

Telcos Can Finally See the Light of Day

- And It's Not the Light of All-Fiber Networks

For the first time since the early days of broadband service, there will be fierce competition in broadband services, which will drive speeds up and prices down – something that OTT-using consumers will love.

Telco-related G.fast broadband technology made most of the news at this week's Broadband World Forum.

For the first time, telcos have a clear path toward being able to quickly deploy affordable, very high-speed broadband networks that use telcos existing copper telephone wires – instead of making costly installations of fiber all the way into the home – and that can for the first time offer speeds that can compete against the cablecos' DOCSIS and the few service providers that have all-fiber networks.

With telcos having ramped up their copper wire speeds and become competitive, the next technology frontier is the network inside the home. Recent and coming advances in Wi-Fi, powerline and coax technologies will help fill consumers' need for speed and allow homes to stream as many 4K and other videos as they wish.

TOP HEADLINE

Wi-Fi Is the Achilles Heel of Broadband
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Actiontec's MoCA 2.0 to 11ac Wi-Fi Adapter Delivers the Goods

- 81 Mbps on the 5.0 Band Compared to Zero

- 53 Mbps on the 2.4 Band Compared to 9 Mbps

There is a major shortage of speed in residential Wi-Fi networks, which is creating lots of demand for Actiontec's WCB6200Q MoCA 2.0 to 11ac Wi-Fi that we reported on in TOR947. Millions of consumers and hundreds of broadband/TV service providers now realize that many, perhaps most, home Wi-Fi networks are not capable of handling the home's many streaming videos, especially now that 4K-capable TVs and mobile devices are making their way into residences by the millions.

This week we tested the WCB6200Q, which requires that an Actiontec Ethernet Over Coax

Adapter Kit be connected to the router - unless the router has MoCA built-in. It was relatively easy to install – except that our test home has a router in a location that is difficult to get to when adding gear to it directly. The WCB6200Q, which goes in remote rooms where there is a coax outlet, first has to be held near the router while powered up so that it can synch with the Wi-Fi network's ID so the user can use the same network names but with the extension "EXT."

Two coax cables, not supplied, are needed plus a coax splitter, also not provided, is needed for the remote room.

Instructions are clear with lots of pictures. The installation of both units, once we had the coax cables and the splitter, took about 30 minutes.

The results were outstanding. The master
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Sckipio: Win, Win, Win, Win, Win

- Proclaims: G.fast. G.faster. G.further. G.denser.

Sckipio and its G.fast technology continue to succeed in the broadband market – in both wins and new products. Sckipio says it now has 30 equipment makers as customers and collectively they are building 50 boxes with its chips in them. Most of them won't announce until one of their customers, a telco, announces. At the Broadband World Forum this week, ARRIS, ADTRAN, HFR, PTI and Calix were showing equipment with Sckipio's G.hn chips although no formal announcements have been made. BT is said to have Sckipio chips in some of the G.fast gear it's showing at the Forum.

When an equipment maker publicly announces, which most have not, that it will use Sckipio's chips in its products, it is almost a dead certainty that the equipment maker

orders from one or more telcos and that it and the telco have successfully completed their testing. It's no easy task to sell a telco a major new – and impactful – technology that telcos plan to deploy throughout their footprint. In short, these are not speculative deals.

ZyXEL

Sckipio's most recently announced deal is with ZyXEL, a well-known and respected maker of network gear that it sells to service providers and consumers. ZyXEL is developing a 16-port G.fast Distribution Point Unit (DPU) and a single-port G.fast bridge, both based on Sckipio's chipset, which it showed at London's Broadband World Forum. The single port G.fast to Ethernet bridge can be used with any existing residential gateway to upgrade existing copper-wire based customers to G.fast. These
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“Service providers need the ability to deliver fiber-like speeds to address regulatory and competitive challenges.”

“The Actiontec extender was 6 times faster than an 11ac router on the 2.4 MHz band and almost 9 times faster on the 5 MHz band.”

Actiontec: *continued from page ONE*

bedroom at the farthest point from the router inside the house had been a near deadspot. Now it has access to over 80 Mbps over the cableco’s 100 Mbps broadband. In short, it worked as promised. First time! Every time!

Actiontec says over 50% of homes have Wi-Fi deadspots. The test home is one of them, even with the newest **D-Link** and **Asustek** 11ac routers. Here are the results after installing an Actiontec extender in the master bedroom where there is a very real Wi-Fi shortage.

Speeds were checked with **ASSIA**’s CloudCheck app on an iPhone 5, which measures the speeds of both broadband and the home network.

MASTER BEDROOM

Speed from an 11ac router in the office/library on the 2.4 MHz band:

BB down	BB up	home network
11.4	3.7	8.9

Speed from an 11ac router in the office/library on the 5.0 MHz band:

No connection, so zero

Speed from Actiontec extender on the 2.4 MHz band

45	13	53
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Speed from Actiontec extender on the 5.0 MHz band

78	14	81
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The Actiontec extender was 6 times faster than an 11ac router on the 2.4 MHz band and almost 9 times faster on the 5 MHz band. The iPhone could not connect

Sckipio: *continued from page ONE*

devices will be available for customer deployment in Q2 of 2016.

ZyXEL’s senior director of CPE BC Kevin Su said, “G.fast is the most affordable way for operators of all sizes to quickly get to gigabit services. With ZyXEL’s new 16-port G.fast solution, service providers will be able to quickly and affordably add gigabit services to MDU environments.”

ZyXEL said the challenge to providing gigabit broadband is the last mile from where fiber ends to the residence. Once the fiber is installed to within a few hundred meters of the residence, G.hn can be

at all on the home’s 11ac router’s 5.0 GHz band.

Results? We’ll order another one as soon possible – as should everyone with deadspot-challenged Wi-Fi network.

The speeds we show are the actual Wi-Fi speeds in the room with the adapter as measured by an iPhone that is Wi-Fi-challenged by today’s Wi-Fi standards. The new iPhone and other new smartphones reportedly have higher speeds, which should show up in a CloudCheck test with them instead of the older models of smartphones.

Wi-Fi experts say that the 2.4 GHz band is for non-bandwidth intensive activities such as browsing, texting and email and that the 5.0 GHz band is for streaming high quality videos, gaming and other bandwidth sucking applications. The problems are that 5.0 does not cover very much area and 2.4 is slow.

The bonded MoCA 2.0-based WCB6200Q extender, which uses **Quantenna**’s 4x4 11ac Wi-Fi chips, is \$149. A pair of the bonded MoCA 2.0 Ethernet to Coax Adapter, the ones that plug into the router, is \$169. One is needed per router. There is no bundled price, at least not yet.

The cableco’s promised broadband speeds at the home where the testing was done is 100 Mbps down and 10 Mbps up but that will vary as the other homes in the neighborhood increase and decrease their broadband usage. You can tell when the kids in the neighborhood get home and start gaming and again when the adults get home and start watching **Netflix** – and gaming, too. So, you want to make sure your home network gives you all the broadband speed your home gets.

used over the existing copper wires into the home – particularly useful in multi-dwelling units (MDUs) where the cost and right of way access to bring fiber to each resident is problematic.

Sckipio Technologies co-founder and CEO David Baum said, “ZyXEL will bring world-class G.fast technology into many important densely populated markets across Asia, Eastern Europe, and North America. It’s a win, win, win, win. Sckipio wins by working with a partner with strong global reach. ZyXEL wins by leveraging Sckipio’s highly acclaimed G.fast technology. The operators win by delivering the lowest cost per megabit delivered in

Sckipio: *continued on page THREE*

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the fastest time and with the lowest capital outlay, and consumers win with a lower cost, higher performing Internet without the hassles of in-home installers and long deployment delays.”

ZyXEL networking products are used by more than 400,000 businesses and 100 million consumers worldwide. It has a presence in 150 countries.

Cambridge Industries Group (CIG)

Last week, Skipio announced a deal with the prestigious Shanghai-based Cambridge Industries Group (CIG), which is making its entry into the G.fast market with a new Skipio-based G.fast product for consumer premises (CPE). CIG says it is the world’s number one supplier of optical network gear and is known its R&D skills in wired and wireless CPE, especially for FTTx GPON. Many top tier OEMs purchase customer premises equipment from CIG. The deal paves the way for Skipio to get its chips into some of the world’s largest telcos because CIG has built a large business by developing and manufacturing CPE gear for both the carriers and large enterprises including fiber to the home and building, FTTdp, Wi-Fi, smart home, IoT, residential NAS devices, small cell plus DSL technology such as VDSL and, now, G.fast.

New G.fast Products Too

Skipio is not resting on its wins. This week it announced three new products – two are its own and one from a third party.

1. Telcos that have connected homes with two pair of copper phone wires, many of which are in North America, can use them to provide up to 2 Gbps by using Skipio’s G.fast chips. By bonding the two pairs of wires, telcos can offer over 1 Gbps in aggregate throughput across a distance of 300 meters, which Skipio called “the fastest in the world at that distance.” The two bonded pairs are connected to a single G.fast-enabled CPE. Skipio said that by using bonding, telcos can compete very effectively against both cablecos and their DOCSIS 3.1 networking and against all-fiber services, such as **Google Fiber**, that have deployed fiber to the home.

AT&T probably has the most residences with two pair of copper phone wires of any telco. AT&T may

need G.fast bonding to fulfill gigabit promises it made to the FCC in order to get the FCC’s approval of its acquisition of DirecTV. Second in size in bonding footprint is probably **CenturyLink**, which seems almost certain to deploy G.fast. However, it still seems unlikely that **Verizon** will deploy G.fast in its dwindling copper wire footprint.

One downside of bonding is that it requires a truck roll somewhat like FTTH deployment does (although with far less expense and labor).

Skipio’s Baum said, “Bonding is an important requirement, especially with North American operators. Service providers need the ability to deliver fiber-like speeds to address regulatory and competitive challenges. Even better, Skipio allows the service provider to provision such performance only where necessary – keeping overall CapEx and OpEx costs low when gigabit speeds are not required.”

The G.fast bonding solution is based upon ITU-T G.998.2 and was completed in partnership with **Calix**, who claims it is the largest supplier focused solely on access and broadband communications; and with semiconductor maker **5VTechnologies**.

