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Insider News. Outsider Views.

ARRIS Makes the Case for 4K with New STBs

-Predicts First Shipments Early Next Year

Significance: Netflix CEO Reed Hastings says OTT will be the first to deliver 4K content to audiences in their living rooms, but pay TV providers such as Comcast won't be far behind, especially now that ARRIS – maker of Comcast's X1 STBs – will be making 4K-capable boxes. Pay TV providers have more incentive to adopt these next-generation STBs because of HEVC, which can radically improve delivery of all video, and will ensure homes are future-proof for the oncoming 4K phenomenon.

ARRIS is heading over to the 4K camp. Its CTO of consumer premise technology, Charles Cheevers, said ARRIS will have a line-up of 4K-capable set-top boxes and streaming media dongles next year.

ARRIS is one of the biggest set-top box makers in the world, along with Pace, Cisco

and Technicolor. Of those, Technicolor demo'd last year a 4K STB with Sky Deutschland, but it didn't have HDMI 2.0, so it doesn't support 60 frames per second (fps) rates. 4K content can be delivered to TVs using HDMI 1.4 but at slower frame rates.

At The Cable Show last year, Comcast had a 4K demo that used an ARRIS box. We assume the new 4K-capable ARRIS box will support HDMI 2.0 and HEVC. ARRIS has already said it is working on a range of devices with HEVC built in. Cheevers didn't say who the chipmaker is, but it's probably Broadcom's 4Kp60 BCM7445 chip, which was also part of the Comcast 4K demo.

Cheevers told *Digital TV Europe* that ARRIS will demo its 4K STB at IBC this fall. It said it hasn't started building them yet because the chips ARRIS wants to use in the box won't be

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It's Cellcos Versus TV Broadcasters in the Mobile TV Market

-Wi-Fi & LTE-Advanced also to Play an Important Role

Viewing videos on mobile devices is growing quickly in popularity — via both free Wi-Fi and for-pay cellular. Already the cellcos' charges for data have increased to over 50% of their revenue in seven countries including the US, confirming the belief that talk and text are now mere commodities.

There appear to be five technologies that will compete for the mobile video market, each with different strengths and weaknesses.

Two are broadband capable:

-LTE-Advanced (LTE-A), the next generation of LTE that's already in field tests, will offer broadband speeds up to a theoretical 300 Mbps. Users that are connected to the same LTE-A cell will share the available bandwidth much as cable TV

subscribers share bandwidth. Cellcos can add additional cells as usage increases. Subscribers can use it to stream videos from various OTT services whenever they like. LTE-A requires cellcos to upgrade their networks and subscribers to buy new smartphones and tablets.

-Wi-Fi is being deployed by cablecos, telcos and cellcos in archipelagos of hotspot networks. Its biggest disadvantage is that it's not mobile (nomadic in cellular terms). Rather, it's intended for stationary devices.

The others three are broadcast specific technologies:

-LTE Broadcast, much like local TV stations, broadcasts one or more streams (channels) to all devices within its reach. It is not a two-way broadband network. Viewers do not get to pick what they want

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“These features can be deployed individually in a phased approach that creates a smooth transition from HDTV to UHD TV.”

“12 owners of local TV stations in the States are using to broadcast existing local and specialty TV channels.”

ARRIS: *continued from page ONE*

available until next month. Cheevers expects the first slate of devices to ship in the first half of next year.

We think its first customers will be Comcast in the US, which helped ARRIS acquire the set-top box division of **Motorola Mobility**.

ARRIS Says There Are Immediate Benefits to 4K

In a white paper ARRIS released in 2013, the company suggested pay TV providers and content owners should begin the transition to 4K TV (UHDTV) sooner rather than later. “In a few years we’ll hit a tipping point when there is a significant population of 4K TVs, and programmers will have an audience of viewers who can receive a signal in higher quality than conventional HD, especially for highly produced sporting events,” ARRIS said. “At that point, 4K will become the new normal.”

Pay TV providers should take a “pay as you grow” approach to infrastructure deployment. “Deploying UHDTV is not an all or nothing proposition,” ARRIS said. “The attributes of resolution, frame rate and color space can be implemented individually and incrementally based on consumer demand and network capacity.”

In the meantime, pay TV providers, content owners and device makers should begin integrating HEVC into their systems, “By following a phased,

practical path to UHDTV deployment that leverages the immediate benefits of HEVC, service providers can increase the quality of experience for consumers in a way that meets demand without a costly network build out,” ARRIS said.

Broadcom’s 4Kp60 STB chip, for example, can simultaneously transcode up to four streams of 1080p at 30fps, which would be beneficial to a service provider with or without 4K content.

The phenomenon of UHD is more than just 4K pixels, but has a number of attributes that help deliver “the wow factor,” such as faster frame rates and enhanced color gamuts. “These features can be deployed individually in a phased approach that creates a smooth transition from HDTV to UHDTV in support of consumer demand and real revenue,” ARRIS said in the paper.

ARRIS said in the paper a few obstacles remain for 4K. “The video delivery industry must rally around standards that truly enable the breathtaking promise of UHDTV,” ARRIS said. “That means adding specifications for an extended dynamic range to enable high contrast and brightness that extends the performance of TVs beyond the limits of today’s standards. It means creating content with increased frame rates, and perfecting televisions that utilize UHDTV’s enhanced color gamut.”

It’s Cellcos: *continued from page ONE*

to see and when. One twist that’s proposed is for LTE broadcasters to download shows at night for storage in the device so they can be watched when the viewer chooses.

-DYLE is the ATSC M/H technology that 12 owners of local TV stations in the States are using to broadcast existing local and specialty TV channels to DYLE-capable mobile devices and dongles. Like LTE Broadcast, DYLE is not two-way broadband. Backing DYLE is the Mobile Content Venture (MCV), an association of owners of local TV stations — **Fox (21st Century Fox)**, **NBC (Comcast)**, **ION** and the Pearl Mobile DTB group, which includes **Belo**, **Cox Media Group**, **EW Scripps**, **Gannett Broadcasting**, **Hearst**,

Media General, **Meredith**, Post-Newsweek Stations and **Raycom Media**. A number of DYLE-compatible devices and a DYLE adapter for the iPad and Kindle Fire tablets are available.

- DVB-T2 will be used by over-the-air broadcasters to compete against LTE Broadcast in Europe and parts of Asia but not including China.

So, the lineup looks like this.

Wi-Fi hotspots

Although not a mobile TV technology, consumers can use it for watching videos whenever they’re near an accessible Wi-Fi hotspot that pay TV companies and cellcos are deploying.

LTE Advanced

Cellcos will offer it for its increased mobile broadband speed, which will allow subscribers to

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watch more and higher-resolution videos from all OTT services — and whenever they wish.

LTE Broadcast

Backed by Verizon, AT&T and other cellcos that want to broadcast multiple streams of live videos over their proprietary cellular networks.

DYLE ATSC M/H

US TV stations, which are already broadcasting their traditional live TV channels as well as specialty channels.

DVB-T2

OTA broadcasters in Europe will use it.

Other Mobile TV Players

There are other mobile TV technology contenders. -DVB-H (Digital Video Broadcast to Handheld), which was adopted by the **European Telecommunications Standards Institute** in November 2004, has died off after a few commercial launches in Europe. The exception is in Africa where the company **Multichoice** offers its DStv-branded DVB-H services in Ghana, Kenya, Namibia, Nigeria, South Africa, Tanzania, Uganda and Zambia. The rate of TV ownership in those countries is low and the home's electrical

power often balky.

-Digital Multimedia Broadcasting (DMB) was developed in South Korea, where it is mainly used to send TV, radio and data to mobile phones, laptops and GPS units.

-**Qualcomm's** proprietary MediaFLO system which failed despite the efforts of AT&T and Verizon Wireless AT&T subsequently acquired the MediaFLO spectrum from Qualcomm and has said it plans to use the spectrum for LTE Broadcast.

Telenor Sells Conax to Kudelski

Norway-based and multi-country telecoms operator **Telenor** has sold Conax, which provides encryption and content security for digital TV, to Switzerland's **Kudelski**, for 1.5 billion Norwegian crowns (\$248 million). Telenor said it intends to focus on its core business of telecoms.

Kudelski provides security technology for digital TV, broadband and mobile devices.

The Telenor Group, headquartered near Oslo, is one of the world's largest cellcos with operations in Scandinavia, Eastern Europe and Asia. It offers broadband, pay TV and telephony in the four Nordic countries. It also owns 33% of **VimpelCom**.

4K

Broadcom Delivers 4K & HEVC SoCs

Broadcom is reportedly the first to have developed SoCs for 4K and HEVC, two technologies that seem joined at the hip because of the amount of bandwidth that 4K requires. HEVC (the H.265 compression/decompression technology) halves the amount of bandwidth that any video uses. It's especially useful for 4K because 4K by definition has four times as much data as 1080p.

4K & Its Companion HDMI 2.0 Are in the New Pioneer Home Theater Receivers

4K and the HDMI 2.0 technology it requires are beginning to impact makers of equipment other than TVs and set-top boxes.

HDMI 2.0 is in **Pioneer's** newest home theater receivers, which have 4K pass-through at up to 60fps (frames per second) — courtesy of HDMI 2.0, 3D and one HDMI input that is MHL-enabled (Mobile High-Definition Link). MHL allows the connection of MHL-capable devices such as smartphones and tablets, as well as the MHL-version of the **Roku** Streaming Stick. MHL 3.0 supports mobile devices with resolutions of up to 4K and 7.1 surround-sound audio, including TrueHD and DTS-HD. It simultaneously charges the connected device.

The five new Pioneer models are: VSX-824-K, VSX-1024-K, VSX-1124-K, Elite VSX-44 and Elite VSX-80. Pioneer Electronics said they'd be available at the end of March but on March 27 neither **Amazon** nor **Best Buy** offered them. Prices were not provided.

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"HDMI 2.0 is in Pioneer's newest home theater receivers."

"Available at the end of March, but..."

“The VSX-1124-K and Elite VSX-80 include 1080p and 4K video upscaling.”

“Five Hollywood movies and three documentaries are available on a 1TB hard drive that retails at a surprising \$300.”

4K

4K: *continued from page THREE*

They have an Audio Return Channel and standby pass-through, which allows audio and video signals connected via HDMI to pass through the receiver even when the receiver is in standby mode.

The VSX-1124-K and Elite VSX-80 include 1080p and 4K video upscaling and two HDMI outputs, which allows an additional HDMI source to be accessible in a second zone.

All five provide **Dolby** TrueHD/DTS-HD Master Audio decoding. The VSX-1024-K, 1124-K, and Elite VSX-80 add Dolby ProLogic IIz processing. The VSX-1124-K and Elite VSX-80 both offer a 7.1 channel version of DTS Neo:X processing.

