



## In This Issue | December 2015

Mexico's TV Revolution—Delayed or Derailed? page 1

Why Repacking Spectrum is an Old Fashioned Job page 2

HEVC – Can OLED Challenge LCD LED for UHD Supremacy? page 3

## Mexico's TV Revolution Delayed or Derailed?

***"We choose to go to the moon in this decade and do the other things, not because they are easy, but because they are hard."*** - John F. Kennedy, 1962

As Kennedy reminded the world in 1962, it's important to set goals and even more important to set difficult ones. The Mexican government set itself its own difficult goal at the start of 2015 and while it wasn't quite as lofty as a moon landing, it was still a moonshot of sorts. The goal was to supply close to 10 million digital TV sets at a cost of \$1.6 billion to low income households in a single year during the course of shutting down analog TV transmissions, which is occurring on a city-by-city basis and scheduled to culminate in December, 2015.

And while the U.S. made good on Kennedy's ambition to land a man on the moon and return him safely back to Earth, it's far less clear whether Mexico will be able to seal the deal on its transition.

With the deadline to shut off analog broadcasts less than a month away as of this writing, Mexico still faces serious hurdles to meeting the self-imposed goal of ensuring that 90 percent of households have access to digital TV signals. By its own estimation, the Secretaría de Comunicaciones y Transportes (SCT) claims to have delivered 6.5 million DTT-ready TVs and set-top boxes (STB) to low-income families and maintains that it will hand out over three million more before the end of December. The head of the Secretariat for Social Development (SEDESOL) also insists the December deadline will be met.

That seems optimistic, to put it mildly.

Depending on which media report you trust, the government still needs to distribute as many as 4 million of the promised 10 million TV sets. McLatchy noted that the current pace of TV distribution—an already staggering 30,000-40,000 TV sets a day—would have to double in order for the government to meet the 10 million goal.

No surprise, then, that Mexico's opposition party, the National Action Party, has requested a delay in the transition—punting the final date to 2016. To secure a delay, however, would mean amending the Mexican constitution, which enshrined the ASO date as part of a set of sweeping telecommunication reforms in 2013. It's a very fluid situation, but given the immense logistical hurdles involved, a delay would come as no surprise to industry observers.

A delay in the final analog shut off wouldn't be the only blow to Mexico's telecom reforms, either. Mexican regulators had auctioned off licenses for two new terrestrial TV networks earlier this year in an effort to smash the long-standing

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broadcast duopoly of Televisa and TV Azteca, only to have one of its two bid-winners, Grupo Radio Central, lose its license this Spring after failing to pay its bid. The frequencies Radio Central won are now slated to be auctioned off again, this time in the first quarter of 2016. Another government auction for satellite orbital positions failed outright due to a lack of bidders.

Does this mean Mexico's reforms are floundering? Not entirely. In fact, pressure from telecom regulators on the communications side has pushed landline and mobile powerhouse America Movil into seeking licenses to enter Mexico's pay TV market (something it has been barred from doing for years). With pay TV penetration at just 51 percent of Mexican households and fixed broadband at a mere 11.6 percent, there is plenty of opportunity for new players to take share and ample headroom for growth. Even with the low broadband penetration, Mexico represents a major source of streaming activity for Netflix—it's the company's second largest Latin American market after Brazil. Thanks to the 2013 reforms, foreign investors can own larger stakes, up to 49 percent, in TV broadcasters, which should incentivize foreign capital as the market diversifies.

Despite the setbacks, it's too early to write off Mexico's nascent telecommunications reforms, even if the final analog shut off date slips into 2016.

## DTC Conducts Extensive Study on TV Spectrum Repack

DTC conducted an extensive repack transition study, laying out a blueprint for what it will take for hundreds of broadcasters to move to new channel assignments. DTC's research concludes it may take up to 11 years and cost \$2-\$3 billion. The U.S. terrestrial TV industry is embarking on a complicated and expensive transition as many broadcasters will move to new channel assignments after the TV spectrum auction is complete.

Our DTV Transition team is uniquely prepared to help broadcasters, MVPDs and mobile carriers design and implement transition plans.

Call 214.915.0930 ext. 1 for more information on how DTC can help your business.

## Why Repacking Spectrum is an Old Fashioned Job

Despite communications and processor technology advancements, wireless communications continue to travel over the same electromagnetic spectrum that they have since the dawn of radio communications.

No matter how advanced the technology of smartphones and smart TVs, the laws of physics that govern those signal transmissions have not changed. There has been significant advancement for more efficient use of the spectrum, but not enough to keep up with the insatiable demand for "desirable spectrum" in many parts of the world.

Scarcity, of course, results in an old-fashioned problem: Who gets to use the desired resource? For the communications spectrum, governments and policy makers have the difficult job of forming spectrum policy that results in the choosing of users. And since new communications applications still rely on the same old spectrum, some of the incumbent users may have to leave or move to another part of the band to make room for new users or existing users who want more spectrum.

Moving is arduous and expensive. The new tenants can't set up housekeeping until the old tenants move to their new homes. In the case of the upcoming U.S. spectrum auction in the UHF TV band, there may be as many as 800 to 1,200 tenants trying to move at the same time—causing significant congestion as they compete for resources. *DTC recently completed a study* that outlines, in detail, the process for hundreds of U.S. TV broadcasters to move to new channel assignments in a concentrated period of time.