2. Skipio has doubled its G.fast port density from 16 to 32 with what it said is the world’s first G.fast Distribution Point Unit (DPU) that supports 32-ports of vectoring. That means the compact unit can distribute vectoring across 32 copper telephone pairs in a single distribution side device. Skipio called it ultra-affordable, the first of its kind and the largest G.fast port density in the market. Skipio’s Baum said, “Operators globally crave more port density. Now, they don’t have to wait. Operators can benefit from Skipio’s highly acclaimed G.fast chipsets without having to wait for next-generation chipsets.”

3. Skipio has partnered with **Simpler Networks**, the leader maker of the copper wire distribution frames that are used in MDUs, to develop a high-density 32-port G.fast Distribution Point Unit (DPU) with Simpler Network’s EZ-Edge 100-port Automated Distribution Frame. Telcos can use the frame to pre-wire every residence in a 100-ubit MDU – and at half the cost.

Typical broadband take rates for telcos run around 20-30%. This means that a 100-unit building can be

Skipio: *continued on page FOUR*

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“The speeds we show are the actual Wi-Fi speeds in the room with the adapter as measured by an iPhone that is Wi-Fi-challenged by today’s Wi-Fi standards.”

“It’s a no-brainer.”

“G.fast.
G.faster.
G.further.
G.denser.”

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completely covered by a single 24 or 32-port DPU when combined with a Simplr Networks EZ-Edge Automated Distribution Frame (ADF). Service providers pre-wire all the apartments in the MDU to a Simplr Networks ADF, which connects active ports to any Skipio-enabled G.fast DPU. Since both devices can be remotely controlled, the combined DPU/ADF solution can eliminate truck rolls -- reducing operators’ OPEX and CAPEX by over 50%.

Mike Perrault, president and CEO of Simplr Networks, said, “It’s a no-brainer. Together our solution cuts G.fast deployment costs in half and allows for complete flexibility in terms of the type of G.fast DPU that gets installed. Port counts on both sides of the system can be optimized to conform to each operator’s unique environment.”

4. Skipio was named Best Fixed Broadband Access Solutions winner at the 2015 Broadband World Forum Awards, competing against Alcatel-Lucent, BT, Huawei, Triductor Technology and Vodafone UK.

Skipio’s booth at the Forum had a sign that summarizes the company’s motto:

G.fast. G.faster. G.further. G.denser.

G.fast Could Help AT&T Fulfill the Broadband Promises It Made to the FCC

- Skipio May Become Part of AT&T’s Solution

This is extracted from a *Faultline* report.

The key to AT&T’s deal with the FCC over the conditions under which it could acquire DirecTV was for it to become a viable broadband supplier in the US. This was worded as “Within 4 years, AT&T will offer its all-fiber Internet access service to at least 12.5 million customer locations, such as residences, home offices and very small businesses.” These were effectively additional lines summed up by “Combined with AT&T’s existing high-speed broadband network, at least 25.7 million customer locations will have access to broadband speeds of 45 Mbps or higher.”

Faultline contends that a G.fast line, especially a bonded G.fast line, would allow AT&T to meet that condition. It could meet it even with VDSL vectored lines, but since G.fast is on the way to being much the same price to install as Vectored VDSL, AT&T could

go this route. In all headlines to date these lines had been considered to “have to be” fiber.

However AT&T does that, its loop lengths must continue to get smaller and smaller, but any order from AT&T could become the “big one” in terms of dictating who is winning in the broadband war. Remember AT&T created the DSL business when it first gave a contract to tiny **Amati Communications**, a business led by the current ASSIA CEO and founder, John Cioffi. That company was bought the day after the order was placed by **Texas Instruments**, and you wouldn’t bet that something similar could happen once again.

If AT&T remains with **ARRIS** (Pace 2Wire) as its incumbent for home gateways, that business may go to **Skipio**. If it remains with **Alcatel** as its broadband infrastructure partner that may go to an Alcatel solution – however, critical to Skipio’s ambition in this area is to open up Alcatel products to the lure of its chip.

Right now Alcatel is tied to the **Broadcom** chipset, separating its 30 or so trials around the world into those that only use the Broadcom’s G.fast chips, and those which also do the cross talk cancellation on the line cards installed in the central office, on chips designed by Alcatel.

But one announcement by Skipio at the show as a new relationship with China’s **Cambridge Industries Group** (CIG), an independent technology firm which supports ODMs in building devices around new technologies such as G.fast. To date CIG has been focused on GPON. If Alcatel is told by a major operator such as AT&T “We want this chip inside a box that links to a GPON back end,” it would ask companies like CIG if it can show a working integration – rather than lose the business, and then it can rapidly adopt it. It is one way into Alcatel and many of the local Chinese ODMs, and this deal speaks to Skipio thinking about the future, and how to nail down a deal like AT&T. Since that Amati deal, AT&T has been fairly slow to finally order new devices, but is always an early partner in chips built by start-ups. Look at how it has adopted **Quantenna** Wi-Fi chips into its CPE, after just the second Quantenna chipset – that deal leading to key investments in Quantenna at a critical phase in its development.

Alcatel may find the CPE deal at AT&T goes to ARRIS, while the infrastructure part of a deal goes to Alcatel – it has to be ready for such an eventuality.

Different Strategies – Which Will Pay Off?

Coming from a common heritage, **AT&T** and **Verizon** are on different paths seeking growth in the video business.

AT&T is currently pursuing a satellite based business and betting on television following its \$49 billion purchase of DirecTV, vaulting it to become the largest pay TV company in the US. As for its future with DirecTV AT&T envisions cost savings, gaining negotiating power with content companies and eventually merging its U-verse video platform to create a common service and offer national bundles of wireless and cable that the company believes to

be unmatched by its competition. AT&T has also already reached a multiyear agreement with **Viacom** for programming on U-verse and DirecTV.

Doubt looms over AT&T's strategy though as video-consumption habits shift rapidly consumers seem to be turning away from cable TV and service bundles like the ones being offered by AT&T.

Verizon on the other hand is building out a mobile video service called go90 to target millennials and it is reportedly costing the company a few hundred million dollars. Focusing on wireless, Verizon's move still places it in the crowded video space competing for the eyeballs of young mobile users.

“First, there are no 4K linear TV channels.”

4K/UHD (ULTRA HIGH DEFINITION)

TiVo's New Bolt DVR/NTB Falls Short on Upconverted 4K Picture Quality

Last week we reviewed the new **TiVo Bolt** and found it lacking in picture quality, compared to its predecessor, the TiVo Premier, when playing on a **Samsung 4K TV**.

Some background - first, there are no 4K linear TV channels. Pay TV channels are all 720p, 1080i, 1080p and lesser resolutions. The only 4K coming into the home today is from OTT services like Netflix, M-GO, UltraFlix and Amazon. That means all the content from pay TV channels is upconverted by the UHD TV to near 4K video quality - some even claim their sets upconvert to actual 4K quality. Of the TVs we tested, Samsung, even in its 2014 UHD TV models, did the best job of upconverting – turning 1080p and many lesser resolutions into as close to 4K as you can get.

At the time, we bought the Samsung UHD set, it was connected to TiVo's Premier model. It was plug-and-play to watch the most stunning pay TV channels imaginable. We did nothing to the Premier or the Samsung. We assumed the same would happen when we plugged the TiVo Bolt into the same Samsung UHD TV. But it wasn't. The pay TV channels no longer appeared to be upconverted so the picture quality was the same as, or maybe even a bit less than, 1080p TV sets.

We called TiVo technical support and were told we “must” use the HDMI 2.0 cable that came with

the Bolt. We subsequently installed it but saw no difference in picture quality.

The lesser quality is particularly noticeable when the TV channel is playing a 720p/1080i/1080p picture. The Samsung upconversion technology when connected to a TiVo Premiere really knocked picture quality out of the ball park with a stunning near-4K picture. Not so the Bolt.

We cannot find any settings in the TiVo to change that.

Frankly a consumer in the same situation – accustomed to Samsung's outstanding upconversion feature would return the Bolt. People who buy 4K TVs want the very best picture quality and having seen Samsung's upconverted video they don't want to go back to “ordinary.”

We have asked TiVo, “Any idea what could be causing the problem and how to fix it?” A TiVo support person made several suggestions, including making sure the HDMI 2.0 cable from the TiVo was plugged into the TV's HDMI 2.0 port, not one the HDMI 1.4 ports. He also suggested we try changing a setting in the TiVo setup that governs which resolutions it would receive. None of them improved the picture quality.

A second TiVo support person first said we'd have to return the Bolt because our 30-day money-back period was about to expire. After getting a very helpful tech support supervisor on the phone (all this takes hours), she agreed to extend the money-back period. She also suggested several changes to the Bolt's video input, none of which appeared to restore the picture quality

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“All the content from pay TV channels is upconverted by the UHD TV to near 4K video quality.”

4K/UHD (ULTRA HIGH DEFINITION)

TiVo: continued from page FIVE

to what it was when the TiVo Premier was connected. I agreed to do more testing with the different video input settings and she promised to do some more checking. The case is still open.

Too Many Have Their Heads in the Sand about 4K

One of the problems in dealing with people in this industry is that they don't know 4K. They don't have 4K sets and so are not accustomed to the clarity and ability to upconvert 1080p and lesser video resolutions to near 4K. They have never seen the wonders that upconversion technology can do to convert ordinary resolutions into stunning near-4K picture quality because they don't have 4K TVs.

The problem is not only with TiVo's support department. We have heard executives at major pay TV services, many of them in charge of the company's pay TV technology or the content, who did not own a 4K TV set. At the prices that quality 4K TVs are selling for, there is no excuse for anyone in this business, whether in content or hardware, not to own and use a 4K TV.

All the doubts raised by 4K skeptics have been answered – except the one about waiting for new technology – and that will always be with us. If consumers are supposed to wait for the next TV technology, why not wait for 8K? Why not wait for next year's tablets and smartphones?

4K is here now. 4k is the future. Get with it. Get one this weekend and start enjoying the very best picture quality a TV set can offer – and at the same time get view of the future of video and think about 4K's impact on the various sectors of the industry.

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“One of the problems in dealing with people in this industry is that they don't know 4K.”

“4K is here now. 4k is the future. Get with it. Get one.”



October 23-29, 2015

“The subscription works across all devices.”

“YouTube will continue operating a free, ad-supported version of the site.”