Pioneer’s MCACC technology is included in all models for calibration of speaker levels and speaker distances using a supplied microphone and built-in tone generator.

As do many other home theater receivers, all five support access to Internet radio, iTunes, and **Apple** AirPlay plus can access media files stored on DLNA compatible PCs and media servers.

Front-mounted USB connections can be used for iPods, iPhones and iPads.

In addition to the Pioneer remote, operation is available via iPhone/iPad and some Android devices.

Alas, for lovers of vinyl LP records, there is no phono input to connect the beloved phonograph.

Samsung Releases New 4K TVs and a Hard Drive with 4K Movies Preloaded

Among **Samsung’s** recently unveiled home entertainment lineup for this year, is a handful of new high-end 4K TV sets and what Samsung is calling a “video pack” with a handful of 4K movies to watch on the sets.

The new TV sets include a curved UHD 4K TV, set to be released next month. The 55-inch model will cost \$3,999.99, the 65-inch model \$4,999.99, and the 78-inch model will be released later this year for \$7,999.99.

The video pack includes a 1TB hard drive filled with

five Hollywood movies and three documentaries, and will retail at a surprising \$300. The video pack will be released next month, and Samsung said it will offer another video pack later this year.

Frankly, the price doesn’t seem at all worth the eight total movies, no matter how many pixels you can (or rather, cannot) see.

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Why 2014 Is the First Year of the 4K UltraHD TV Era

Four things have happened that make 2014 the first year that 4K will be broadly available: new technologies, affordable 4K sets, increasing amount of 4K content and its widespread distribution.

A new 37-page report from Rider Research, publisher of The Online Reporter, contains updated articles about 4K that have been curated and sorted by topic from the last few months’ issues of The Online Reporter.

The report clearly shows how much momentum 4K has gathered.

For an extract, table of contents and prices, please email paperboy@riderresearch.com.



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“The Apple talks give the world a peak into Comcast’s thinking about the future of broadband.”

“These types of deals are the future for OTT services.”

OTT

Comcast Reveals Its Burgeoning Broadband Empire

-Netflix and Apple Deals Are 2 Sides of the
Same Coin that Comcast Gets to Pocket

While **Netflix** is whining about paying for a more direct connection to **Comcast** subscribers, over public Internet, **Apple** may end up paying to have a completely private connection to subscribers, over non-public Internet. In either scenario, Comcast comes out on top.

The Apple deal is unlikely to come to fruition for a number of reasons, but the leaked talks give the world a peak into Comcast’s thinking about the future of broadband. Why would Comcast agree to give an OTT “disruptor” (either Netflix or Apple) more direct access its pay TV and broadband subscribers? Because it sees its broadband networks are lined with gold, while the pay TV margins are only getting smaller.

We are assuming any such deal between Apple and Comcast will involve Apple paying Comcast to be treated as a “managed service” on Comcast’s broadband network. If Apple doesn’t pay Comcast for such access, than the deal makes very little sense.

Internet’s Future May Be a Fractured Network

Netflix may want to abandon its over the top delivery strategy, and instead focus on being able to deliver the best experience it can. It isn’t just competing with YouTube and Amazon for bandwidth anymore. It’s now competing with a rush of HD videos traveling over the top, coming from a rapidly expanding pool of online video providers. It would behoove Netflix – or any other OTT service provider – to partner with as many broadband providers as it can to get ahead of the HD video stream rush. It could even hop onto a non-public Internet connection, like what Apple is reportedly looking to do. The point here is that these types of deals are the future for OTT services.

Barclays Capital analysts came to this conclusion: “Over time, we believe the Internet is likely to fragment

into multiple managed services with those having the ability to pay (like Apple) seeking preferential access to the last mile. In other words, some of the content from the Internet is likely to seek an alternative, off line path to the home.”

Apple-Comcast Deal Unlikely But...

-Comcast Could Strike a Similar Deal with
Someone Else

The big takeaway from the news that **Apple** and **Comcast** are in talks to form some sort of business relationship is that Comcast is eager to make the most of its broadband networks, perhaps even at the expense of its pay TV service.

The deal, which was widely reported and speculated about this week, is unlikely to happen for the reasons enumerated below. If any such deal did happen, let’s remember that Apple still needs to get content rights to play video over the Internet. If it wants linear live pay TV programming, like **Verizon** and **Sony** supposedly do, it will face the same obstacles: bundled channel carriage packages and expensive content to offer a service that is supposed to be inexpensive.

According to *Wall Street Journal*, Apple wants preferential treatment over the piece of metaphorical pipe between Comcast’s data centers and its subscribers homes, aka the last mile. Of course, it’s not actually a mile, it could be 10 miles, but the point is that it’s the last leg of the journey for the data. This type of relationship, if the deal goes through, is completely different from the deal **Netflix** recently struck with Comcast. Netflix wanted to put its servers in Comcast data centers, for free, via its Open Connect CDN proposition. Instead, Comcast now directly links to Netflix servers in third party data centers, and for a fee. The Netflix is essentially a “first mile” deal.

Comcast, which owns NBCUniversal, isn’t putting much at stake, and stands to reap a lot of reward from deals that resemble what Apple is reportedly talking about. Even if the Apple talks don’t go anywhere,

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“Content remains the largest obstacle for Apple – or any new pay OTT entrant.”

“Apple has a knack for creating high-quality devices on which people love spending a lot of money.”

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Apple-Comcast: *continued from page FIVE*

another OTT service provider may come along. Comcast will want to enter into such agreements with as many pay OTT services as it can, thereby maximizing the amount of money it can squeeze out of its broadband network.

Apple Deal Looks Unlikely Because...

-The last mile Net Neutrality issue. *WSJ* said Apple may get around this Net Neutrality issue by having content be delivered by a separate channel of broadband, instead of being prioritized over the public Internet. This would make Apple a “managed service” – meaning it is delivered over the ISPs non-public network, just as IPTV is delivered.

-Apple doesn’t have any content. Even if it made progress with Comcast to become a “managed service” it would still need to negotiate its own content rights. This remains the largest obstacle for Apple – or any new pay broadband TV entrant. As we have been shown time and again, the obstacle remains with acquiring rights, not technology.

There are signs that the ground has been softening for such a deal: last year, Sony reportedly signed a pay OTT deal with **Viacom**, and earlier this month, **Dish Networks** signed one with **Disney**. But any such service will need digital streaming deals with a number of content partners, not just one.

Apple will probably look to Disney (and with it, sports content from **ESPN**), Viacom (who is eager to transition online with its youth-oriented brands such as MTV, Comedy Central, and Nickelodeon) and HBO.

-Any deal with Apple or any other OTT service that involves last mile management will no doubt require upgrades to Comcast’s networks. It seems unlikely Comcast would go through all that trouble for a service that only a small number of subscribers are going to use.

The *Wall Street Journal* noted that on the hardware side, such a service would use Apple TV boxes instead of Comcast STBs, and therefore could eventually help decrease Comcast’s Capex. That seems unlikely as

well, as any such service would likely remain niche for the foreseeable future.

Remaining Questions

-If the two are able to come to an agreement, what type of device will Apple use to deliver the service to subscribers? Apple will have to launch a new piece of hardware for this service. It could be either a new net-top Apple TV box, or an Apple-branded TV set. The TV set will have to be a 4K TV set with Internet connectivity. Most TV makers scoff at the idea of Apple entering the TV market because prices and profit margins are so low. Of course, Apple has a knack for creating high-quality devices on which people love spending a lot of money – just look at their PC and smartphone businesses.

-If Apple releases a new NTB, will it offer third party OTT apps alongside its pay OTT streaming TV service? Will Vudu be allowed on?

-Will anyone else make such agreements with other ISPs? This type of deal looks like something Verizon would be interested in doing, with ISPs outside of its footprint. It has Intel’s OnCue box, which was designed specifically to handle live linear streams and cloud DVR features. Verizon may instead rely on its nationwide LTE network to deliver video, though it will only be able to deliver a few channels over LTE.

Similarly, if Sony is to launch a cloud-OTT service, as it has said it wants to do, it may want to arrange for a similar agreement with another ISP.

-Will Apple try to make similar deals with other ISPs? It will need to have similar access to other ISPs’ networks, in order to make its pay OTT service truly nationwide. That will take a lot of negotiating.

Conclusion: While the Apple-Comcast deal might not amount to anything, it’s clear the OTT services’ free riding days are coming to an end.

To Peer or to Pay: That Is the Question

Netflix needs to come up with a better scheme for getting its content to its subscribers, buffer-free. One of the indirect consequences of the **Netflix-Comcast**

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To Peer: *continued from page SIX*

deal is that it's going to be hard to sell Netflix's Open Connect CDN proposal to other ISPs when Netflix has already ceded ground on the peering dispute to Comcast by agreeing to pay for access.

Netflix CEO Reed Hastings took to his Website's blog to say that even if Netflix is paying Comcast, it shouldn't have to. Hastings singled out Comcast, **Verizon** and **AT&T** in his blog post. We bet Netflix is currently in negotiations with those latter two over the traffic issues.

The question ultimately comes down to who will pay:

-Should ISPs pay to increase capacity or upgrade their networks to accommodate rising demand for HD videos coming from Netflix servers and other OTT sites? ISPs will pass those costs down to their broadband subscribers. Of course, it is the rising demand for HD video streams from Netflix and others that is driving demand for increased broadband speeds – which is a good thing for ISPs.

-Should Netflix pay to use (and profit from) broadband networks it didn't build nor help maintain? That financial burden, in turn, would be passed down to Netflix subscribers.

The question, then, boils down to which subscribers should pay for increased capacity and network upgrades? All broadband subscribers, or just the Netflix subscribers?

The problem is that if ISPs increase capacity on their networks, *all* broadband subscribers benefit. ISPs like to say that some Internet users are ok with slower speeds and lower prices. You never hear anyone complain about their Internet being too fast, though. Everyone wants faster speeds.

On the other hand, Netflix should be made to pay for assured delivery only if its subscribers are the only benefactors of the congestion relief. That's exactly what it has done with the Comcast deal. It has negotiated a more direct connection to its own subscribers via Comcast pipes, and it paid for that access.

The company's strategy, therefore, has already backfired on it, in two ways:

1). Netflix has essentially made its Open Connect

argument invalid and moot – by paying Comcast for a more direct connection to Comcast's broadband network. On the one hand, Netflix is saying subscribers should be able to access any and all content over the top equally, at the same speeds, on the other hand, it has paid an ISP for a more privileged connection to its own subscribers.

2). Netflix doesn't want to pay to be delivered to subscribers over broadband networks, while its potential competitors – **Apple** and **Google**, for instance – do want to pay, to make sure their services are delivered in the best possible quality, and are happily doing so.

