engage the broadcast television industry as a central component of any future innovation. The regulatory and technical issues should not be presented as major hurdles if the Broadcast industry engages in such future seeking efforts.

When the SFN broadcast environment of tomorrow is designed with the intended purpose of being an extension of the wireless carrier's unicast network, the end result provides for the most efficient distribution of both unicast and multicast/broadcast content. This combined network topology could unload from the unicast network the high bandwidth content (which today is largely mobile video) that today 'chokes' the capacity to service the other intended one-to-one capabilities (voice calls for example)of the wireless carriers. Such integration with a broader vision of wireless opportunities envisions the high bandwidth content being handed over from the unicast network (or directed to) to distribution across the "Broadcast Overlay".

How Do We Drive Revenues?

It is clear that an alternative, effective and more efficient means to deliver mobile data/bits positions the Broadcast industry at center stage to explore the possibilities for huge and transformational future economic values and services to be created and shared with the U.S. Treasury through the framework of the existing 5% ancillary fee. A "Broadcast Overlay" could provide the framework for new visions which can be realized in opportunities to develop a new competitive landscape in wireless delivery. For

¹ Relative to the typical tens of watts and 50-100 foot towers of the wireless carrier infrastructure.

² Planning Factors (Link Budget), ATSC Mobile DTV, Whitepaper - Rohde & Schwarz, <http://bit.ly/srg528>

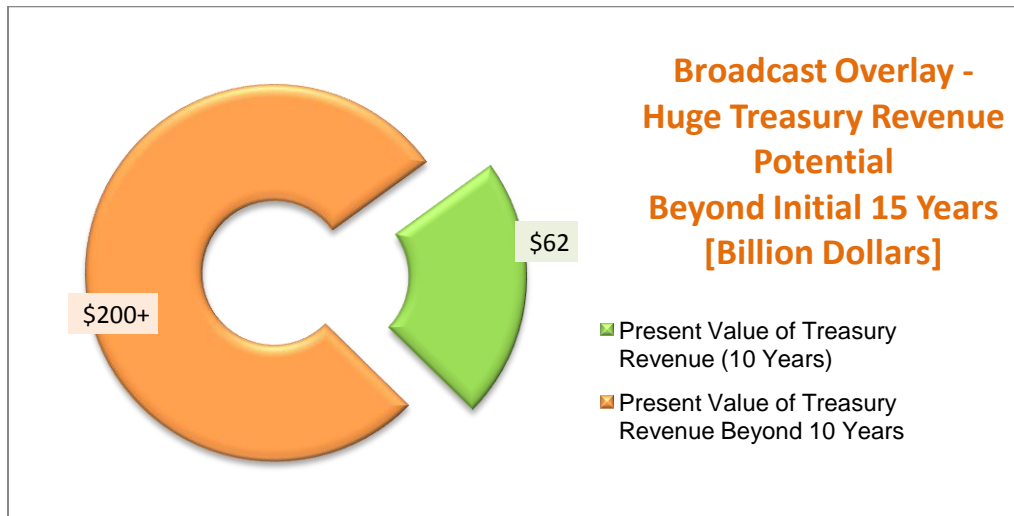
³ ATSC (Advanced Television Systems Committee) is a standards body for television broadcast standards, <http://www.atsc.org>

⁴ Advanced Television Systems Committee Endorses Declaration from Future of Broadcast TV Summit, <http://bit.ly/twLNUp>

example, the development of a shared ‘collaborative’ extension to future LTE networks provides possibilities for Broadcasters to ‘white label’ broad data-delivery capacities to a number of existing and new industries and entities, as well as expanding the competitive nature of the mobile industry. It positions the Broadcast Industry with new means to access virtually every ‘wirelessly connected’ device with new services and content offerings based on future extensions of global 3GPP wireless standards and the wireless carrier’s infrastructure topology (one-to-many broadcast AND one-to-one unicast) on a common LTE capable platform.

Broadcasters should be open to bringing all parties and stakeholders to the table to discuss, define and deploy a future-proof network that provides real value to America. That value is driven by the extensible and scalable opportunities that exist within the already defined “Broadcast Television Spectrum”. A plan of this nature is a real ‘jobs’ plan. The techno-business economics analysis⁵ that was recently finished by Rajiv Hazaray of “Business-Analytix”⁶ lays out the revenue opportunities of this executable plan. Based on revenue analysis alone, and applying the current 5% ancillary services fee on such revenues, it is projected that \$40 Billion in U.S. Treasury revenues can be delivered within 10 years of launching the plans primary infrastructure. That same analysis projects, assuming a 3 year period to execute on the plan, ~\$62 Billion can be delivered to the U.S. Treasury 15 years from the start - 5% of \$1.25 Trillion in gross revenues! Over the life of the plan some \$200+Billion of net U.S. Treasury revenues are delivered via the 5% ancillary fee. In addition to raising significantly more money, increasing competition and providing new choices for the American public, there will be true job creation.

Having said all of this, perhaps the biggest bonus to the American public will be that we will continue to offer entertainment, news and information to the public through thousands of television stations and stimulate a more competitive mobile environment. High power, low power and translator services will evolve over time to offer more and better services to a population that places local television first as their ‘must have’ wireless service.



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⁵ SBGI, The Broadcast Overlay Report, <http://bit.ly/uY8y2Y>

⁶ <http://www.business-analytix.com/>