OTT

Alibaba Makes \$4.6 B Offer for Remainder of Youku

Alibaba made a \$4.6 billion dollar cash offer for the remaining 81.7% of **Youku Tudou Inc.** it did not already own.

Alibaba is seeking to stream more video content to Chinese Internet users and owning Youku Tudou would help the company to deliver US films and series to over a third of China’s population. The online video market in China is massive, the China Internet Network Information Center reported that as of June over 461 million people in China had consumed online video and 354 million users accessed mobile video from a mobile phone. For some perspective, that is larger than the entire US population, so Internet attention is crucial.

Youku Tudou, which has not posted a profit since its initial public offering in 2010 confirmed it received the proposal. Currently the company, which mostly streams professionally produced content, is zeroing in on US studios for programming, a plan that coincides with Alibaba’s vision.

YouTube Going Ad-Free – For a Price

YouTube has announced the launch of its first paid subscription - YouTube Red, available in the US beginning October 28th. The service will cost subscribers \$9.99 per month but YouTube is offering a one month free trial.

YouTube Red subscribers will experience unlimited ad-free content and will be able to save videos for viewing offline on a phone or tablet and play videos in the background. Starting early next year YouTube Red subscribers will also have member-only access to new, original shows and movies from YouTube’s most popular content creators.

The subscription works across all devices so anywhere a user signs into YouTube, YouTube Red is accessible. This includes YouTube’s recently launched Gaming app and soon to be available Music app. **Google** has also announced that YouTube Red subscriptions also work with Google Play Music so subscribing to one automatically grants access to the other.

ORIGINAL ONLINE VIDEOS

You’ll Need Your Wallet for YouTube’s Slew of Subscriptions

Viewers may soon be pulling out their pocketbooks to watch YouTube’s new slate of programming, available only to those who join its upcoming subscription services.

Last year YouTube said it would fund new content from some of its top creators and this new subscription service is the resulting product. At least some of the content bringing in revenue will be a bonus for the premium subscription service as well as features like ad-free videos.

Alongside the premium subscription service, YouTube will continue operating a free, ad-supported version of the site and all of the videos appearing on the free site will be available on the paid version.

Back in 2011 YouTube spent \$100 million to

fund new content from well-known content-makers, musicians and actors, but the video industry largely considered the effort a failure. This time YouTube is varying its strategy and concentrating their efforts on funding endemic video stars – people who have reached masses of YouTube’s young audience and therefore are already successful at appealing to viewers through YouTube.

Some of those new programs were announced this week. A few of the programs announced are: “Scare PewDiePie” a reality-adventure series, “Sing It!” a scripted comedy, “Lazer Team” a feature-length action-comedy, “A Trip to Unicorn Island” a feature-length movie, “Single by 30,” a romantic drama series, “Fight of the Living Dead,” a social experiment reality show and “I Am Tobuscus,” a scripted comedy.

When the new programming will be available is still

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ORIGINAL ONLINE VIDEOS

You'll Need: *continued from page SEVEN*

unclear as of now. Only time will tell if viewer loyalty holds up when peoples' pennies are on the line.

Sponsorship Rollout

Modeling the gaming site Twitch was estimated to have brought in \$36 million per year from subscriptions before it was bought by **Amazon** last year, YouTube has just launched its "sponsorships," four dollar monthly subscriptions for a handful of gaming-related channels.

The sponsorships are not traditional subscriptions, granting subscribers exclusive content that isn't accessible otherwise. The sponsorships are for the most part symbolic and grant subscribers perks such as unique icons beside their usernames during live video sessions and access to sponsor-only chat rooms during those videos.

All of the videos on the sponsorship channels will still be free for everyone, subscriber or not. So why pay for something that is free? Ryan Wyatt, YouTube's global gaming head, said "The thing we care about the most is watch time. That's the true value of how much content is being consumed." And viewers watch 144 billion minutes of gaming videos per month, if that is any indicator of just how important gaming has become on YouTube. So the odds are that there will be viewers who pay the \$4 per month for the special perks that go along with being a sponsor on the channel.

Netflix Ventures into Feature Films for Global Growth

This past weekend was marked by the release of Netflix's "Beasts of No Nation" on its streaming service and in a small number of theaters. The move is notable as the company pushes to establish a presence in feature films by taking a different approach than that of the major film studios. As the major studios focus on international-oriented blockbusters and TV shows and cut back on everything else, Netflix is making the type of movies that studios no longer do, signaling a revival on the small screen for prestige dramas and mid-budget star vehicles. This move results in an evolving catalog from a model of simply exporting

US shows to one which creates original global content for all of its members, not just the local ones.

Netflix's goal with this new venture is to produce a diverse slate of films that will keep existing subscribers happy as well as draw in new subscribers. In the US it could be suggested that the Netflix market is approaching saturation at 43 million members and while there are around 95 million US broadband households, the core Netflix user is between the ages of 18 and 44 with 67% of Netflix users and 36% of the US population fall in the age bracket. Meanwhile, 23% of the US is under 18 years old and unable by law to subscribe and 41% of the US is over 45 years old and it could be said that the older, tech-savvy users already subscribe – in short, people who want it already have it. But, outside of the US the odds are much more favorable as OTT penetration remains low, Netflix is competing with various local OTT players for the early adopters in the market. Netflix still has yet to launch in Spain, Italy and Portugal not to mention markets in Central and Eastern Europe, Africa and Asia, aside from Japan. These entire untapped markets signal that global saturation is still years away for Netflix and already it is expanding into global content for current and future subscribers.

The company's economic model and desire to make a statement to the creative community as it enters into the film territory has led to it paying more for some movies than major studios were willing to pay, despite the fact that a majority of films made outside of the studio system fail to gain much attention or revenue.

Perhaps the company's 69 million global subscriber reach, optimistic future for international growth and willingness to buy these shunned movies could help to change the equation.

So far the outcome has not been overly impressive.

"Beasts of No Nation", originally unable to find a studio, was purchased by Netflix for \$12 million dollars, double its production budget. Because most major theater chains do not play movies that are also available from home, the film was only shown in 31 theaters in the US, grossing just \$50,699, a poor outcome even considering it was such a small theater release. Although one of the goals for Netflix

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"The thing we care about the most is watch time."

"Outside of the US the odds are much more favorable as OTT penetration remains low."

ORIGINAL ONLINE VIDEOS

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in producing this film was to make it eligible for the Academy Awards, (the reason why it had to be released in theaters at all) the underwhelming gross from the movie could be a sign that people are unwilling to pay for a ticket to watch a movie they could watch at home for no extra cost than what they already spend on their Netflix subscription.

In keeping with the strategy the company uses for episodic series, Netflix's movie selection process is largely data-driven, so there is a method to its madness. In the case of "Beasts of No Nation," the similar film "The Last King of Scotland" has performed well on the service. Other films scheduled on its lineup such as Adam Sandler's "The Ridiculous Six" was picked up due to the popularity Sandler's past films have shown on Netflix. Premiering in December, the film was picked up in a similar fashion to "Beasts of No Nation," by out-bidding the other studios. The same can also be said for Brad Pitt's "War Machine," also slated to release through Netflix.

But why pay so much for films already struggling to find a studio for production? Well, revenue comes in differently for films released straight to the small screen. In a typical theater release the talent is paid in part through a percentage of the revenue generated at the box office, on DVD and other media but this revenue sharing is not possible with a release to Netflix so the company must incorporate into the whole budget what the talent would earn if the film were to do well commercially.

It is a risky approach to the film industry but it could pay off for Netflix if they play their cards right. As of the end of the third quarter Netflix has added fewer US subscribers than expected and new global content in the form of feature films at no extra cost to subscribers could be the influence that both local and international non-subscribers need to make the commitment to Netflix.

Cancellation Means Nothing – Streaming Services Creating 'Zombies'

Left and right it is like our prayers have been answered as more and more cancelled television series are

coming back from the dead. The days of cancellation being the end of the road for a TV show are in the past and we have OTT video streaming services largely to thank. As the landscape of television changes before our eyes the video streaming services are going by their own rules and profiting from cancelled and old shows and movies.

The streaming media platforms are reviving cancelled television shows and capitalizing on sustained fan interest. It is a genius move on the streaming services' part. It is simply building on what has already been built except by streaming media platforms that are hungry for exclusive content that is ready-made with built-in fan bases. As they say, one man's trash is another man's treasure and this is no different.

This could perhaps be the most sure-fire way of knowing a show will bring forth viewers. Like eating a bowl of a recently revived breakfast cereal once discontinued, the nostalgia of it alone is enough to draw people in and that could be the key to the success of this model. Stories are repurposed all the time, movies are constantly remade, why not revive a TV show that is well-liked and still has something left to give?

This seems to be the sentiment of many of the OTT players and unlike traditional linear television, streaming TV has the benefit of being able to compress time. Past viewers can re-watch old episodes or skip straight to new episodes and new viewers can binge on a series as if there were no hiatus at all, creating a nearly seamless viewing experience.

Netflix Bringing Back the Dead

Netflix is conjuring the dead in large quantities, leading the way by reviving cancelled television shows and even a movie. Netflix has been busy creating spin-offs, prequel series, remaking series, completing series cancelled without a series finale, and bringing back beloved series. You name it Netflix is doing it and the business model seems to be working.

Netflix's hit series, "House of Cards" is an adaptation of a BBC mini-series of the same name and it is arguably Netflix's most successful and popular original series. Netflix revived Fox's cult

Cancellation: *continued on page TEN*

"It is a risky approach to the film industry but it could pay off for Netflix."

"You name it Netflix is doing it."

ORIGINAL ONLINE VIDEOS

Cancellation: *continued from page NINE*

hit show, “Arrested Development” airing a fourth season in 2013 with a fifth season reportedly in the works. Netflix took the movie “Wet Hot American Summer” and brought back the star-studded cast from the original film for a prequel series called “Wet Hot American Summer: First Day of Camp”.

The highly popular “Full House” is being brought back by Netflix in the form of a spin-off series called “Fuller House” starring some of the original cast members. The comedy series from a Canadian cable channel, “Trailer Park Boys” has been rebooted by Netflix which promises to air two new seasons that have already been filmed and a tenth season is reportedly in development. Reportedly Netflix is also rebooting the WB’s “Gilmore Girls”, partnering up with the show’s original creator, writer and producer for four new 90-minute episodes.

And that isn’t even a full list of all of the Netflix revivals if that gives any perspective of the amount of effort going into this model on Netflix’s part.