Netflix shot itself in the foot by agreeing to pay Comcast for privileged access to its networks, and the big picture ramifications of that deal are only now becoming clear.

Sony's Crackle Can't Take the Heat in the UK

Despite a booming appetite in the UK for online video content that can be streamed to TVs, tablets and smartphones, **Sony** is shutting down its ad-supported OTT service Crackle there. Crackle had launched in the market in 2010, and has been offering a slate of original Web series, such as Jerry Seinfeld's "Comedians in Cars Getting Coffee" alongside older Sony Pictures films and TV shows.

Sony hasn't given any reasons for the shut down yet. Its overall strategy for Crackle has always mystified us. Sony was one of the first to the OTT game when it launched Crackle in the US back in 2007. The service never gained the traction **Netflix** or **Hulu** have. Crackle's device reach is broad, too. The service is available on all Sony devices, including Sony smart TVs, tablets, PlayStations and Blu-ray players, and is also on Android devices, and net-top boxes such as **Roku** and **Apple TV**.

The closure may be a symptom of Sony's financial troubles, as last week it revealed it was laying off some employees from its Sony Pictures division. Though to be fair, Crackle has always trailed behind its OTT cohorts across markets. Sony has said the service, and particularly its original series, have done well in

Sony's: continued on page EIGHT

"The question boils down to which subscribers should pay for increased capacity and network upgrades? All broadband subscribers, or just the Netflix subscribers?"

"Sony was one of the first to the OTT party when it launched Crackle. Its overall strategy for Crackle has always mystified us."

“LTE eMBMS technology can broadcast to a large number of viewers simultaneously.”

“YouTube channels with large subscriber numbers, high video views and engaged audiences are worth millions.”

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Sony's: *continued from page SEVEN*

the US. Its Web series “Comedians in Cars Getting Coffee” has gained a lot of recognition, and even had its own Super Bowl ad earlier this year with a brief “Seinfeld” cast reunion. Sony recently announced it had measured 30 million streams in one month.

It will be interesting to see if Sony is able to license out streaming rights for its one hit Web series, which now will not be available in the UK (legally).

The UK's OTT market is very competitive, thanks to **Amazon**, **Netflix**, **Tesco**-backed **Blinkbox**, **Sky's** **NOW TV**, **BBC** iPlayer, **Wuaki.TV**, and other OTT players. The content Sony offered in the UK on Crackle was arguably less stellar than the new shows and films these other OTT services offer. Crackle had available to stream in the UK older Sony Pictures films and edited clips of its TV shows, along with Sony's original Web content. A *CNET* review of the service when it first launched was almost scathing in its description of the content available on Crackle, which said the news of the UK announcement was “fantastic news for fans of awful films and butchered Yank sitcoms,” and concluded “Crackle is a day late and a dollar short.”

Sony has also launched an anime subscription OTT service, called **Animax**, which it won't be shutting down, and may be doing well in the UK. Crackle is also available in Canada, Australia and throughout Latin America.

Amazon Dumps Pay TV Content

Significance: After a year of signing aggressive streaming deals with pay TV channels to bulk up its subscription streaming service, Amazon, like Netflix, is shifting its focus to original and exclusive content, and dumping some of the pricey pay TV shows that it feels it doesn't need.

Amazon is dropping two content providers from its subscription streaming service. Amazon Prime subs will no longer have access to **Scripps Networks** or **Discovery Communications** pay TV channels' content, according to a report in *Wall Street Journal* this week.

Amazon's content acquiring frenzy over the past year has indicated a less than nuanced strategy. It was eager to pick up any and all content it could, including Netflix's discarded scraps. Of course, Amazon isn't

competing with the likes of HBO, like Netflix is. Amazon just wants to sign up as many Prime subscribers as it can, and uses content as a means to do so. Amazon Prime subscribers spend, on average, over \$1,200 per year on Amazon.com.

The *WSJ* reported Amazon wants to spend more money on original content, rather than pay TV content, which indicates its two seasons of original shows has given it a bump in Prime subscriptions.

According to the report, both **Scripps** and **Discovery** wanted more money from Amazon for the content than what Amazon was willing to pay. It's unclear how the content was performing on Amazon Prime in terms of streaming numbers, but the *WSJ* said **Scripps** “was happy with viewership of its shows on the streaming service.”

When content disappears from Netflix's library, it is often spun as a “loss” for Netflix. When Amazon picks up the content Netflix “lost,” it is spun as a “win” for Amazon. The reality is that Netflix will pay top dollar for content that is popular on its site, and won't pay top dollar for content that isn't very popular. Netflix hasn't signed a deal with **Scripps**, but Netflix does have a non-exclusive deal with **Discovery**.

ProSiebenSat Joins Disney, Warner Bros and Others in YouTube Channel Investment

Significance: TV broadcasters and pay TV channel owners are recognizing online video as an opportunity rather than a threat. That means successful YouTube channels with large subscriber numbers, high video views and engaged audiences are worth millions to content owners.

Germany-based broadcaster **ProSiebenSat** is the latest big media company to invest in a YouTube Channel. **ProSiebenSat** is buying a 20% stake in **Collective Digital Studios** (CDS). It has over 600 channels and 100 million subscribers. It is host to such YouTube favorites as “The Annoying Orange” and “Epic Meal Time” – both of which have transitioned over to linear TV. **ProSiebenSat** launched its own online video channel network called **Studio71** that logs around 100 million monthly views.



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BROADBAND BEAT

After Buying Ono, Vodafone Launches FTTH in Spain

Despite **Vodafone's** recently announced acquisition of Spanish cableco **ONO**, Vodafone says it will launch a separate fiber-to-the-home (FTTH) service in Spain on April 1.

Download speeds will be up to 200 Mbps and upload speeds will be limited, depending on the plan to 10 Mbps to 20 Mbps. Vodafone will add pay TV at a future date.

The service will be available in the country's most populous cities: Madrid, Barcelona, Seville, Valencia, Malaga and Zaragoza.

Vodafone will share the FTTH network with **Orange**.

It has not announced its plans for Ono and Ono's almost one million subscribers nor has it explained how or even whether it will integrate the two networks,

Same Broadband Price for All

"There is no good reason why one person should pay over four times more than another in Europe for the same broadband," said Neelie Kroes VP of the European Commission responsible for the Digital Agenda. Citing reports the Commission has done, she said the European Union's 400 million Internet users face a "geographic lottery" when it comes to the price and speed of broadband and the range of services available.

Kroes said the studies showed that 66% of people do not know what broadband speed for which they have signed up and that on average, consumers also only get 75% of the speed for which they signed up.

Broadcom's DSL SoC with Vectoring, Bonding & 11ac Wi-Fi Brings Smiles to Telcos

Broadcom has been shipping to the telcos' box makers a DSL SoC (the BCM63168 xDSL IAD) that supports on a single chip VDSL2 bonding and vectoring for broadband together with a chip (the BCM4360) that

supports the 11ac dual-band version of Wi-Fi and wireline Ethernet for home networking. It enables new applications and services for whole-home triple play connectivity and automation plus simultaneously streams high-quality HD video to multiple wireless devices such as tablets, smart TVs, Blu-ray players, laptops and smartphones.

ZyXEL Communications, D-Link and others are reportedly shipping equipment with the Broadcom DSL SoC and 11ac chip.

Boxes with the chipset will appeal to telcos that are put off by fiber-to-the-home (FTTH) because of the cost of its deployment. Most now see vectoring and bonding as a way to offer broadband 100 Mbps or so speeds over their existing last-mile copper wire networks. It will enable telcos to compete against the cablecos' faster DOCSIS broadband technology with speeds that are fast enough for most homes, at least for now.

With vectoring and bonding, telcos only have to deploy fiber to the neighborhood or to an MDU, a much less expensive and time-consuming proposition.

Telcos like having Wi-Fi built in because it allows their subscribers to quickly connect all their Wi-Fi devices — and the 11ac version of Wi-Fi future proofs the gear for telcos and their subscribers. We expect that smartphone and tablet makers will start incorporating 11ac into their products by mid-year. There are unconfirmed rumors that **Apple** will include 11ac in its upcoming iPhone this spring. Telcos certainly don't want to be stuck shipping last-generation technology.

One other point about this Broadcom DSL SoC is interesting. It does not include any wireline home networking technology — except for Ethernet, which means telcos aren't yet asking for G.hn, HomePlug, MoCA or HomePNA in any significant quantity.

"Download speeds will be up to 200 Mbps."

"The European Union's 400 million Internet users face a 'geographic lottery' when it comes to the price and speed of broadband and the range of services available."

HOME NETWORKING

D-Link's 11ac Range Extender Goes Where No Wi-Fi Has Ever Gone

The 11ac version of Wi-Fi has become the de facto standard for home networking gear, just as predicted in The Online Reporter three years ago.

D-Link this week started shipping its new \$69.99 Dual Band Wi-Fi Range Extender (the DAP-1520), which uses the 11ac version of Wi-Fi to extend the range of existing networks so as to eliminate Wi-Fi dead zones. It is said to bring Wi-Fi coverage to hard-to-reach areas like basements, upstairs bedrooms and outdoor areas. Its speed — up to 750 Mbps — is needed for flicker-free streaming of multiple videos simultaneously to multiple devices and for online gaming. D-Link brags about its easy set up with the push of a button and configuration with any mobile device — no PC needed.

Next iPhone to Have Broadcom's 11ac SoC Chips

There are reliable reports that the upcoming iPhone 6 will have **Broadcom's** industry first 2x2 MIMO (Multiple Input Multiple Output) 11ac system-on-a-chip (SoC) for smartphones. That makes sense because **Apple** has used Broadcom's SoCs in all of its Wi-Fi enabled iOS devices. Broadcom says the recently introduced SoC doubles the speed of video and music downloads, increases upload, improves Wi-Fi coverage and increases usage between battery charges.

Marvell's G.Now on Verge of FTTC, EoC Deals

Faultline's Peter White was so impressed by Marvell's use of G.hn chips for MDU broadband access links capable of 500 Mbps that he called Marvell's Chano Gomez to talk through the possibilities. Here are excerpts from the report that White wrote.

Apparently, Marvell's G.hn chips were first being shipped a year ago and sampling clients asked whether or not it could be used for broadband access networks. It was never part of the plan, but suddenly it seemed to make sense.

The main focus on G.hn was that it enabled any of three existing lines in the home, coax, twisted pair and powerline, to be used with the same chip and an almost identical MAC. Our main coverage point was “would it work” and then it became “will it survive,” because it had **Broadcom, Qualcomm Atheros** and a number of other major chip vendors hostile to it.