In simplistic terms, a U.S. UHF TV broadcaster moving to a new slice of 6 MHz of spectrum must plan, engineer, install and test new equipment, and possibly modify towers before vacating the old "neighborhood" and moving into the new one. This must be done at the same time as hundreds of peers are doing the same and competing for the same "moving resources." Although TV broadcasters in other countries have slightly different technical criteria in accordance with specific transmission standards and spectrum policy, the basic steps are the same. More importantly, in many parts of the world, broadcast service and equipment suppliers have cut capacity significantly (or gone out of business) once a nationwide transition from analog-to-digital TV was completed. This shortage of resources is making it difficult for new spectrum users—mostly wireless service providers—to set up on their new real estate.

The upcoming U.S. TV spectrum repack is an instructive case in point. U.S. regulators managing the complicated incentive spectrum auction and subsequent repack may have miscalculated the time needed to accomplish the move.

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With only two U.S. industry-accepted antenna manufacturers remaining in the market and a shortage of qualified crews to install and uninstall heavy antennas on mostly 800-plus-foot towers, moving all of the stations to new channel assignments will take many years.

In today's evolving tech landscape, consumers have been conditioned to expect improvements to services and devices on a constant (and near immediate) basis. Yet, the putting in place of old-fashioned infrastructure to make room for more wireless spectrum requires customized equipment, and highly-skilled labor. And when infrastructure changes are ordered and managed by government mandate, all parties involved will simply be forced to slow down.

## HEVC - Can OLED Challenge LCD LED for UHD Supremacy?

The big players in the TV business want to sell high-end, high-margin TVs. LED LCD 4K sets are today's blue-ribbon offerings. But, what is next and how will the next high-quality display technology impact the overall TV market?

Panasonic surprised attendees in September when it unveiled its first OLED UHD TV at the IFA show in Berlin with a probable price tag of about €9999. LG, however, has led the field by offering OLED UHD sets the last few of years. Changhong, Konka and Skyworth have been selling OLED premium models in China since the beginning of the year.

LG's and Panasonic's OLED introductions won't make much of an immediate impact in an expanding UHD world dominated by LED LCD sets. In 2015, we estimate that OLED UHDs will total no more than around 125,000 units sold worldwide.

But given its superior quality and ergonomic advantages, could OLED challenge current LCD UHD supremacy?

### **OLED Pros**

As both are remissive technologies, OLED has similar quality advantages over LCD as plasma did. As a result of its ability to turn on/off individual pixels, OLED's absolute black levels and resulting contrast ratio are nearly off the charts. OLED also needs no special filters such as quantum dot to provide the wider color gamut necessary for HDR.

Consumers have never favored one technology over another based purely on quality.

At just a pencil-4mm thin at their edges, OLED seems to offer an ergonomic advantage over LCD. Unfortunately, LG has minimized its skinny advantage by inexplicably curving its OLEDs and making them fat again. The company now recognizes OLED's slim benefits, making its latest EF9500 sets standard flat.

More intriguing and potentially game-changing ergonomically, LG has been showing off "wallpaper" OLED – 55-inch 1080p TVs that are a bendable .9mm thin. Should the company be able to perfect and commercialize a bendable set – well, the term "game over" springs to mind. The radical nature of wallpaper TV would raise OLED's cool factor several geometric degrees above any technology this century.

But wallpaper TV is likely at least five years from commercialization.

### **OLED Cons**

Right now, OLED's major roadblock to any level of success, much less challenging LCD, is price, both wholesale and retail.

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On the popular-brand retail side, LCD UHDs sell from about \$1,500 to \$3,000. LG's 65-inch EF9500 flagship OLED, however, is priced at \$5,000. But LG is rapidly bringing the price down as the original price was \$7,000. If LG continues to be this aggressive on reaching price parity with LCD, LG OLEDs could reach price parity with LCD UHD sooner than later.

What stops other OLED vendors getting into the market is LG's proprietary manufacturing process. Based on patents it bought from OLED's inventor Kodak, LG has become the world's only successful manufacturer of big screen OLED – it supplies the panels to all the aforementioned OLED UHD vendors. But OLED manufacturing is still an expensive proposition; OLED panels LG sells to other vendors are twice as expensive – around \$1,100 – than quantum dot LCD panels.

This extreme price differential places potential OLED vendors not only at a disadvantage in the overall UHD market, but against LG in the OLED market as well. Anyone who enters the OLED UHD market has to do so with a premium model as Panasonic and the Chinese vendors have done.

### **Who's in for OLED?**

Panasonic's OLED entry creates competitive conversation in Western markets, and makes it appear that Panasonic is independently entering the OLED market rather than being an LG OEM client.

But LG is smart to share its OLED technology with Panasonic and the Chinese UHD makers. A single seller of a singular technology is viewed suspiciously by buyers worried about being stuck with an expensive artifact. Panasonic's high-profile entry will legitimize OLED in the eyes of both consumers and the industry in the U.S. and Western Europe.

While two OLED vendors are nice, it's hardly a convincing crowd. More OLED vendors are needed if the technology is to find fertile footing outside China. But what other TV vendor might join LG and Panasonic in hawking OLED?

It certainly won't be LG's Korean bête noire Samsung, nor Sony, which traditionally doesn't sell a product that it doesn't invent. In the U.S., pricey OLED runs counter to Vizio's high-value story. While it is unlikely that competitive challenges will stop Chinese brands from bringing their OLED UHDs to Western markets, such as TP Vision, maker of Philips' LCD UHDs, are a possibility.

While fascinating technologically, it appears the only way OLED can become a force in the UHD market is – well, who wouldn't want wallpaper TV?