Netflix Isn’t Alone in the Revival Business

Netflix isn’t the only OTT service giving life to cancelled television series. **Hulu** recently picked up “The Mindy Project” not long after it was given the boot by Fox. Hulu debuted a fourth season of the show last month on the streaming service. **NBC**’s comedy series *Community* was picked up by **Yahoo** and a sixth season of the show aired on Yahoo Screen earlier this year. ABC cancelled its “Manhattan Love Story” after only four episodes aired but Hulu announced it will air the remaining seven episodes of the season beginning in December, giving the series closure if nothing else. Hulu took the same approach for ABC’s other axed rom-com series, “Selfie”, announcing it will air the show’s remaining episodes in the first season. BBC’s “Ripper Street” was cancelled after its second season but picked up by **Amazon**’s UK division for the third season to be aired through the streaming service first before BBC aired it.

OTT the Home of Second Chances

OTT services are posing another threat to pay TV by reviving its dead and showing no signs of stopping, creating an army of zombie shows, brought back to

life with a vengeance. Older shows that have been long-dead and are then revived carry with them a large fan base eager to tune in to new episodes of an old favorite. Saving newer shows means fans of the show will switch to watching the service that picks up the show so they can continue watching even if it is just to see how it ends. This model almost guarantees viewers before new episodes ever even air.

Rebooting shows that have or once had a strong fan base is a relatively small risk for OTT services and the reboot can bring with it a huge reward. Judging by the success Netflix has had in the space, reviving old content or saving cancelled shows from disappearing forever is the best way to create new exclusive content without the hassle of creating new shows entirely from scratch, not knowing if the content will attract or retain viewers. Netflix has an impressive catalog of revivals. The line-up is not only strong but it is diverse as well. Netflix is offering a wide selection of revived content from a variety of sources and it is the most popular OTT streaming service out there. Somehow OTT is making it work where TV networks couldn’t. It could be that OTT has less to lose with no precious air time to worry about wasting on a show that doesn’t bring in high ratings. Whatever the case, the method is working, and other OTT players are following Netflix’s model.

“Netflix isn’t the only OTT service giving life to cancelled television series.”

“The reboot can bring with it a huge reward.”

The logo for the Multiple Sclerosis Society, featuring the letters 'MS' in a bold, sans-serif font. The 'M' is black and the 'S' is orange.

Multiple Sclerosis Society

Rider Research supports the work of the National Multiple Sclerosis Society.

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

Please visit the Society’s Web site and consider a donation.

<http://www.nationalmssociety.org>

or call 1-800-fightMS



October 23-29, 2015

BROADBAND BEAT

AlcaLu's G.fast Makes a Landing at Australia's NBN

Remember when Australia's much heralded and government-backed National Broadband Network (NBN) was going to build a nationwide all-fiber broadband network. It is now seriously evaluating the use of the copper wire based G.fast technology to deliver its all-fiber promises. The move shows a) all-fiber's many limitations and high costs when it comes to deployment and b) how far G.fast has come in terms of availability and reliability – to say nothing of the fact that G.fast's speeds are more than most consumers need – at least today.

Alcatel-Lucent and NBN have conducted a successful trial of G.fast technology in Australia. NBN is evaluating broadband technology as part of its mandate to rollout high-speed broadband access to 8 million premises by 2020.

It appears NBN has abandoned its all-fiber dreams.

NBN says it's in the midst of building a national broadband network by using a mix of technologies – not only fiber. It's guided by Australia's vast size, geographical diversity and mix of urban centers and far-flung rural communities. Its goal by 2020 is to provide a minimum of 25 Mbps to eight million premises and at least 50 Mbps to 90% of premises that have fixed-line access.

AlcaLu said the trial - conducted over the past month – showed that the copper wire based G.fast over the last few hundred meters to the residence “can complement NBN's existing multi-technology deployment toolkit” and prompt NBN to “evolve its capabilities.” AlcaLu said G.fast can, over the last few hundred meters to the premises, achieve speeds of close to 1 Gigabit per second. That makes it possible – affordable – to provide high-speed broadband in areas where all-fiber is difficult to deploy. G.fast also eliminates the need to rewire premises, which is a costly and time-consuming part of all-fiber deployments.

Alcatel-Lucent is a key supplier of fiber and VDSL2 Vectoring equipment to NBN, which is using fiber-to-

the-node (FTTN) and fiber-to-the-building (FTTB) component using VDSL Vectoring plus fiber-to-the-premises (FTTP), hybrid fiber coaxial (HFC), fixed, wireless and satellite technologies.

AlcaLu says its high-speed broadband product portfolio allows telcos to “meet the challenges of any environment with a mix of copper and fiber technologies.” It has 34 G.fast trials with telcos such as the recently announced BT trial plus the first G.fast commercial deployment with Chunghwa Telecom. Sean O'Halloran, president and managing director of Alcatel-Lucent Oceania said: We share NBN's ethos that no one technology fits all, especially for a deployment such as this one. We can offer operators a mix of fiber and copper technologies that they can use to deploy broadband more quickly and cost-effectively, while planning for the future. This trial represents a growing momentum as more service providers recognize the potential of G.fast.”

More AlcaLu Announcements

In addition to the NBN announcement, Alcatel-Lucent made several broadband-related announcements at this week's Broadband World Forum.

1. A new G.fast multi-port micronode that helps operators use G.fast technology to serve subscribers.
2. The first commercially available Vplus products, a broadband technology that AlcaLu appears to be the only major backer. Vplus is a DSL technology that helps telcos fill the gap between VDSL2 vectoring and G.fast. It provides a quick and simple way for telcos to high speed broadband over longer distances to more customers.
3. A new fiber solution that includes an optical network unit for home deployment, which supports multi-gigabit services and enhancements to its fiber-to-the-home platform that adds the switching and uplink capacity, which is critical for large-scale multiple-gigabit deployments.

“Its goal by 2020 is to provide a minimum of 25 Mbps to eight million premises and at least 50 Mbps to 90% of premises”

“meet the challenges of any environment with a mix of copper and fiber technologies.”

BROADBAND BEAT

BT has Fallen in Love with G.fast and Its Successor XG.FAST

BT and Alcatel-Lucent used the Broadband World Forum to announce tests of the new XG.FAST copper wire based technology that is capable of up to 5 Gbps. Yes, G! Not M as in Mbps!

The two companies said they are conducting early lab trials of the experimental XG.FAST, which they said demonstrates that “G.fast technology is future proof.” Speeds of 1.8 Gbps have been reached in trials at a distance of over 100 meters. The two said they give BT confidence that “G.fast is a future proof technology.” Since 2007 BT has been a major backer (and pusher) of G.fast in all its iterations. A multi-gigabyte G.fast would help BT provide fiber-like speeds to consumers and at a much lower cost of deployment.

XG.FAST has delivered aggregate speeds of 5.6 Gbps over 35 meters of BT cable, a record for full-duplex data transmission over a standard single BT line at this distance. It provided aggregate speeds of 1.8 Gbps over 100 meters. That’s a significant distance because most UK residences are within 100 meters of their nearest distribution point – on a pole or in a box.

BT has promised to deliver ultrafast speeds to 10 million premises by the end of 2020, and to most of the UK by the end of 2025. G.fast is currently being trialed by BT’s Openreach in Huntingdon and Gosforth at speeds up to 330 Mbps down. If the trials prove successful, and BT added, if UK regulation continues to encourage investment, it aims to start deploying G.fast in 2016/17 together with its fiber-to-the-cabinet and fiber-to-the-premises services. It expects G.fast speeds to increase up to 500 Mbps.

BT said G.fast will transform the UK’s broadband landscape and be a technology that has room for significant improvement.

Mike Galvin, managing director of next generation access for BT’s technology service & operations division, said: “We know that G.fast will transform the UK’s broadband landscape but these results also give us confidence the technology has significant headroom should we need it in the future. Those who

argue otherwise aren’t being realistic and should look at Australia where the authorities have changed tack on their fiber deployment and followed our example.”

Vodafone Extends Its Broadband Reach in UK

This appeared in *Wireless Watch*

The UK has probably the most competitive wireline broadband in the market. The government regulator Ofcom requires that the incumbent telco BT make access to its broadband network available to competitors such as Sky, Vodafone, TalkTalk and EE (the Orange & T-Mobile venture) some of whom have also built and/or acquired parts of their own network. Liberty Global’s UK cableco Virgin Media has also been very aggressive in the pricing, speed and coverage of its DOCSIS network. By comparison, most US residences have the choice of only two wireline broadband services: the phone or the cable TV company. In a very few areas, Goggle either has or has promised to build its Google Fiber service. In most cases Google Fiber is in AT&T’s footprint and so AT&T has been motivated to build a GB-capable service, using either all-fiber or a combination of fiber-close-to-the-home and existing copper for the final link.

Vodafone, which raked in billions from its sale of the 45% of Verizon Wireless that it once owned, has shown the full extent of its wireline broadband ambition in its native UK, opening up its new broadband router for countrywide distribution to any of 22 million homes. The UK only has about 25 million phone domestic connections, so that’s almost all of the country.

The service was beta tested in June with Vodafone’s own smartphone users, but now goes on sale to everyone. The giant cellco cited some of the lowest prices in the UK (just £5 a month for existing customers for a 17 Mbps line) and speeds up to 76 Mbps for just £25 a month or £20 for existing customers. Most lines in the UK are at 50 Mbps or below, with Virgin being the exception offering a 200 Mbps line using DOCSIS.

These are the first steps towards Vodafone’s quad

Vodafone: continued on page THIRTEEN

“G.fast technology is future proof.”

“We know that G.fast will transform the UK’s broadband landscape.”

BROADBAND BEAT

Vodafone: *continued from page TWELVE*

play offering and it now has broadband and home phone services, plus it will give one year's free Netflix subscription to each home which takes broadband. Its full TV offering has yet to be outlined, which will make it a full quad play, but is due before Christmas. Elsewhere in Europe Vodafone is offering three or six months free Netflix in similar offers.

Vodafone already has 12.3 million broadband lines in the world with some 11.5 million of those being around its core markets in Europe. It gained almost 6 million of these with the acquisition of **Kabel Deutschland** in Germany and Spain's **Ono**. In the past it acquired **Tele2** broadband lines in Italy and Spain and has been building out fiber in Spain, Portugal and the Netherlands, where it recently launched into the TV market. Vodafone is impatient to have fixed line support for its cellular services in all of its major markets.