Had those stories not been the order of the day, along with the rise and rise of the IEEE's 1905 specification, that was supposed to blend all of its rivals, HomePlug, Wi-Fi and MoCA into a single network, then we may have noticed that broadband access networks were a probable destination, rather than just in-home applications.

But the story we wrote in February was simply that **KT Corp** (formerly Korea Telecom) was signing up to get 500 Mbps to each apartment in a multi-dwelling unit, over existing twisted pair. The idea is to push up to 10 Gbps over EPON to the basement and then split this between 24 twisted pair lines. It calls its solution G.Now and said that it can also bond 2 channels to help extend the reach, and add noise protection using two chips — the Marvell 88LX3142 G.hn digital baseband processor and the 88LX2718 G.hn analog front end.

Other chip vendors supporting G.hn include **Sigma Designs** and Chinese group **Metanoia**, while Lantiq, which was one of the original supporters of G.hn seems to have fallen by the wayside and has put all its eggs into the VDSL2 vectoring basket. That is perhaps why Gomez left Lantiq and turned up at Marvell.

The twisted pair PHY on G.hn uses most of the spectrum up to 100 MHz, leaving only a small gap to avoid FM radio interference. So it makes sense that it can outperform VDSL2 which uses up to a maximum of 30 MHz of spectrum on the wire, but usually just 12 MHz or 17 MHz. The problem is that it will attenuate faster than VDSL2.

“It all depends on distance,” says Gomez, “if you use up to 30 MHz in VDSL2, you can use it over 600 to 700 meters. Our technology sweet spot is closer to 100 meters to 200 meters.”

He said very clearly at this point that he was not considering central office installations, but if you think about it, this is misleading, because no-one is.

Marvell's: continued on page ELEVEN

“Up to 750 Mbps.”

“KT Corp (formerly Korea Telecom) was signing up to get 500 Mbps to each apartment in a multi-dwelling unit, over existing twisted pair.”

HOME NETWORKING

Marvell's: *continued from page TEN*

G.Fast itself, which is due for standardization by the end of 2014, with chips a year later and services a year after that, works best at 250 meters, and that certainly isn't considering a central office any more. In fact the central office is moving lock stock and barrel to the cross connect box, and could eventually move, like cable systems to just outside each home.

Gomez positions the G.Now chips using twisted pair as something that can stave off moving to fiber, which is precisely what G.Fast is targeted at. The difference is that G.Now can give you 500 Mbps now, in an existing chip, and G.Fast can't realistically bring it for almost three years. You have to ask "Who's in a hurry?" because fiber has to get closer and closer to the home, and that's a lot of work and Capex before you need a solution, and in many cases this won't make much sense any earlier than G.Fast. This is true everywhere that telcos are comfortable with their broadband speeds, but where they are up against strong cable operators with advanced levels of DOCSIS, there is a need to go the extra last mile, as it were.

"The price of VDSL2 and G.Now is going to be very similar given that we have deployments, and our shipments are rising. But the price of vectoring makes the cost far higher for VDSL2," says Gomez. That surely gives the edge to G.hn in the access network then, since VDSL2 without server side vectoring is likely to give rise to just a 50 Mbps service, while G.Now would be far faster, depending precisely on the distance a given house is from the fiber. The G.Now installation has near end cross-talk cancellation built in, but has no defense against far end cross-talk. Even if you compare top of the line between these two technologies, server based cross talk cancellation at an exchange using VDSL2 and line bonding tops out at 200 Mbps. Even if this was slightly cheaper, the 500 Mbps that Marvell has boasted for MDU broadband delivery is not even its top speed.

"When we get to within 50 meters from the home, we can get the speed over twisted pair up to 750 Mbps," Gomez said. This probably means aggregate throughput, so could be 150 Mbps upstream and 600

Mbps downstream, but it's still plenty of bandwidth to usher in 4K OTT streams.

That is why he is targeting this as an interim fiber technology. About 50% of the cost of taking fiber right to the home, is the last 50 meters, as you come into the property, dig up and fix the garden, and require scheduled visits and user permissions. If you put the cost of laying fiber to the home (different in different countries and topologies) at around \$1,000 per home, then this approach saves you \$500 for now, and keeps telcos on track to compete with cable. And it's available now, not in three years' time.

If you take that calculation a little further, it means that it becomes overnight a "no brainer" for the rising tide of fiber installations, to halve their costs and have the entire industry switch overnight to this kind of hybrid. Anything up to 200 meters from the home is going to be worth considering for a FTTC (fiber-to-the-curb) strategy.

Now we know that the G.Fast standard allows for two profiles, one starting at where VDSL leaves off at 30 MHz and going up to 106 MHz and another at 212 MHz, which attenuates even faster. We suppose that chips will emerge that can do either. But if all the low hanging fruit is already taken in FTTC installations, and remember it has 3 years in which to achieve this, this seriously undermines the economic installation rate for G.Fast, so much so, that it may prevent it being a success, except in that higher 212 MHz profile, which will no doubt come later.

Potentially, in one customer signing, Marvell has changed the economic profile of one of the most anticipated telco-based broadband technologies, and that's surely significant. "Don't say that," said Gomez, "I still have a lot of friends in VDSL." Maybe he doesn't want to say it, but someone has to.

Marvell has multiple customer trials going on in secret, both in parts of Asia Pacific and in its native America for G.Now as an access technology over twisted pair. We would hazard that **Verizon** would be crazy NOT to have a trial of this. It has pushed it FiOS FTTH system out to within reach of about 18.5 million US homes, and it has more or less stopped there. Its strategy was considered by investors to be

Marvell's: *continued on page TWELVE*

"G.Now can give you 500 Mbps now, in an existing chip, and G.Fast can't realistically bring it for almost three years."

"When we get to within 50 meters from the home, we can get the speed over twisted pair up to 750 Mbp."

HOME NETWORKING

Marvell's: *continued from page ELEVEN*

too expensive, and it is preparing for a shift to mobile video service delivery.

But if it could re-enliven that broadband drive, using this type of technology, while saving 50% of the costs of deployment, then it could accelerate its broadband sign ups. The top end of that service is called Quantum and already headlines with an offer of 500 Mbps and upload speeds up to 100 Mbps — which can clearly be hit with G.Now over the last 50 meters.

And the possibilities do not end there. G.hn over coax runs across 90 MHz of coax spectrum, offering a PHY of 900 Mbps and according to Gomez a real world throughput of 750 Mbps, as well.

While this is not something that can be used in cable installations, it can be used in MDUs and wherever existing coax is laid, and it can go up against the existing efforts of MoCA chips from **Entropic** and Broadcom, as well as a DOCSIS based Ethernet-over-Coax from Broadcom, and a HomePlug AV chip version of Ethernet-over-Coax from Qualcomm Atheros.

This is a very different game with many local technology specialists having to be supported for what are initially smaller direct sales. As a result this has been a slow burn access market, but Marvell already claims to be speaking to one Tier 1 operator in the Asia Pacific about this very subject. This market has very local difficulties, and it depends on where signal amplifiers are placed inside an MDU and whether or not they are bidirectional, which often they are not, which is why it has traditionally been so slow.

That brings us to the powerline capabilities of G.hn.

Could it be used to take broadband access into and around a home, well yes it could, but it is slower than the other existing wires and still requires a termination point inside the home, a Home Gateway, and it has difficulties in MDUs where power suppliers are often shared and interfere with one another. So while it is a nice idea to shove broadband in the basement of an MDU or to within 50 meters and broadband simply arrives in your electricity supply — that is unlikely to happen. Powerline remains diverse and tricky for access, but is a perfect target for in-home distribution, and is a straight fight between HomePlug and G.hn. The more chips G.hn ships, the more of a threat it is here.

“We could conceivably take a multi-line approach rather like the IEEE 1905 effort. An operator might create a single network from the basement that can use coax, twisted pair or the powerlines, all with an intelligent Ethernet switch at the bottom managing things,” said Gomez. “Path selection could be carried out using real world info and the system being load balanced, and Wi-Fi Access points being used to distribute inside an MDU apartment.” But here we can tell he is just speculating to show off the power of his technology, because he confirms there are no such trials in process.

It will be interesting to see if this technology can steer its way through the various bake-offs that it will need to in the near term, in time for it to steal the early G.Fast market, or as Gomez prefers to call it the FTTC market. We think it will certainly be taken seriously by every telco out there and many of their equipment suppliers too.

LTE BROADCAST

KT and Samsung Ready Demo of eMBMS Prior to Korean Launch

Vendors have tried to take the lead in the past on mobile video delivery services, and usually it has resulted in endless demonstrations and little progress, but now none other than **KT Corp** (formerly Korea Telecom) has entered the fray with a view to implementing the Multimedia Broadcast Multicast Services (eMBMS) technology in its LTE network in South Korea. It may

then go on to export its know-how around the world.

KT's “Olleh LTE Play” service is powered by **Samsung's** network equipment solutions, which was adapted to KT's LTE network. It will be available initially only to users of Samsung's Galaxy Note 3, who will have to download a software upgrade.

The two companies said LTE eMBMS technology can broadcast to a large number of viewers simultaneously just as does radio and local TV stations.

KT: *continued on page THIRTEEN*

“G.hn over coax runs across 90 MHz of coax spectrum, offering a PHY of 900 Mbps and according to Gomez a real world throughput of 750 Mbps.”

“LTE eMBMS technology can broadcast to a large number of viewers simultaneously.”

LTE BROADCAST

KT: *continued from page TWELVE*

LTE eMBMS is also seen as useful for broadcasting to heavily attended events such as sports stadiums because it can offer simultaneous them access to multiple broadcast cameras at different locations.

South Korea is one of the few countries that already has massive penetration of broadcast mobile TV, as opposed to unicast video services which thrive in the US and Europe, but which would saturate all the cellular networks in the world if everyone used them, which is why the delivery of TV on mobiles has never become mainstream outside of Japan, Korea and China, who all use a broadcast technology.

Verizon used the same eMBMS in its recent LTE Broadcast trial during the Super Bowl. It also used modified Samsung Galaxy Note 3s as viewing devices.

In Japan over 80% of mobile phones have 1 seg ISDB-T capability and all TV stations transmit in this format so mobile TV there reaches over 70 million regular users. In South Korea, with a population of just under 50 million, there are well over 25 million regular users of two mobile broadcast systems, T-DMB, the dominant terrestrial format, and S-DMB, an earlier satellite system that just about still survives.

Using eMBMS technology could be the way forward and the cellular world could all converge on the same effort because it is part of LTE, which most every country now has. It solves lots of key issues. First and foremost, no new mobile network needs to be built to deliver LTE broadcast video to handsets. Secondly, each TV channel only has to be sent once. Thirdly, the logic required to demodulate the signal is now contained in standard cellular chips from **Qualcomm** and others, so no extra chip needs to be fitted into the viewing device.