While Vodafone might be starting almost from scratch in broadband in the UK, it has remained one of the world's leading mobile phone companies confirming that it now has 449 million mobile customers.

Vodafone's UK acquisition of **Cable and Wireless** brought it direct DSLAMS at 500 exchanges, which deliver VDSL-like speed, and over 900 exchanges with basic ADSL, but it said previously it could only reach 60% of the UK's broadband population. Therefore, it is likely that it also signed a wholesale agreement with BT to achieve the remaining customer reach, which equates to about 88%.

One of the highlights of Vodafone's June launch was its choice of a router driven by **Broadcom** chips, which offers significant home control. It offers unlimited data, and users can "boost" the service – effectively ask for one device to get priority speeds – or 'beam,' which turns on beamforming, and gives more speed to multiple antenna devices. The default is family setting and it has guest Wi-Fi, and can set devices' times of day when Wi-Fi is available to them, for instance to cut off children's devices at bed time. This is all controlled by a companion app.

Qualcomm Claims Full ChipSet: G.Fast, 35b, Wave 2 Wi-Fi & AV2

- Launches the Ikanos G.fast Chip

Faultline attended this week's Broadband World Forum and filed this report.

Qualcomm has done what **Ikanos** failed to do in the two years running up to its acquisition by the phone chip giant Qualcomm – it launched a G.fast chip at Broadband World Forum. Already, the French gateway maker **Sagemcom** has taken the chips to create a home gateway product so they must exist. Sagemcom is a strong supplier to the top telcos in France, one of the densest telco broadband environments in the world.

There are launches and then there are launches. Some companies wait until they have the silicon, some wait until they have tested the silicon and can vouch for its performance, while others talk big when a chip design is merely complete. In this context we are not sure precisely where the Ikanos chip is and have reached out to Qualcomm for confirmation, but that has not been forthcoming this week, although we are expecting a briefing next week. Ikanos was known to be substituting an improved VDSL chip in demos during the past year, supporting the emerging VDSL 35b profile standard, which uses a full VDSL 35 MHz range (over shorter distances) rather than the 17 MHz which is typically used in VDSL.

Accompanying the chip is a full-blown home gateway specification, its Vx585 reference platform. It is built around its series of xDSL chips and processors and connectivity software tools. Qualcomm Atheros is one of the few companies (of course **Broadcom** is another) which can wrap in both the processor, the Wi-Fi and the DSL components into a single SoC, all of its own design. We have already heard from Qualcomm Atheros about its wave 2 802.11ac chips with MU-MIMO, which have limited design wins at present, but which are ahead of the curve.

The Whole Hog

But by adding the full range of ADSL all the way to G.fast, as well as the emerging VDSL 35b profile extensions, it puts itself in a tiny group of providers that can currently go the whole hog.

Qualcomm: *continued on page FOURTEEN*

"It now has 449 million mobile customers."

"It puts itself in a tiny group of providers that can currently go the whole hog."

BROADBAND BEAT

Qualcomm: *continued from page THIRTEEN*

Qualcomm Atheros claims the new G.fast chipset can deliver 1 Gbps over a 100-meter loop, but can point to no trials or external performance tests that verify this as yet.

“The combination of Qualcomm Atheros’ broad home networking portfolio and Ikanos’ advanced wired modem technology offers a complete solution for a wide range of home gateway products to better serve the carrier segment,” said Irvind Ghai, VP of product management for Qualcomm Atheros. “The new G.fast chipset offers the industry’s highest performance FTTx broadband access while the reference platform delivers a ‘one-stop-shop’ for smart gateway OEMs.”

Claiming the highest performing G.fast chips will send up howls of derision from both Broadcom and **Sckipio**, the tiny agile Israeli operation consistently leading in G.fast and this week launching a bonded version it claims can hit 2 Gbps.

Qualcomm also added a Distribution point chipset the Velocity-5U single-port distribution point unit chipset. Most rivals have a Distribution point running with 16 ports, and Sckipio came out with a 32 port version this week, while **BT** elsewhere in this issue is calling for 96 port DPUs. Qualcomm did not list any design wins for its DPU chip.

Qualcomm Atheros talked about the software it supplies with these chips, a suite called Qualcomm insight-BXM, which self-installs and is designed to reduce field dispatches and customer support calls by providing diagnostics, line throughput details and noise mitigation and is designed to operate within an SDN/NFV framework, which suggests that Qualcomm wants to leverage its mobile heartland for these chips and offer G.fast mostly as backhaul for cellular network.

The CPE also comes with StreamBoost, a clever software package that emulates DPI packet inspection and gives consumers control over QoS settings in real time.

The Sagemcom Connection

“Sagemcom has built a reputation for offering the industry’s highest-quality gateways,” said Ahmed

Selmani, deputy CEO at Sagemcom Broadband. “The combined Qualcomm and Sagemcom solutions enable us to deliver new experiences to consumers while helping service providers roll out their ultra-broadband offerings designed with multi-mode access and superior wireless distribution to the home network.”

Qualcomm Atheros came out with a gateway on a chip (SoC) offering the Qualcomm Internet Processor (IPQ), its VIVE Wi-Fi, built-in Gigabit Ethernet, Qualcomm StreamBoost, with support for dual band simultaneous (DBS) transmission and LTE backhaul, called the IPQ40x8/x9 SoC. This integrates two 2x2 radios capable of up to 1.73 Gbps maximum PHY rate, a quad-core ARM CPU and a Gigabit Ethernet switch on the same chip.

HomePlug Too

Almost as an afterthought, on the last day of the BBWF show, Qualcomm Atheros added a HomePlug product, offering AV2 MIMO in the form of a reference design for network adaptors, with the PL42 claiming a Max PHY rate of 1.5 Gbps which it insists gives real world throughput sufficient for 4K video streaming – although most people agree that AV2 is not quite up to managing multiple 4K video streams.

SoftAtHome Broadens Scope with G.Fast, VDSL 35b And IoT

- Quantenna Strikes Again

Faultline attended this week’s Broadband World Forum and filed this report.

French software firm SoftAtHome used this year’s Broadband World Forum (BBWF) to make an array of announcements, spanning G.fast, home gateways, and the IoT.

First off, SoftAtHome is providing the software behind **Swisscom**’s transition to VoIP and its dual-play Internet offering – broadband and VoIP. SoftAtHome was showcasing Swisscom’s home gateways at its BBWF booth - the Plus, Standard, and Light Internet boxes. The 1Gbps Internet-Box Plus launched two years ago, now the addition of the Internet-Box Standard and the Internet-Box Light expands the

SoftAtHome: *continued on page FIFTEEN*

“A complete solution for a wide range of home gateway products to better serve the carrier segment.”

“Sagemcom has built a reputation for offering the industry’s highest-quality gateways.”

BROADBAND BEAT

SoftAtHome: *continued from page FOURTEEN*

offering by adding entry-level versions of the home gateway. The Standard offers much the same but without media center capabilities, while the Light is a traditional voice service. All three boxes are using the same SOP platform from SoftAtHome.

We understand that the hardware element in these boxes is provided by Turkish Wi-Fi specialist **AirTies**, based on **Quantenna** chips.

Swisscom has been departing from its image as an archetypal incumbent in recent years and is also setting out grand plans for LTE and now for 5G. The Swiss telco has officially stated that it will launch a commercial 5G network in 2020 as the culmination of a five-year, three-stage plan to meet burgeoning demand for mobile data.

Faultline has previously said that SoftAtHome's objective is to virtualize the set top within the home so that it can run on commodity hardware and be distributed across multiple components - creating a foundation for the IoT era. At BBWF we met with Arnaud Bensaid, SoftAtHome's VP of marketing, and asked him what he thought. Bensaid slightly agreed, but emphasized that any device can be virtualized, pushed to the cloud - and his company can do this. Adding that although the device is important, SoftAtHome doesn't care what the device is, or what it does, but what matters is that SoftAtHome's software can go on it.

We also teased that there will be a major announcement in the coming month concerning a new investor for SoftAtHome, in the form of a major operator. **Orange** is the majority shareholder, and with it are **Etisalat** that took a 16.5% share in 2009, and French device manufacturer Sagemcom.

SoftAtHome has been on *Faultline's* radar since its creation by Orange in 2008, and has come on in leaps and bounds since we first reported on its OTT Internet carriage and hybrid TV technologies collaboration with **Broadcom** back in 2009. Its software now powers 25 million devices in 14 countries, it used BBWF to also announce a partnership with **Metanoia**, a provider of xDSL PHY chipsets for the wireline broadband market.

The collaboration proposes a G.fast "Upgrader" package with a Metanoia G.fast device, using a software package from SoftAtHome. The aim is to upgrade existing home gateways in the field, to ultra-broadband speed, by constructing the package around the universal SFP (small form-factor pluggable) transceiver via which gateways can be connected to all key copper and fiber access types, including G.fast, VDSL2 and the upcoming VDSL2 35b profile.

Metanoia was recently involved with the HomeGrid Forum at Computex, showcasing a multi-room, multi-node and multicast G.hn over coax, powerline, phoneline and plastic optical fiber, with other vendors involved stretching to **ARRIS, Comtrend, D-Link, Marvell, Prime Electronics & Satellitics, SendTek, Sigma Designs, Suttle, Tecom, Teleconnect, Xingtera** and **Zinwell**.

A product from SoftAtHome that was on prominent display was its CloudAtHome software - leveraging the cloud and separating content delivery from the underlying hardware, for a connected home experience. We were given a demonstration of the basics and enjoyed the user interface.

This platform gives an idea of the broadband and IoT service architecture that will emerge, as well as the services it will provide, through having a distributed cloud enveloping the home.

One benefit is that applications and resources can be partitioned between the home and external cloud such that each can be deployed in the best place. SoftAtHome has already provided one example with its Network Attached Storage (NAS) for the home dovetailed with the cloud. The idea is that users might want to keep some confidential or intimate personal data solely on the NAS, for instance if they do not trust the external cloud. But other data that might be highly valuable, such as a video library, might be backed up in the cloud on something like Dropbox or **Google** to guard against, say, the house burning down. We should issue the caveat that not many homes are ready for such hybrid cloud deployments, but it is a sign of things to come.