3G base stations curled up their toes once 20 people got on them and watched streaming video. In LTE this might have increased to 60 or 70 TV-quality streams, but eMBMS means that the World Cup Final or Super Bowl can be shown and everyone, literally millions, can watch it simultaneously with no delays — and no-one will get stuffed with massive data charges, whether you are within or outside the reach of Wi-Fi.

This was excerpted and updated from a report in a prior edition of *Faultline*.

Analyst Says Broadcasters Should Innovate with LTE Broadcast

“How many times have we heard that operators need to behave more like the OTT players they are increasingly competing with?” Peter Jarich, analyst at **Current Analysis**, wrote in an editorial that appeared in *FierceWireless* this week. “How many times have we heard that service providers need to embrace an ability to ‘fail fast’ in order to roll out new, compelling, revenue-generating services? As part of the LTE ecosystem, LTE Broadcast shouldn’t require significant changes to the RAN or an operator’s device portfolio. Sure, use cases around automatically delivering content to devices WILL require back-end investments. And use cases around special events WILL require working closely with the event organizers and potentially even new content ecosystems. No one, however, said business innovation would be easy.”

Read the full editorial here: <http://www.fiercewireless.com/story/jarich-hypocrisy-around-lte-broadcast/2014-03-26>

LTE Broadcast Trials, Technologies and Promises Round-Up

-10 Operators and 7 Hardware Makers Say LTE Broadcast Is the Future

Significance: The case for the future of LTE Broadcast looks clear when you line up all the recent demos, technology announcements and interested operators.

LTE Broadcast is the latest technology that is able to deliver video services to mobile devices. We at *The Online Reporter* expect LTE Broadcast to be an important technology for cellcos to launch nationwide video services, and will enable them to deliver video to mobile devices.

Here’s a quick round-up of the service providers that are interested in LTE Broadcast:

-Verizon: In the US, Verizon has taken the lead in LTE Broadcast. Verizon first demo’d its LTE Broadcast solution at CES 2013, with **Qualcomm** and **Ericsson**. During the 2014 Super Bowl game,

LTE: *continued on page FOURTEEN*

“No new mobile network needs to be built to deliver LTE broadcast video to handsets.”

“LTE Broadcast shouldn’t require significant changes to the RAN or an operator’s device portfolio.”

LTE BROADCAST

LTE: *continued from page THIRTEEN*

Verizon broadcast four channels of live video content using LTE Broadcast to **Samsung** Galaxy Note 3 tablets it had modified. A Verizon representative has confirmed with *The Online Reporter* that it plans to have an LTE Broadcast network fully deployed by Q3 2014 – this year. Verizon also said it will be deploying LTE Broadcast technology through the year at IndyCar championship races, via the IndyCar smartphone app.

-AT&T: AT&T has said plans to use some of the 700MHz spectrum it acquired from **Qualcomm** in 2011 for an LTE Broadcast network used to deliver video to devices. AT&T's SVP of network architecture and planning at AT&T Labs Kris Rinne re-iterated that the company plans to use LTE Broadcast. "We think it's a good way to efficiently address video demand that we see growing in the marketplace," she told *FierceWirelessTech*. "I would definitely anticipate it will be part of our product portfolio." AT&T has not said when the LTE Broadcast service would be available, only that it would be sometime over the next three years.

-Telstra: The Australian telco signed a deal with **Ericsson** for three LTE technology trials in 2013 that included LTE Broadcast. Earlier this year, **Telstra** successfully demonstrated LTE Broadcast in a stadium environment, using Ericsson's LTE Broadcast solution. Telstra broadcast three HD video channels during a cricket game to attendees using a dedicated app and an "LTE Broadcast-enabled device" – though whose devices were being used is unclear. To our knowledge, only Samsung has released an LTE Broadcast-enabled tablet.

-Vodafone: Vodafone is the first European cellco to trial delivering content using LTE Broadcast. Much like the Verizon and Telstra trials, the trial involved Qualcomm, Ericsson, and Samsung. It was conducted at a stadium in Germany during a soccer match. Vodafone said the trial was a success, but didn't give specifics about the type of content or volume of content being delivered. Vodafone has said it will continue to conduct more trials at that stadium during games for the next few months.

It also said it plans to expand its LTE Broadcast service to other stadiums throughout Germany.

-KT Corp: South Korea's largest telco KT Corp launched the world's first LTE Broadcast video service this year, called Olleh TV Mobile. It includes two live HD channels of KT's IPTV service. It is available to subscribers that have Samsung Galaxy Note 3 tablets only and users will need to download a software upgrade in order to access the video service. Streaming the two live HD TV channels of Olleh TV Mobile won't incur any data charges to users.

-KPN: the Dutch telco broadband and pay TV service provider, is launching a video service that is delivered on its LTE network. The telco began testing LTE Broadcast last year. The service, which KPN referred to as a "pilot," will offer 10 channels for a monthly subscription fee. Subscribers will be able to access to the content on their wireless devices, such as smartphones and tablets that are connected to KPN's 4G LTE network. Streaming its video content won't count towards the users' data limits, either.

-Etisalat: The United Arab Emirates' satco plans to deploy an LTE Broadcast network this year, with the help of **Alcatel-Lucent**, according to a deal the two signed this year.

-SingTel: Singapore-based SingTel earlier this year announced a new lineup of LTE services with Ericsson that includes LTE Broadcast video streaming. It said it plans to trial the LTE Broadcast service in the second half of 2014.

-EE: In the UK, EE's (formerly Everything Everywhere) Senior manager of network strategy Matt Stagg last year said the operator would be trialing LTE Broadcast in 2014.

-Orange: France's Orange said it began private LTE Broadcast trials in 2013.

Hardware and Software Makers

Focused on LTE Broadcast

Here are the vendors showcasing LTE Broadcast technologies and solutions:

-Alcatel-Lucent and Sequans demo'd joint LTE

LTE: *continued on page FIFTEEN*

"Verizon said it will have an LTE Broadcast network fully deployed by Q3 2014 – this year."

"France's Orange said it began private LTE Broadcast trials in 2013."

LTE BROADCAST

LTE: *continued from page FOURTEEN*

Broadcast solutions. The companies said the demos demonstrated the “commercial readiness” of their respective LTE Broadcast solutions.

-**Expway** and **Intel** announced the first public demonstration of LTE Broadcast on Intel platforms.

-Ericsson, the unofficial LTE Broadcast cheerleader, and Qualcomm, the leader in LTE Broadcast chips sets.

-Samsung’s Galaxy Note 3 tablet is the first to market with LTE Broadcast capabilities.

Predictions about LTE Broadcast

At risk of belaboring the point, here’s a quick look at some of the predictions that have been made about LTE Broadcast:

-Qualcomm EVP Murthy Renduchintala said he expects Verizon and Telstra to launch commercial LTE Broadcast services sometime in 2014, and said Qualcomm Technologies is “currently involved in interoperability tests of the technology with four major infrastructure vendors.”

-Erik Vercoetere, program director for KPN’s LTE division, said last year the company was “very interested in the possibilities that will become available with e-MBMS or LTE Broadcast.”

-Mazen Chmaytelli, senior director of business development at Qualcomm Labs, said he expects to see the first commercial LTE Broadcast-capable devices to come to market in the second half of 2014. Samsung beat his expectation.

-David Price, head of Ericsson’s global TV development, predicted that all smartphones will be compatible with LTE Broadcast in three to four years, speaking at an IBC event last year.

Orange Exec Says LTE Broadcast Likely to Succeed Where Predecessors Failed

France’s telco **Orange** has said it is interested in exploring LTE Broadcast, and its VP of product development, Pierre François Dubois, reiterated the

company’s thinking on the future of LTE Broadcast, in a recent interview that appeared on the *LTE World Series* blog.

This is not the first time broadcasters have flirted with a mobile video delivery solution (See “It’s Cellcos Versus TV Broadcasters in the Mobile TV Market,” page 1). Despite the earlier, ill-fated forays, Dubois said LTE Broadcast is well positioned to become a path forward for broadcasters in the multi-screen world.

“There have been several attempts in the last ten years to enrich mobile networks with broadcast solutions, but all of them failed for two main reasons,” Dubois said. Those reasons include “no real breakthrough in terms of service for the consumer,” and “the difficulty of building an ecosystem.”

On both fronts, LTE Broadcast has an advantage. On the technology side, the LTE Broadcast ecosystem largely already exists. “4G has been fully designed for data and anticipated eMBMS in the standard,” Dubois said. “The technology is close to maturity.”

Only missing are the LTE Broadcast-capable devices. Samsung has launched one tablet that can receive LTE Broadcast signals (the Galaxy Note 3 tablet), and other compatible devices are expected to hit market this year.

In terms of offering a break through service, LTE Broadcast offers a unique opportunity to address a large group of people in the same area. “The killer use case is therefore a situation where you have many people in the same area, expected to stream the same content on their smartphone or tablet,” Dubois said. “It can be a specific event in a certain place, or it can be a specific media that lots of people stream at the same time.”

The potential for LTE Broadcast is there. But Dubois said whether a viable business model using the technology will emerge remains unknown. “The answer may vary from one country to another,” he said.

“Qualcomm Technologies is involved in interoperability tests of the technology with four major infrastructure vendors.”

“There have been several attempts in the last ten years to enrich mobile networks with broadcast solutions, but all of them failed for two main reasons.”

NET TOP BOXES

Netgem Shows Tiny Net-Top Box

Netgem, the set top maker for **SFR** that has tried to completely change its business model over the past four years, is thinking OTT, and has just signed up **Virgin Mobile** in France, a totally separate company from the UK's **Virgin Media**.

Netgem's tiny new OTT box — on display at London's TV Connect exhibition last week — offers HTML 5.0 and HbbTV delivered alongside one another, and this is its third generation of OTT device. It hopes to pick up business in the highly competitive French market, partly using its Videofutur content subsidiary, and the fact that some of the 4 telco broadband players (**Orange**, **Bouygues**, **Free** and **SFR**) are starting finally to offer broadband without the TV offering, in a double play with VoIP, which opens up the possibility of offering paid OTT at last. **Netflix** will be pleased to hear this, too of course. The company sees a big gap in the €10 to €20 a month market for a TV service, above free-to-air and below the current pay TV offerings of **Canal-Sat** and **Numericable**. Netgem says it will still maintain its OTT offerings around the world with **Telstra** in Australia, at **Viasat** and **Elisa** in the Nordics and **Telecable** in Mexico, all offering hybrid OTT delivery.

At TV Connect it was showing off a new Xbox 360 implementation and adding start over options for any broadcast program, a bit like US cable introduced a few years back.

This article appeared in *Faultline*.

SoftAtHome Shows Chromecast-Like HDMI Stick

French IPTV software group **SoftAtHome** was one of the handful of companies that was pushing a new HDMI stick at TV Connect last week, one that it says is better than Chromecast, because it can work with Android, Airplay, Miracast and with encrypted premium content. We have to say that we really like this idea the more we try it on, and SoftAtHome will have some takers here. In the past it has offered set tops that are not based on Android, but which can run Android Apps, so that their operator customers are not enslaved to the **Google** vision, and we also see that as

very pro-operator.

So instead of using a **Marvell** chip, like most of the anticipated Chromecast copycats, this has to use a **Broadcom** set-top chip (the 7225), that's because this has all of the hardware roots of trust for each of the major DRMs — so that's **NDS**, **Nagra**, **Verimatrix**, **Playready** Irdeto, and **Viaccess** Orca. It still uses a version of Dial developed for Broadcom chips (Dial is the discovery and launch protocol designed by **Netflix**, **YouTube** and **Sony**) made famous in Chromecast, but it does this not on an **ARM**-based chip. SoftAtHome calls this simply CAST, and it can take streams from an RTSP source, from any adaptive streaming service or even support progressive download.

It seems a no-brainer for its captive operators to use this, and hand them out like sweets, but no price can be talked about since SoftAtHome only offers these ideas to its operator base and they set pricing. We would have thought that a \$50 range was likely.

Cast uses SoftAtHome's SOP software platform and the Broadcom chip is HEVC enabled and designed with help from **Siligence**, another French company put together by refugees from **Philips**, **Pace**, **Thomson** and **Alcatel**. Of course this will not emerge with tons of applications as Chromecast will, so that ability to support Android apps will likely also come in handy down the road.

There were a number of other stands either promising or showing an un-priced, un-launched dongle, but CAST was really the most impressive.

This article appeared in *Faultline*.

Dune HD Fits Full STB into HDMI Dongle

Dune HD drew eyes at TV Connect last week with what at first appeared to be another Chromecast, but upon closer inspection the HDMI dongle was revealed to be a miniature set top box. The Connect stick claims to be the world's smallest set top, and offers IPTV, VoD and OTT services.

The Connect StickSTB outputs via HDMI 1.4, but this does not supply enough electrical power to the device for it to run without a power cable. This cable plugs in via another micro USB, and the unit has a

Dune: *continued on page SEVENTEEN*

“The company sees a big gap in the €10 to €20 a month market for a TV service, above free-to-air and below the current pay TV offerings.”

“The Connect stick claims to be the world's smallest set top, and offers IPTV, VoD and OTT services.”

NET TOP BOXES

Dune: *continued from page SIXTEEN*

full size USB 2.0 and a microSD slot for adding local storage and system updates. A 2.4 GHz Wi-Fi antenna and a 10/100 Ethernet port provide the device's connectivity, but an additional antenna can be added to up the Wi-Fi to dual-band. We're not convinced that delivering a TV signal over Wi-Fi would work very well with this device, so that means yet another cable needs to be attached to the Ethernet port.

The stick uses the **Sigma Design's** SMP8674 and SMP8675 SoCs, which produce 1,057 DMIPS, with 512MB of RAM and 256MB of flash memory. A Linux based open API and SDK are offered to operators for free, and can be programmed to suit their needs.

Dune was dismissive of supporting Android, due to stability issues associated with that platform and content security.

Despite its small size, the Connect has a broad range of video decoders.

The list includes H.264 HiP Level 4.1 at 1080p and 60fps, MPEG-2 up to 125Mbps with 4:2:0 color compression, VC-1 up to 45Mbps, MPEG-4 part 2, XVID, VP8 at 1080p and 30fps at 10Mbps, as well as VP6. The Stick also supports 3D. It uses **Microsoft's** PlayReady and **Verimatrix** for DRM and DTCP for stream protection.

The stick is currently only sold to operators and is not available directly to consumers. Dune also offers a version of the Connect that will support coaxial cable and DVB-C, DVB-T or DVB-T2 based TV, depending on the needs of the operator. The DVB series uses **Broadcom** BCM7581 (1100 DMIPS), BCM7583 (2000 DMIPS) and BCM 7563 (1600 DMIPS) SoCs. These versions can also use NDS, **Nagra** and **Irdeeto** DRM and CAS systems.

The appeal of a Chromecast for many is the fact that it just needs to be plugged in to an HDMI port to work — a hassle-free process. The two stick set tops still need power supplies and some will need a coaxial cable to work, and the trailing wires detract from the sleek marketing image. However, the two offerings from Dune HD provide the full functionality of a set top in a unit only a little larger than a Google or **Roku** dongle. Slimmed down and miniature set tops are

becoming increasingly common, and Dune's planned introduction of HDMI 2.0 in the next iterations of the stick set tops will remove the need for a power cable.

This article appeared in *Faultline*.

Roku Wants to Take Over All the Household TVs

- New Chromecast-Like Streaming Sticks at \$49

Significance: The Internet-connected market is divided along three lines: set-tops, net-tops and game consoles. The players in each group are eager to control the home entertainment experience, and that means controlling the experience on all the TV sets in the home.

Roku is entering new territory outside the living room with the launch of its \$49 HDMI streaming sticks. Roku is looking to take charge of the entertainment experience across all TVs in the household.

Roku is considered one of the most popular net-top box brands, despite the fact that its sales lag behind **Apple's** for its beloved Apple TV. The most recent sales figure Roku has released is 8 million devices sold, across platforms, which puts Roku behind the estimated 13 million Apple TVs sold as of 2013. **Google** hasn't yet released numbers regarding Chromecast sales, but has hinted it is in the millions.

Roku offers the most bang for its buck. Its channel apps have doubled over the last year, and it now offers 1,200 channels to viewers in the US. In the UK, Roku has 750 channels. At TV Connect last week, Roku CEO Anthony Wood said Roku streamed 1.7 billion hours of content in 2013, a 70% increase from the year prior. Roku viewers spend on average 12-14 hours streaming content per week, and a quarter of its users stream video for more than 35 hours per week.

Compared to Roku's impressive channel offerings, Apple has around 30 channels in the US and 15 in the UK. Apple TVs are available across the globe, but primarily as a means to stream iTunes to the TV set, and not necessarily as a net-top box for video content. Chromecast, which only recently opened up for third party developers to create apps for, is still lagging behind in the content app division with 15 listed on its Website.

Roku: *continued on page EIGHTEEN*

"Dune was dismissive of supporting Android, due to stability issues associated with that platform and content security."

"Chromecast is still lagging behind in the content app division."

NET TOP BOXES

Roku: *continued from page SEVENTEEN*

Apple appears to be Roku's most natural competitor, though Roku's Wood has said Google is actually its archrival. That was before Chromecast was launched, and today, it looks like Wood was correct. This month, Roku unveiled its latest piece of hardware, a streaming media dongle that is Roku's answer to Chromecast. The new streaming stick will hit stores in April with a \$49 price tag.

For households that stream, net-tops are just like set-tops: viewers want to access the same content on each TV set in the house. Net-tops can range from the game console in the children's room, Blu-ray player in the bedroom or the Apple TV in the living room, and it's easier to get OTT content on all the TV sets in this piecemeal approach.

That's why HDMI dongles at low prices are so dangerous. When Chromecast launched, a **Best Buy** employee told us people were buying three Chromecasts at a time – one for each TV in the house. And why wouldn't they? At \$35, a consumer can get three dongles for about the same price as one Apple TV or one Roku 3.

We expect the Roku streaming sticks to be very popular, for three reasons:

-Roku users love their devices. Roku has developed something of a cult fan base following among its users – similar to Apple's but with less consumers in the club, and less products to buy. We expect Roku users will be very excited to grab a few streaming sticks for the other TV sets.

-More consumers are aware of streaming devices now than ever before. Chromecast brought streaming devices to a wider audience. While streaming video over the top has become quite mainstream, NTB devices are still mostly used by the tech-savvy and early adopters. Google's Chromecast broadened the reach of NTBs, as will any new launches by Amazon or Apple in the near future.

-Roku has any and all the content a viewer could want: all the big OTT services – except iTunes, of course – and a huge selection of niche content that the other NTBs don't offer.

Roku Fits Its NTB into a Streaming Stick

The new streaming stick offers the same general experience of the NTB. It stacks up pretty well compared to Chromecast.

The biggest difference between the two, in terms of experience, is navigation. Chromecast and Apple TV both offer users the ability to select content on a mobile device and play that content on the connected TV set. Roku is late to this party, having just introduced DIAL support for its Roku 3 late last year. The new streaming stick also supports it, which means users can send content from say YouTube or Netflix over to the TV set from the tablet or smartphone.

DIAL-enabled apps on mobile devices and connected TV can recognize one another. So when the user uses the Netflix app on the tablet, for example, it "sees" there is another DIAL-enabled Netflix app on the Wi-Fi network and can tell that app what to do. So, much like Chromecast, the user can launch the Netflix app on the mobile device and then send over the selection information to the Netflix app on the Roku HDMI dongle. This is essentially the same as Chromecast.

Apple's AirPlay has its perks, though. Mirroring means that Apple TV users can stream video to the TV set even if the supporting app isn't available on Apple TV. On the other hand, the mirroring technology also means the user can't use the tablet for anything else while streaming to the TV set.

Chromecast users are able to enjoy the best of both worlds, because Chromecast supports streaming from the Chrome Browser – from either a mobile device or a PC. That means that, to some degree, a user could stream anything accessible via a browser to the TV set, with or without app support for Chromecast.

Roku's new stick is controlled by a Roku remote, or a Roku tablet or smartphone app. Viewers can also view personal media on the TV set – something that Chromecast doesn't support.

Actually, Roku had launched what it calls "streaming sticks" much before Google unveiled Chromecast. The difference between the two devices is Roku's stick was less of a consumer device and

Roku: *continued on page NINETEEN*

"Roku users love their devices. Roku has developed something of a cult fan base following among its users."

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NET TOP BOXES

Roku: *continued from page EIGHTEEN*

more of TV set accessory. Roku's first line of streaming sticks were closer to \$100, and were sold as a means to introduce smarts into flat panel TV sets that weren't connected to the Internet. The TV set had to be "Roku Ready certified." It connects to an MHL port, not an HDMI port, and the TV remote also controls the Roku interface. Roku has said it has 20 TV makers that have TVs that are "Roku Ready." Last year, it had 60 different products from 14 partners who shipped more than 2.5 million "Roku Ready" devices.

Roku also added DIAL support to the latest model of its net-top box late last year, when it finally added access to YouTube.

Roku's Streaming Media Empire

Roku has spent the past three years building something of a net-top empire, as it has expanded its brand across platforms and devices. Roku now has four streams of

revenue: it offers streaming sticks, traditional NTBs, and smart TV operating systems. It also is licensing its white label channel creation software.