"Any device can be virtualized, pushed to the cloud."

"It is a sign of things to come."

BROADBAND BEAT

G.Fast Hot Topic at BBWF; BT Makes Ambitions Clear

Faultline attended this week's Broadband World Forum and filed this report.

Chipset and distribution unit vendors in the G.fast sector are developing quickly in the right direction, and operators are now realizing that they can use their existing copper assets to improve broadband speeds – in the UK **Sky**, **Vodafone** and **TalkTalk** all want to make an investment in faster fiber services, but worry that **BT** will undercut its prices using G.fast and existing infrastructure.

It was previously thought that operators such as BT, looking to add G.fast to its broadband strategy, would deploy the technology from distribution points relatively close to the consumer home.

However, BT announced at this year's Broadband World Forum (BBWF) in London that this would not be economical due to the large number of distribution points it has dotted around the country. Its plan instead is to introduce the tech into its street cabinets around 300-350 meters away from the subscriber home - with the ambition of providing G.fast-based 300-500 Mbps services to 10 million UK properties by 2020.

Trevor Linney, BT's head of access network research, explained that an added incentive of G.fast technology is that with the use of spectrum guard bands, BT will be able to deploy G.fast without causing any disruption to existing VDSL services. "It's ready to go into the network without requiring customers to upgrade their modems or change their CPEs unless they wish to move to the new service," said Linney.

BT also announced that it was able to deliver more than 5 Gbps over copper loops of 35 meters and speeds of around 1.8 Gbps at distances of approximately 100 meters, during trials using the experimental XG.fast technology, in partnership with French company **Alcatel-Lucent**.

"The delivery of 5 Gbps over 35 meters, which coincidentally is the typical distance of our final drop, just shows the potential of copper to deliver higher speeds," said Linney. "It's a signpost that copper has more to give." Although, BT has indicated the

technology would not help BT to provide ultra-fast broadband services over longer distances.

With the current flurry among vendors in this sector, we can probably expect some exciting M&A action in the not too distant future. **Scipio** was one of the vendors receiving a lot of mentions at BBWF, its DP3000 G.fast DPU Chipsets, for example, can simultaneously support four 1 Gbps G.fast ports, up to 10 Gbps of aggregated backhaul and full built-in vectoring support for as many as 64 subscribers.

Scipio also announced a partnership with **Simpler Networks**, provider of automated jump switches for G.fast port provisioning density. By combining Scipio's high-density 32-port G.fast Distribution Point Unit (DPU) with Simpler Network's EZ-Edge 100-port Automated Distribution Frame, the collaborative pair claim that telcos can pre-wire an entire 100-resident apartment building at half the cost.

Alcatel-Lucent's G.fast ADSL technology is set to be rolled out by the Australia's **National Broadband Network** (NBN) in 2017, following recent successful trials in the country. The NBN's ambitious fiber-nearly-everywhere plans were hindered by government instructions to find a less expensive alternative - and G.fast could be the answer.

"We have conducted our first G.fast trial in an office building in Melbourne and achieved total throughput of 600 Mbps on CAT-3 cabling that was around 20 years old," said Tony Cross, NBN's chief architect, speaking at BBWF. "We could not use the full G.Fast spectrum range in the trial because of active VDSL lines in the same bundle – had we used the full G.Fast spectrum range we would have achieved speeds of around 800Mbps."

BT's Linney addressed the issue that vendors need to produce larger distribution point units that come with as many as 96 ports, instead of the original 4, 8 or 16.

Calix are one of those Scipio vendors, demonstrating its expanded portfolio of copper systems at this year's BBWF. The company demonstrated the interoperability between its G.fast DPUs and modems, and those of other vendors - unveiling its VDSL2 system level vectoring (SLV)

G.Fast: continued on page SEVENTEEN

"BT will be able to deploy G.fast without causing any disruption to existing VDSL services."

"Total throughput of 600 Mbps on CAT-3 cabling that was around 20 years old."

BROADBAND BEAT

G.Fast: *continued from page SIXTEEN*

systems on the Calix E7-2 modular access systems. These can deliver up to 96 vectored ports without the economic and operational burden of a dedicated vectoring control processor card (VCP).

Vendor breakthroughs such as this have encouraged Linney, speaking at BBWF, “To go from a 16-port unit to a 96-port unit would have been quite scary to the industry a few years ago, but we now see that functionality being added to roadmaps.”

Marvell Pushes Out First G.Hn 2 Gbps Chip

This appeared in Faultline.

Marvell made waves at Broadband World Forum this week when it showed off the next generation of G.hn technology, which it claimed delivered 2 Gbps over any wire. The new version of G.hn uses 200 MHz of spectrum and Marvell claims it is the perfect backhaul for wave 2 802.11ac Wi-Fi.

The HomeGrid Forum, the alliance built around G.hn, has barely got through launching its first generation technology and has little market share to speak of at this point, although some significant design wins. Whether or not it is ready to push on to a second generation is moot. New devices, based on this version that are due to be announced later this year, are based on the latest version of the ITU-T standard for G.hn, with the draft standard due for approval in February 2016. It achieves this basically by supporting a 200MHz wide channel, rather than 80 MHz.

Back in 2010 concerns arose about regulatory conformance in using the 100 MHz to 200 MHz channels, and so they were dropped from G.hn and its power level was also reduced, one of its biggest setbacks. Presumably this means that G.hn 200 (as HomeGrid is calling it) will suffer regulatory issues as it tries to roll this technology out in some regions although clearly some progress has been made on electrical power levels.

A blog from Chano Gomez, director of the broadband solutions group at Marvell, back in August first mentioned the new version, confirming that this

is all that HomeGrid has done. It was HomeGrid that called out Atheros when it did much the same thing within the HomePlug standard, accusing it of making false claims around the technology in 2011, with its AR7400, which it said offered 500 Mbps in powerline using HomePlug AV. This was a blind alley which almost never shipped in volume, but kept the HomePlug headlines speeds up while it actually went and built a real HomePlug AV2 technology. We think this is more or less the same for G.hn, and it will have limited appeal.

The war that is going on right now – between MoCA which has been boasting its MoCA 2.0 performs at 400 Mbps real world speed at 90% of connections last week; at HomePlug which has last year tried to claim it is fast enough for 4K, and G.hn now with this release – is to steal the high ground as a backhaul for Wave 2.0 802.11ac Wi-Fi. In truth we are looking at 300 Mbps to 600 Mbps genuine average backhaul need for an Access Point in this technology, and all of these technologies, with the possible exception of HomePlug AV2, are fast enough. But some connections are not average, and backhaul links may need to be faster.

But with all the claims made in Wi-Fi chips that they offer Gigabit performance and scale up to 10 Gbps, it makes it sound dumb if it is backhauled by a 1 Gbps technology, never mind a 400 Mbps technology – but that’s the truth.

It is true that a typical use case of 2 x 4K streams being delivered around the home, with one coming from the Internet, and another from a DVR, plus a couple more HD streams to tablets and the like, might mean that Wi-Fi actually carries something more like 100 Mbps constantly, across multiple beams. Even a backhaul technology like HomePlug AV or AV2 or G.hn should be man enough to carry all of those over a single, contention network. So this is really a PR battle, little more, for that space.

At the same conference, multiple carriers and equipment vendors are discussing plans for upgrading their access networks to 10G PON technology, and finding a home-networking technology that can keep up with the access network is a key part of their

Marvell: *continued on page EIGHTEEN*

“Some significant design wins.”

“Might mean that Wi-Fi actually carries something more like 100 Mbps constantly, across multiple beams.”

BROADBAND BEAT

Marvell: *continued from page SEVENTEEN*

strategy. So you get the idea of 10 Gbps to an MDU building, 1 Gbps to each home using Ethernet over Coax, and 300 Mbps around each home, as a “real world” scenario.

In addition to the increased 2 Gbps speed, the latest wave of G.hn products will include LDPC

Forward Error Correction, automatic detection and retransmission of packets with CRC errors, and remote spectrum management, said HomeGrid.

It also claims that the new G.hn standard uses dramatically less power than current coax networking standards and Marvell’s 2 Gbps technology also takes up far less space on circuit boards.

HOME NETWORKING

Wi-Fi Is the Achilles Heel of Broadband

This may be the most significant story of the week. It is about what we have long warned is the industry’s current biggest challenge.

Service providers are on the brink of a major shift in opportunity, according Karsten Gewecke, equipment maker **ZyXEL**’s VP of service providers & key accounts in Europe, who said the explosion in the numbers of bandwidth-hungry devices is putting immense pressure on Wi-Fi demand and service providers need to look at their options in order to offer exceptional user experiences. Gewecke might have added, but didn’t, that consumers have the same problems as service providers but that consumers’ urgency is here now – not “on the brink.”

The fact is that companies that make Wi-Fi devices, like ZyXEL, led on by the makers of Wi-Fi chips, have misled consumers about what Wi-Fi is capable. It is not, in most cases, capable of whole-home coverage, nor does it have the bandwidth to handle as many video streams as consumers need in this pre-4K era, a problem that the coming tsunami of 4K devices – TVs, smartphones and tablets – will overwhelm.

The Home Needs a Wireline-based Backbone

When we tried ordinary Wi-Fi extenders in our test home, they had the same limitations as the router – a shortage of bandwidth and limited coverage. The only solutions we have found so far are powerline and coax-based Wi-Fi extenders. Of the two, the coax-based one has far and away performed the best. The Actiontec WCB6200Q MoCA 2.0 to 11ac Wi-Fi adapter and extender provided 80 Mbps of Wi-Fi in a bedroom on an iPhone 5 that was using ASSIA’s

CloudCheck to measure the Wi-Fi speed in a room where the 5.0 MHz band from the router did not reach at all and the 2.4 MHz band was less than 10 Mbps. That test was conducted comparing **Asustek**’s very newest top-of-the-line router – one of those with antennas sticking out - and which was placed in the very center of the home on an open top shelf about 10 feet high.

The powerline-based extenders we tested did not come close to providing those speeds.

Wi-Fi Is the Service Providers’ Nemesis

Gewecke told an audience at the Broadband World Forum, using the title “Wi-Fi, the Achilles Heel of FTTH,” that Wi-Fi related concerns come back to being an issue for the service providers and how they can embrace this and become part of the solution. He said that slow performance and coverage limitations are a major issue for service providers and as the demand on Wi-Fi rises in line with the ever-increasing rates of video streaming and 4K video, customers are looking at service providers more and more to solve any Wi-Fi related crisis.