Last year, Roku raised over \$60 million investment from **Hearst Corp**, which the company said will be used for "growth around its streaming software and services businesses," the company said. **BSkyB** has also been a major investor in the company.

Roku also unveiled earlier this year its smart TV operating system, and partnerships with **TCL** and **Hisense**. No external dongle or net-top box is needed. The sets have the full set of Roku apps and use the Roku remote to access both Roku channels and over the air or pay TV channels. The TVs can also be controlled with iOS and Android apps. The sets range in size from 32 to 55 inches. Roku said it has signed up six set makers that will embed the technology but so far only Hisense and TCL have announced.

SMART TVS

Private Label Mobile TV Promises the End of Traditional Pay TV

Maybe the next generation of TV services has already started emerging in the form of the apps that appeared at first on smartphones and tablets and that now appear on smart TVs, Blu-ray players and both net- and set-top boxes.

The Miami-based company **Private Label Mobile TV** (PLMT) says it creates apps that "allow users to attend virtual events or see live concerts via pay-per-view from anywhere" and that "content creators enjoy the freedom that comes with ownership capabilities and control of everything on their channel."

It did not say how much it would charge for its services or whether it already has customers.

The company sends contradictory signals. On the one hand it appeals to the non-pay-TV crowd by saying, "Revenue from Private Label Mobile TV won't come from pricey subscription fees, as is the case with standard [pay] television." On the other hand, it beckons to pay TV networks by saying, "Cable providers can easily convert traditional

channels or an entire network into a mobile network." It's not clear whether the message is aimed at pay TV companies or at the pay TV networks that they offer.

It promises that "celebrities, artists, corporation and charities will be able to compete with major players [the pay TV companies?] in the industry for a tiny fraction of the cost of traditional marketing and engagement strategies."

PLMT says its present plans are to use mobile devices but that future plans include the option of "tethering a Web-connected device to a television without the cost of cable." Translated, that means an Internet-connected net-top box like **Apple TV** or **Roku** that's connected a TV sets, although it's not clear why its apps could not appear directly on smart TVs.

It says that one of its most compelling aspects is the chance to engage with the growing "zero TV" crowd, by which we suppose it means those that don't own a TV set and who opt to watch videos only on smartphones, tablets and PCs. However, putting its apps on smart TV would open up a universe of

Private: *continued on page TWENTY*

"At TV Connect, the Roku 3 box won an award recognizing it as the best consumer device."

"Celebrities, artists, corporation and charities will be able to compete with major players [the pay TV companies?] in the industry for a tiny fraction of the cost of traditional marketing and engagement strategies."

“There are a lot of unanswered questions about Private Label Mobile TV.”

“Recent LTE-A events include a number of field tests in Europe.”

SMART TVS

Private: *continued from page NINETEEN*

consumers that prefer watching video entertainment on big TV sets.

It says its target viewing market is “those who are frustrated with rising subscription costs for entertainment” who may flock to a more cost-effective mobile TV option.

The apps it creates are, it says, “able to compete with television channels similar to linear television such as **Comcast**, **Direct TV** and more.” It says somewhat confusingly that its app is not a Web site, but an actual cable network available on all Web-connected devices.

It also offers the creation of programming in various languages.

There are a lot of unanswered questions about

Private Label Mobile TV but the company had not returned calls in time for this article.

However, the company’s announcement makes several key points:

- Apps such as **Netflix** have led viewers to a non-pay-TV world of video content.

- Mobile devices have become a main source of entertainment videos including content from the pay TV companies to their subscribers.

People expect more from their viewing devices than just movies and TV shows. What’s still missing are apps for a business news channel *a la* MSNBC, a 24-hour a day news channel like the WCBS Radio Station in New York, one or more sports channels plus apps for local sports, news and weather.

WIRELESS BROADBAND

LTE Advanced Makes Advances in Europe

LTE Advanced (LTE-A), the next version of LTE, promises speeds up to 300 Mbps although that is shared by all the devices connected to a cell. Cellcos will begin deploying LTE-A this year and will offer a number of devices capable of sending and receiving LTE-A signals.

Recent LTE-A events include a number of field tests in Europe.

In November 2013 both **Vodafone** and **Telefonica** said they were separately testing LTE-A networks in Germany.

The two companies used **Huawei**-modified consumer devices in their tests. Hardware in the form of smartphones, dongles and LTE-A routers is not expected until later in 2014.

O2’s test was at its headquarters in Munich. Vodafone’s test was at Dresden’s University of Technology, where O2 does some of its research.

In August 2013, Vodafone began offering in Germany 4G speeds up to 150 Mbps; **Deutsche Telekom** followed with the same offer in September.

In December Vodafone Spain began testing LTE-A in Madrid, anticipating rollouts in Madrid and Barcelona in 2014 — whether consumer devices are

available or not.

Vodafone said its tests showed “sustained” of more than 280 Mbps with a top speed at 297 Mbps. By comparison current LTE standards offer a theoretical download speed of 150 Mbps.

This month **Orange** began testing LTE-A in Spain’s Valencia. It reported speeds of 222 Mbps and said it’s deploying six more cells.

Previously, LTE-A field tests had been conducted in the UK and France, by Vodafone in Holland and Italy, by **Bouygues Telecom** in France and by **Base** in Belgium.

Commercial launches are expected to begin within months.

BT Switches to EE’s LTE Network

UK cellco **EE** confirmed that it has taken over as **BT**’s mobile virtual network operator, replacing **Vodafone**. BT will allow its employees to use EE’s network and sell the service to small and large corporate and government customers. However, BT has said its wireless service for consumers will continue to be based on its near nationwide network of Wi-Fi hotspots.

Selecting EE is a natural move for BT because EE is owned by BT’s fellow telcos **Orange** (nee **France Telecom**) and **Deutsche Telekom**.

BT Switches: *continued on page TWENTY-ONE*

WIRELESS BROADBAND

BT Switches: *continued from page TWENTY*

The deal was originally announced in October 2013.

EE also launched the UK's first sub-£100 (€119/\$165) LTE smartphone. It's an EE-branded Android smartphones called Krestel that **Huawei** makes.

EE has again lowered its monthly rate for LTE on a two-year contract — this time to £13.99 (\$23) per month. Subscribers get, 500 MB of data per month and a free LTE handset.

China to Deploy 500k LTE Base Stations This Year

- Opens the Market for Stationary LTE Gateways in the Home

China Mobile will deploy 500,000 LTE base stations in 340 cities this year and plans to purchase more than 100 million LTE terminals of various types, according to its president Li Yue in a keynote speech at the Mobile World Congress 2014. He said that starts a new era of the mobile Internet featuring mobile broadband, cloud computing and smart terminals. China Mobile, he said, will build a faster, more efficient and converged mobile network and will promote the evolution to LTE-Advanced and increase the data rate from 100 Mbps to 200 Mbps, 400 Mbps or even 1 Gbps.

That will obviously open the Chinese market for LTE-capable smartphones and tablets. What is not so obvious is that it also opens the market for stationary LTE gateways that will be used in homes to provide broadband to residences that might not otherwise have broadband.

LTE gateways will be used in homes where DSL is either not available or only available at very slow speeds of 1 Mbps or less. That's no doubt why **FiberHome Technologies** has launched an LTE gateway with **Lantiq** chips that supports the CAT 3 version of LTE, which is capable of 100 Mbps.

Until recently all the talk about wireline broadband in China was, "fiber, fiber, fiber." Now the realization has set in that deploying all-fiber networks is expensive, highly disruptive and time consuming — and that China has large networks of copper telephone

wires that can be used to provide DSL broadband.

Dan Artusi, CEO of Lantiq, who recently visited China, told *The Online Reporter* there is now general awareness in Chinese broadband circles that China is not going to be entirely all-fiber. He said that there are many areas where copper is deployed and where it would be very expensive to rollout an all-fiber network. Artusi said the Chinese have begun to embrace VDSL/FTTdp (fiber-to-the-distribution-point) because they realize that China is not going to be only all-fiber networks. He said that there are many areas where copper is already deployed and where it would be a major and pricey task to build all-fiber networks.

A year ago, an executive of different chip maker also told *The Online Reporter* that the Chinese have become very aware of the opportunities that vectoring affords Chinese telcos in upgrading their networks.

Lantiq makes a chipset that supports both DSL and LTE that can be used in stationary gateways that connect to both networks — DSL for watching a video and LTE for browsing, texting, email and other traditional Internet applications that don't require the consistent broadband that wireline can best provide. Gateways with that capability will require the celco with LTE and the telco with DSL to work together to divvy up the data charges.

Whether it is stationary gateways with LTE only or with both LTE and DSL, Lantiq seems to have discovered a growing market.

“What is not so obvious is that it also opens the market for stationary LTE gateways that will be used in homes to provide broadband.”

“There is now general awareness in Chinese broadband circles that China is not going to be entirely all-fiber.”



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Multiple Sclerosis (MS) is the leading neurological disabler of young to middle-aged adults.

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LIES, DAMN LIES AND STATISTICS

There May Be Hope for Microsoft Tablets Yet

-Hybrid Tablet Shipment on the Rise

The PC market is still in decline, but PC-like tablets are coming into vogue. A new report from **Juniper Research** is predicting “hybrid tablets” – which it defines as tablets that combine mobile and ultrabook functionality – will grow to 50 million shipments by 2018.

Juniper estimates 9.5 million of such functional tablets were shipped in 2013.

Juniper said the tablet hybrids appeal to gamers and business users – the latter of which makes up the majority of **Microsoft** software sales, though not on tablets. Not yet, at least.

“Juniper predicts that devices released over the next few years will increase the diversity of the market and bring some worthwhile products that certain consumers may purchase.”

Microsoft must be working on new generations of its Surface tablets. **Intel** has launched new chips, called Bay Trail, which will probably be included in the new Surface tablets that will help Microsoft bring down its tablet price.

Juniper Research said education will be a huge market for tablet hybrids. That’s bad news for **Apple** because it has a large lead and presence in classrooms across the country via desktop computers, and more and more now its iPads.

Sales of 4K TVs to Grow Faster than Sales of HD Sets

Adoption of 4K is going to grow rapidly and result in significant impact on broadband services and pay TVs.

Sales of 4K TV sets in the States will follow a similar but faster pattern that sales of HD sets followed, according to **Parks Associates** in an optimistic prediction. We hope Parks is correct but the economic squeeze and general satisfaction with HD may slow sales of 4K TVs.

One of the interesting points about the Parks analysis is that only 82% of US homes have HD TV

sets, meaning that almost 20% do not yet have HD sets — and here we are as an industry thinking that everyone has one or more HD TVs.