That is a message that *The Online Reporter* has been giving for almost two years.

Gewecke said, “Next Gen CPE and Wave 2 Wi-Fi technologies will help address some of the issues that we are facing, offering coverage, speed and user experience improvements. Service providers need to look at what is already in place in their networks and find a solution that fits. With easy set-up, network discovery, network diagnostics & troubleshooting and remote management, ZyXEL’s ONE Connect and Wi-Fi excellence solutions are answering these issues on a global scale. Service providers are looking

Wi-Fi: *continued on page NINETEEN*

“Companies that make Wi-Fi devices, like ZyXEL, led on by the makers of Wi-Fi chips, have misled consumers about what Wi-Fi is capable.”

“The coax-based one has far and away performed the best.”

HOME NETWORKING

Wi-Fi: continued from page EIGHTEEN

at ways to address the coverage issue proactively whilst ensuring they remain in complete control of their networks. With this ever-increasing demand for full in-house coverage, we are seeing a trend towards additional Access Points and Wi-Fi extenders.”

The Two Problems Poor Wi-Fi Causes Service Providers

There are two problems for service providers who are spending billions to build better broadband networks:

1. Using Wi-Fi to deliver pay TV is much, much easier than installing wires in the home but since Wi-Fi, by and large, is not a whole-home solution, subscribers will be quick to complain and cancel their service when the pay TV video starts flickering.
2. When viewing devices that are connected to the home's broadband network by Wi-Fi start flickering, subscribers will start calling the service provider, complaining about their broadband speed, not their Wi-Fi speed. That'll drive up the cost of customer support and tempt subscribers to look elsewhere.

Service providers and consumers need a better way to measure Wi-Fi speeds in each room, which ASSIA's CloudCheck is a good start – although it seems to depend on broadband too much to be 100% accurate.

ZyXEL Proposes More Wi-Fi, Not Wireline

ZyXEL's proposed solution is more Wi-Fi, not the use of a wire – powerline, coax or Ethernet.

Gewecke proposed that the ease-of-use and simplicity of Wi-Fi Wave 2 technologies make them “an attractive option.” Of course Gewecke was selling ZyXEL new Wi-Fi products, which he said create exceptional user experiences. Its ONE Connect solution, launched at Broadband World Forum, according to Gewecke, “allows service providers to gain a highly detailed overview of the home networks they serve.” That he said will put service providers “back in control.”

Sounding like *The Online Reporter*, ZyXEL said “the rate of consumer adoption of video streaming, in parallel with 4K video, is fuelling the ever-growing demand on Wi-Fi.” It cited a recent study that showed video delivered by broadband to TV sets doubled in 2014 and will continue to grow at a rapid pace, increasing fourfold by 2019. At that rate, broadband delivered video will account for 80% of all consumer broadband traffic in 2019.

It might have said but didn't that providing even 100 Mbps to the home does not solve the consumers' problem if the home's Wi-Fi cannot provide 100 Mbps to every room that has a viewing device – where speeds are often below 10 Mbps and lower.

The Online Reporter has tested the very latest 11ac routers that are available and none of them provide 100 Mbps in every room of the 2,400 square foot home we use for testing. Maybe ZyXEL's ONE Connect solution will solve the problem but we doubt it. We have heard the Wi-Fi promises before.

HomeGrid Forum (G.hn) Leads the Charge to an Industry Standard Performance Test

- 'Like-by-Like' Comparisons

Consumers and service providers alike need an industry-standard test procedure and equipment to determine the performance of home network gear in a multitude of situations that are found in the world's homes. For the last six months Rider Research has been testing within residences the speeds of the two powerline networking. It has been a difficult and time-consuming, made more difficult by the lack of industry-wide standards for testing. The testing task is much, much greater for service providers who have to consider the hundreds of home layouts and construction.

In August 2015 the Broadband Forum published a technical report called TR-208 that defines how service providers can assess the performance of powerline products and technologies under controlled conditions. It allows for “like for like” comparison of different home network products under controlled conditions. TR-208 is intended only for service

HomeGrid: continued on page TWENTY

“The rate of consumer adoption of video streaming, in parallel with 4K video, is fuelling the ever-growing demand on Wi-Fi.”

“Like for like’ comparison of different home network products under controlled conditions.”

HOME NETWORKING

HomeGrid: *continued from page NINETEEN*

providers, not for consumers, but at least it's a start to an industry standard for testing.

The HomeGrid Forum (HGF), which supports and markets the G.hn home network technology, is the first and so far the only home networking association to fully and publicly back TR-208, which it demonstrated at the Broadband Forum's Interoperability Pavilion this week. It was the first such public testing.

It is not yet clear whether TR-208 can be used to test HomePlug powerline gear – or whether it can be used to test coax-based network gear such as G.hn and MoCA. TR-208 was designed by the chipset companies **Broadcom** and **Qualcomm** for HomePlug in addition to **Sigma Designs** and **Marvell** for G.hn so it should be ideal for testing both HomePlug and G.hn powerline devices. It is not certain whether the HomePlug Alliance will push it but the HomeGrid Forum is aggressively pushing it – starting with demonstrations at the Broadband World Forum.

It is also not clear yet whether a) the test results will be made available to *The Online Reporter* and b) whether it is feasible for **Rider Research** to conduct its own tests.

HGF demonstrated G.hn powerline testing using TR-208 universal powerline splitters. It said the test “shows the distinctive performance characteristics of G.hn Powerline products, and allows a ‘like for like’ comparison with other home networking technologies” no doubt meaning HomePlug.

The TR-208 Performance Test is a lab-based plan designed to give accurate, repeatable results over a wide range of conditions. It will allow HGF, its members and accredited test houses “to determine the performance of G.hn products as part of certification,” which it called “a robust and stringent certification program that should give peace of mind to both service providers and retail customers.”

Despite the appeal of powerline - its availability in every room of every home (and in many cases on every wall) - the testing of powerline networking is very difficult “because of the large number of domestic devices in the home that create noise on the powerlines, and the wide variety of topologies and

amounts of connections.”

We applaud TR-208 because it “provides the industry, operators, and test labs with a well-defined test bed specification, and a set of tests that enable a direct performance comparison to be made between different powerline products and technologies, which can be independently verified.”

HGF president and Marvell executive Donna Yasay said, “Having a recognized test plan based on all powerline standards with the backing of the Broadband Forum gives our test results the credibility they need for operators and consumers alike. We have seen many test plans being used to compare home networking technologies and the results are very variable, depending very much on the choice of set-up. TR-208 takes all the uncertainty and variability out of the set-up and gives truly comparable lab-verified results.”

Amen!

Broadband Forum's CEO Robin Mersh said “The key to establishing new technologies and ensuring their ability to work with the many other communications protocols in the network is in having strong, universally accepted testing procedures. HomeGrid Forum has actively supported this approach and we are happy to support efforts to define the test plans, set-ups, procedures and test equipment required to achieve quality results.”

A key element in the testing is universal powerline splitters (UPLCs), which are required by TR-208. The splitters allow the tester to build repeatable scenarios in a lab environment and enable easy manipulation of the various network channels, including the injection of noise and the modeling of SISO/MIMO effect.

HGF said it will provide an easy way to obtain the parts of the test equipment that TR-208 requires.

We had hoped that TR-208 would end **Rider Research's** testing but we have recently started testing coax-based Wi-Fi extenders. The first product we tested was **Actiontec's** bonded MoCA 2.0 to 11ac Wi-Fi (using Quantenna's 4x4 Wi-Fi chips). It performed well.

We look forward to testing G.hn-based coax to Wi-Fi extenders.

“Shows the distinctive performance characteristics of G.hn Powerline products.”

“HomeGrid Forum has actively supported this approach.”

HOME NETWORKING

Amped Wireless Promises Its TAP-EX3 Wi-Fi Extender Provides Coverage throughout 12,000-foot Square Foot House

Here's another maker of Wi-Fi gear that's promising Wi-Fi capabilities far, far greater than what consumers are accustomed to getting. This time it's **Amped Wireless**, which says its new \$200 TAP-EX3 Wi-Fi extender has technology that "boosts Wi-Fi coverage by up to an additional 12,000 square feet at ultra-fast AC1750 Wi-Fi speeds."

AC1750 means an 11ac Wi-Fi device is supposed to offer 450 Mbps on the 2.4MHz band and an additional 1300 Mbps on the 5.0MHz band. See:

<http://www.smallnetbuilder.com/basics/wireless-basics/32175-how-fast-can-your-wi-fi-go>

So is Amped Wireless really promising that in a 12,000-square foot home that its TAP-EX3 Wi-Fi extender will provide Wi-Fi throughout the home at a full "450 Mbps on the 2.4MHz band and an additional 1300 Mbps on the 5.0MHz band" - and in any home with any number of walls and with any type of construction material and with brick or masonry walls and lots of foliage - all known as "Wi-Fi killers."

There are no disclaimers in the announcement that Amped Wireless sent to the press about the TAP-EX3, which uses **Qualcomm** Atheros' Wi-Fi chips. In fact Amped Wireless says TAP-EX3 is "designed to deliver whole-home Wi-Fi coverage," presumably even homes that have 12,000-square feet. In fact, it says its TAP series of extenders "require no other devices to complete," presumably meaning that the consumer does need to install any additional Wi-Fi extenders in other rooms. It promises that the TAP-EX extenders "will transform the average consumer's experience with Wi-Fi."

Does that mean that all those powerline and coax based Wi-Fi extenders are now ancient history? We don't think so but we'll see.

Amped Wireless says the TAP-EX3 works by repeating the signal from a single or dual band Wi-Fi router and redistributing that signal, with a larger reach, to deliver more Wi-Fi coverage. It is equipped with 12 "advanced" amplifiers and 3 high-gain antennas (1 external, 2 internal) "to boost Wi-Fi coverage by up to an additional 12,000 square feet at ultra-fast AC1750 Wi-Fi speeds."

It says the "unmatched" output power provided by the amplifiers and antennas is what allows the TAP-EX3 extender to push the signal through walls and eliminate Wi-Fi dead spots.

Amped Wireless readily admits there are major limitations with the Wi-Fi gear that it and others have sold to consumers by making impossible claims about their products' capability.

Lacey Limbrick, brand/marketing manager at Amped Wireless, said, "Many homes and offices are settling for clunky, poor performing and slow Wi-Fi networks simply because they don't want to wrestle with updating it."

The TAP-EX3, available in early November, has several appealing features: 5 Gigabit ports, works as a network bridge by allowing devices such as smart TVs and printers to be attached directly, file sharing via the USB port and a large 4-inch touch screen with a built in stylus. A calendar and clock are displayed when the touch screen is not being used.

Most promising is that Amped Wireless promises that TAP extenders can be completely set-up in less than 3 minutes and that no other devices are needed - "just the extender and the tap of your finger."

"There are no disclaimers in the announcement."

"There are major limitations with the Wi-Fi gear that it and others have sold to consumers by making impossible claims."

SET- & NET_TOP BOXES

Roku is Coming to France

Soon French consumers will be streaming entertainment from 1,500+ streaming channels including **Netflix**, **Google** Play, Spotify, YouTube, Daily Motion, France 24 and many more following **Roku's** announcement of the launch of its streaming players in France. The company will launch three

different models in France, the Roku Streaming Stick, Roku 2 and Roku 3. Pricing for the Roku streaming players are as follows:

Roku Streaming Stick	€ 54.99
Roku 2	€ 89.99
Roku 3	€ 119.99

"Roku streaming players give consumers choice

Roku: continued on page TWENTY-TWO

SET- & NET TOP BOXES

Roku: *continued from page TWENTY-ONE*

and control over what they watch on TV,” said Clive Hudson, vice president of Europe at Roku. “With a Roku streaming player you can watch popular movies and TV shows, independent movies, cartoons, cooking shows and even yoga instruction videos. There really is something for everyone. And not just paid content, as

many of the channels that we offer are completely free.”

Roku has said that it is committed to making local content available for streaming and it is starting with channels from LA VOD videofutur, Deezer and ARTE which are all expected to launch on Roku streaming players soon.

“For some publishers, the platforms are becoming the fire hoses from which they can drink.”

LIES, DAMN LIES AND STATISTICS

Smart TVs Are in 45% of Western Europe’s Broadband Homes

- Proving the Skeptics Wrong Once Again

It was only a couple of years ago when most European analysts were saying that Europeans (the English or Germans – especially the Germans - or French, etc) would never take to smart TVs.

Here it is a few short years later and 45% of broadband homes in Western Germany have smart TVs, according to **Parks Associates** - and Germany leads with 50% penetration.

Brett Sappington, director of research at Parks Associates, said, “Europe has served as an early market for new online video services. As the wave of OTT video breaks across European markets, new opportunities for partnerships are opening up among OTT services, CE manufacturers, and pay-TV providers.”

At an upcoming seminar the company will discuss “the unique value of the user interface, the role of devices such as smart TVs and streaming media devices, and future opportunities that will shape the progression of OTT video services.”

Let’s not overlook the demand for bandwidth in broadband and home networking that OTT creates. And let’s also remember that many of those same smart TV skeptics have been predicting that 4K will fail – that 4K TVs are too pricey or there is not enough 4K content or that consumers should wait for better TV technology. Let’s see in two years, two months and a week when reports start appearing about sales of 4K TVs during the 2017 shopping season. But judging by the big TV makers’ launch of new TVs, there will be few 1080p TVs above 42-inches.

“Many of those same smart TV skeptics have been predicting that 4K will fail.”

Majority of US Broadband Households Use OTT Service

Research from **Parks Associates** confirmed that 58% of US broadband households use at least one OTT video service on a monthly basis and 25% of US broadband households use two or more OTT video services monthly. The numbers show how far penetration into the market has gone but research also reported that recently the growth of US OTT services has slowed; an indicator of the saturation of the SVOD service market. Parks Associates research analyst Glenn Hower said, “**Netflix** continues to dominate the OTT space, with 43% of the US broadband households subscribing to its service. After **Hulu** and **Amazon**, with 19% and 17%, penetration of OTT services drops drastically. However, the market need not worry yet as Hower continued saying, “With new niche services emerging that focus on targeted content and audiences, there is still room for growth in the space.”

Prediction That NTB Sales Will Increase

Reports about the demise of NTBs – streaming media devices – seem to be overstated according to a report from **Parks Associates**, which says “the global annual unit sales for streaming media devices, including both player and stick form factors, will increase from 30 million units in 2013 to 86 million units in 2019.” That runs counter to our thesis, based on our experience with the latest models of smart TVs that have all, or almost all, the apps a consumer is likely to use. Our use of the four NTBs that are connected to the TV are no longer used except when we want to use iTunes to play music on the surround sound system when the

Prediction: *continued on page TWENTY-THREE*

LIES, DAMN LIES AND STATISTICS

Prediction: *continued from page TWENTY-TWO*

Apple TV is used.

Parks Associates also predicted that by 2020, nearly 97 million wireless speakers will be sold globally.

Parks Associates president Stuart Sikes said, “The number of connected CE categories and devices continues to expand as companies look to disrupt the market. The key priorities for our research are to identify emerging business models, effective partnerships, and engagement strategies that help develop profitable consumer products and services.”

Other findings by Parks Associates:

- Cord cutters use a gaming console (37%) the most to stream video and other content, closely followed by a streaming media device (34%).
- 13% of U.S. broadband households purchased a streaming media device in 2014, boosting adoption to nearly 30%.
- 66% of U.S. broadband households use a streaming audio service; 26% of U.S. broadband households subscribe to a paid streaming audio service.

It said emerging CE devices include mini-PC – “computing sticks, hobby drones, and personal GPS systems for people and pets.

Analysys Mason Explores Threat OTT Poses to Linear TV

It is clear that consumption and revenue from non-linear, over-the-top services are growing exponentially. To date OTT or non-linear TV services have become substitutes for physical video rentals and sales while complementing traditional linear TV. Between 2008 and 2013 in Europe non-linear and online video service revenue grew at a compound annual growth rate of 65% to reach €1.5 billion. Meanwhile the physical video rental market growth followed a negative trajectory and revenue declined at a compound annual growth rate of 8.5% for a €3.3 billion loss.

The difference in revenue can be explained partly by the cost savings made by reducing the production of physical videos which are irrelevant in the online video service model. During this same period traditional TV remained stable with a compound

annual growth rate of 0.1%.

Catalogs of online video services in Europe were initially focused on film but recently online video and on-demand providers have started acquiring the rights to TV series and sporting events, the core of traditional TV consumption. **Analysys Mason** says that as online service providers gain traction in the space and bid for new types of content rights they can expand their catalogs to appeal to a wider audience, thus posing an increased threat to traditional TV services. When rights holders realize the value in the OTT strategy and re-strategize themselves, granting rights to the newer OTT platforms non-linear TV is poised to become a clear substitute for traditional TV.

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“Emerging CE devices include mini-PC – “computing sticks, hobby drones, and personal GPS systems for people and pets.”

“Posing an increased threat to traditional TV services.”

Where Is the G.hn

'Copper Pair' Equipment?

Here is the HomeGrid Forum's latest definition of G.hn: "a single unified, multi-sourced networking technology - over coax, copper pairs, powerline, and plastic optical fiber." Please note that telephone wires – "copper pairs" – are still included although so far we have heard of no equipment for use with telephone wires. Coax is also mentioned but so far we have seen only one company with coax-based G.hn equipment and so far have not been able to get a pair for testing.

Technicolor Supports 'Fully Open, Unlocked' Broadband Architecture

"Whether it is G.fast or FTTH, operators want to push boundaries with the best available technology, and deploy end-to-end solutions comprising best-in-class vendors." - Gary Gutknecht, **Technicolor** VP of product management, in support of **ADTRAN's** initiative to developing "a fully open, unlocked [broadband] architecture."

UK Has Europe's Biggest Fiber Footprint

"The UK already boasts the biggest fiber footprint among major European nations, as well as the highest take up, but it is vital we continue to invest. That is why we have announced plans to get ultrafast broadband to ten million premises by the end of 2020 and to most of the UK by 2025." - Mike Galvin, managing director of next generation access for **BT's** technology service & operations division

On Comedy Central in the Post-TV Era

"You can put a ton of effort into trying to get people to tune in at 11 p.m., but the moment DVR broke the linear schedule, all bets were off, because not everyone wanted to watch at 11 p.m. - that's just what the platform dictated." "If you're not on YouTube and they want to watch YouTube, they'll just watch something else on YouTube! It's very hard to force people to consume the way you want them to consume." Erik Flannigan, EVP multi-platform strategy and development, **Viacom Entertainment Group**

PCCW Media Launches Viu OTT Video Service

"Viu OTT video service capitalizes on the paradigm shift in users' viewing habits and demands. By leveraging the Group's strong content providers' network, telco relationships, patented adaptive streaming technology by Vuclip, Viu OTT video service is well-positioned with today's discerning viewers in mind as they can now readily stream or download content directly onto their mobile phones, tablets, laptops and desktops," said Ms. Janice Lee, Managing Director, **PCCW Media**.

'Kingdom' On Digital Platforms the Day After Airing

DirecTV and Endemol Shine Studios' original series, "Kingdom" which airs Wednesdays at nine on the AUDIENCE network on DirecTV and AT&T U-verse, will be available on all digital platforms the

day after its initial broadcast. This comes after the entire first season of the show was available on digital HD platforms for the first time this summer.

CBS and NBC Coming to Apple TV

Apple is adding new content to its Apple TV set-top box including the **CBS** All Access app and the **NBC** TV Everywhere app. This comes just before the new version of the Apple TV is set to launch.

Betaworks CEO Talks Notifications

Speaking with Peter Kafka on the podcast "Re/code Decode" John Borthwick, CEO of **Betaworks**, which he deems a "startup studio", spoke heavily on push notifications. Having recently organized a conference dedicated to push notifications, Borthwick believes push notifications are hugely beneficial features that are underestimated and says the push notification is a direct path to a specific app so rather than waiting for the user to seek it, it comes to the user. He continues saying that this is important because push notifications have the potential to change the mobile platform and the way we consume our information and it changes the navigation of mobile devices and the way we think about services and content. In talking about the potential of social platforms and publishers making media Borthwick says, "You need to have an app. You need to invest in mobile strategy. Clearly for some publishers, the platforms are becoming the fire hoses from which they can drink."

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