It took 15 years for the US to reach the 82% saturation in HD sets. Parks Associates predicts 4K TVs will reach mass-market pricing in the next 2-3 years and top 80% of households in approximately 10-12 years.

It also confirmed what we have been reporting: 4K will initially be delivered by OTT services, with **Netflix**, **Amazon** and **Comcast** (now an OTT service too) publicly acknowledging that they are working on 4K-based offerings.

As 4K traffic increases over the next two years, traffic demands on broadband networks will grow dramatically, according to Parks Associates, and so video distribution companies are aggressively looking into bandwidth-saving technologies, including next-generation video compression technologies such as HEVC (h.265).

Parks Associates president Stuart Sikes said, “4K TV adoption is following the same pattern as HDTV, but prices are dropping more quickly. With the increasing convergence in the connected home, innovations such as 4K have implications for a variety of players throughout the home entertainment ecosystem.”

Millennials Love Their Net-Top Boxes

Significance: Comcast’s interest in Apple TV NTBs, and its own interest and investment in developing and rolling out an Internet-connected STB, point to another, broader reality: devices and platforms such as Apple TV boxes are the future.

The Diffusion Group (TDG) released a report this week demonstrating the younger consumers – the demographic typically referred to as “millennials” – are interested in accessing OTT content on their TV sets via net-top boxes (NTBs). The millennials of today are the pay TV subscribers of tomorrow, which is why TDG said pay TV providers and network operators should pay attention to this demographic and its entertainment viewing habits.

Millennials: *continued on page TWENTY-THREE*

“4K TVs will reach mass-market pricing in the next 2-3 years and top 80% of households in approximately 10-12 years.”

“The millennials of today are the pay TV subscribers of tomorrow.”

LIES, DAMN LIES AND STATISTICS

Millennials: *continued from page TWENTY-TWO*

Internet set-top box use is especially prominent among Millennials aged 19-34, and the “late boomers,” aged 45-54, TDG said. “Late Millennials (18-24s) are rightly a strategic priority for operators and networks,” it said.

The report also said that current net-top users are very likely to purchase another NTB – which TDG refers to as “iSTBs” – whether to update the living room box or equip the other TVs in the house with the same OTT experience. TDG said 48% of current NTB users are “likely” to purchase another box in the next six months, and 29% of total adult broadband users are likely to do so.

“The fact that current iSTB [net-top box] owners are significantly more likely than non-owners to buy

an iSTB speaks volumes about the multi-room future of iSTBs,” said TDG director of research Michael Greeson. “This in no way diminishes the extent of new demand, but it speaks to the fact that once a household owns an iSTB and understands its benefits, they want it on all their TVs.”

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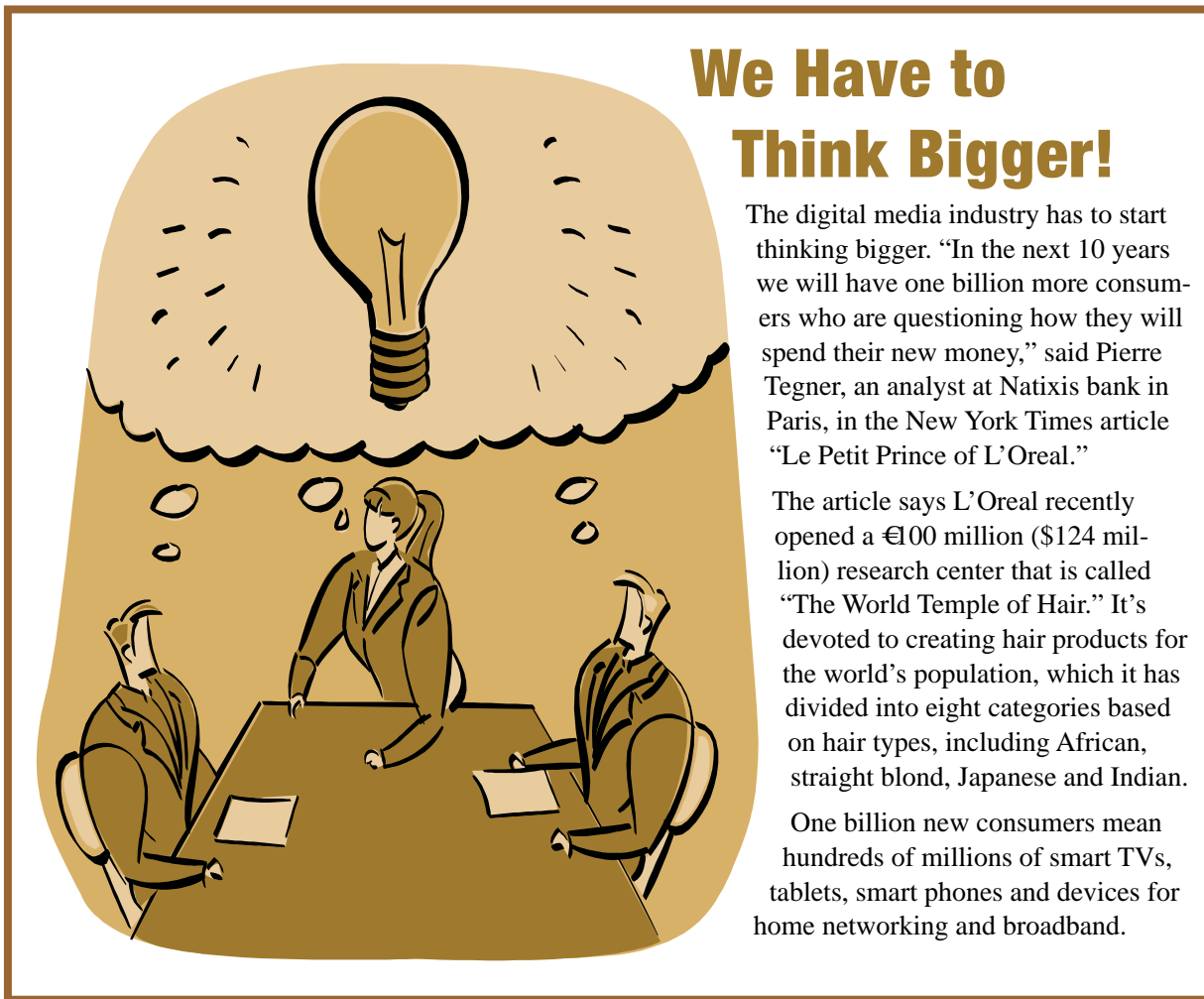
“Late Millennials, aged 18-24, are rightly a strategic priority for operators and networks.”

We Have to Think Bigger!

The digital media industry has to start thinking bigger. “In the next 10 years we will have one billion more consumers who are questioning how they will spend their new money,” said Pierre Tegner, an analyst at Natixis bank in Paris, in the New York Times article “Le Petit Prince of L’Oreal.”

The article says L’Oreal recently opened a €100 million (\$124 million) research center that is called “The World Temple of Hair.” It’s devoted to creating hair products for the world’s population, which it has divided into eight categories based on hair types, including African, straight blond, Japanese and Indian.

One billion new consumers mean hundreds of millions of smart TVs, tablets, smart phones and devices for home networking and broadband.



Ericsson Wins Award for LTE Broadcast

“The industry is in the midst of a global shift towards mobility and we see LTE Broadcast as crucial in enabling high quality video experience as this happens,” said Ove Anebygd, VP and head of TV at **Ericsson**, in response to winning “Best TV on the Move Service” award at TV Connect last week.

CenturyLink Idaho Says 1 Gbps Is Excessive

“It’s like having a fancy sports car. It might go 200 miles per hour, but what good does that do if the speed limit is 60?” That’s how **CenturyLink Idaho**’s VP and general manager Jim Schmit characterized 1 Gbps fiber speeds, according to the *Idaho Statesman*. Schmit said CenturyLink is continuing to invest in fiber networks and isn’t concerned about and potential future competition **Google** Fiber.

It’s the Non-TV Showings That Are Drawing the Viewers

A **BSkyB** executive released some figures about the premiere of the American drama series “True Detective,” according to the **BBC**. The live TV broadcast of the show attracted just over 200,000 live viewers, but if you add those who recorded it with Sky+, downloaded it or caught other screenings and you get a total audience of 1.8 million.

Main Themes at TV Connect in London

The main themes at London’s TV Connect trade show last week were, according to *Faultline*, the continued rise of pure OTT

services, companies helping mobile to cope with video and who will win out in an all IP world. RDK and other ways of making life easier and a bit cheaper was also something of another trend, it said, as were the emergence of new Chromecast alternatives and 4K

At the Top of Every Telco CEO’s List

The CEO of a major chipmaker told *The Online Reporter* that at the top of every telco CEO’s to-do list these days is delivering video within the home.

AT&T “No Free Lunch & No Cost-Free Delivery Of Streaming Movies”

AT&T has responded to assertions from **Netflix** CEO Reed Hastings that AT&T is threatening Net neutrality by demanding Netflix pays for the data its customers consume. AT&T’s James Cicconi said that there is “no free lunch and no cost-free delivery of streaming movies” — apparently forgetting that his customers are in fact paying for exactly that service. He seems to staggeringly confuse the fact that Netflix already pays its own ISPs to connect to the Internet and that AT&T customers pay AT&T to have that data delivered to their homes. AT&T wants to double-dip, to make up for all the ground it has lost to the cablecos in broadband in the past decade of mismanagement and poor innovation.” *Faultline*’s Peter White

Microsoft Office Comes to the iPad

When the plane is about to pull away from the gate, passengers start running to make sure they get on board. With tablets

and smartphones pulling away from Windows PCs in sales, **Microsoft** this week announced that it has developed apps for Microsoft Office for the iPad. Word, Excel and PowerPoint will be available, but not the Outlook email program. The apps are free but a subscription to Microsoft’s Office 365 service is required. Corporates may find it more practical to deploy iPads now that they can use Microsoft Office on them. It will also remove the need to buy a Surface tablet in order to use Office on a tablet. However, Office will have to compete against the already entrenched **Apple** iWork and **Google** Docs.

Roku’s Wood: Half of UK Consumers Stream Video

Roku CEO Anthony Wood estimated 49% of consumers in the UK stream video over the top regularly, speaking at TV Connect last week. He predicted that by 2017, there will be 120 million “streaming devices” in the UK.

ARRIS Eyes the HDMI Dongle Market, Too

ARRIS is planning to launch an HDMI streaming dongle sometime next year, according to CTO Charles Cheevers. ARRIS isn’t stepping outside its service provider turf, though. Cheevers said the net-top would be tailored to operators to offer an *a la carte* or pay OTT offering. Cheevers said the HDMI net-top box is a work in progress, and will be Chromecast-like. “We can build a more operator-friendly, more operator-powerful version of that,” he said, as reported by *Digital TV*.

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