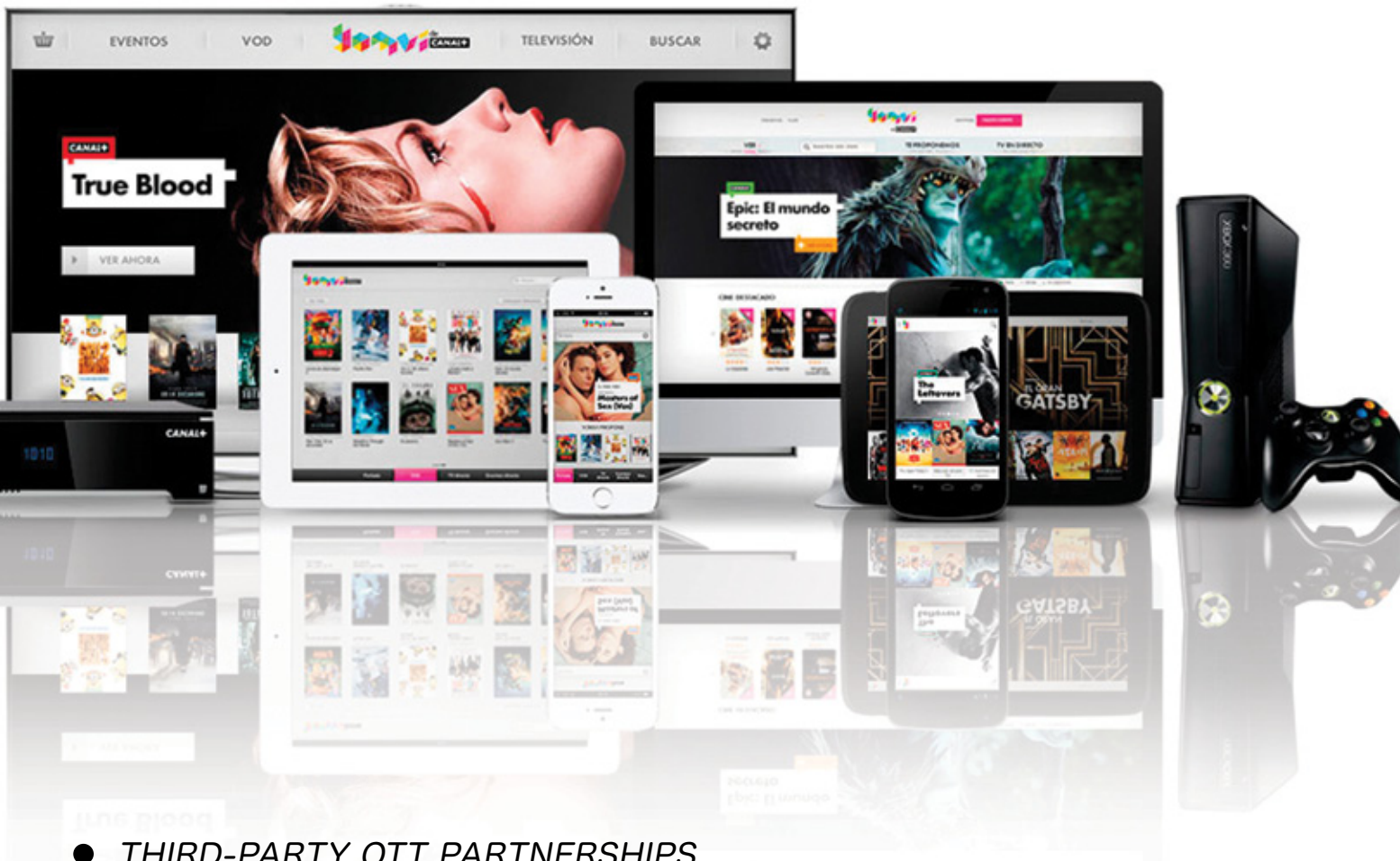




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HOW OTT IS CHANGING THE SHAPE OF PAY TV



- *THIRD-PARTY OTT PARTNERSHIPS*
- *REACHING OUT WITH PAY TV LITE*
- *OTT AS A BROADCAST SUBSTITUTE*
- *VIRTUALISATION AND CLOUDIFICATION*
- *AGILITY TO COMPETE WITH NETFLIX*



ON MARCH 22 2015, SPAIN OTT PLATFORM "YOMVI DE CANAL+"
REPORTED RECORD LIVE OTT VIEWERSHIP OF THE
REAL MADRID - FC BARCELONA "EL CLASICO" FOOTBALL MATCH.

**YOMVI OTT LIVE
STREAMING RECORD**

376'000 DEVICES

500'000+ VIEWERS



Powered by NAGRA MediaLive, Yomvi de Canal+ is a leading pay-TV multiscreen platform, supporting the growth of live and on-demand content streaming to multiple devices for Canal+ Spain. Yomvi de Canal+ is also available on computers, iOS and Android devices, the Xbox 360 game console, PlayStation®3 and PlayStation®4 as well as Samsung and LG smart TV sets.

TV consumption is evolving and delivering multiscreen TV has become a must-have for pay-TV service providers. With NAGRA MediaLive, service providers like Canal+ Spain can benefit from a robust and scalable platform that offers broad device reach, ensuring viewers can get the content they love on any screen.

diabolo.com



SEE NAGRA MediaLive Multiscreen
@ IBC 2015 on **booth 1.C81**

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Videonet gives platform operators, media groups and channel owners information and analysis that helps them transform themselves for the connected era. We are focused on the push towards any-screen TV, virtualized operations, data-driven advertising, programmatic trading, more HTTP streaming, immersive television and more personalized TV experiences, highlighting trends and best practice in an era of unprecedented disruption and new opportunities. We deliver our insights through a regular newsletter, special reports and webcasts.

Cover photo:

The Yomvi service,
illustrated by NAGRA

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VIDEONET ISSUE 34

INTRODUCTION

Pay TV operators have always had a big castle (STB platforms and compelling content) surrounded by fertile lands (relatively high ARPU subscribers). The lands beyond were hard to farm (traditional non-Pay TV homes) so remained unsettled until new farming methods (OTT technologies) dramatically improved the yield-to-effort ratio (leading to new, low ARPU pay viewers).

New settlers arrived to take advantage (pure-play OTT). Fearing they would raise an army and march on the castle, Pay TV operators built fortified outposts (TV Everywhere). Now they are trying to claim the new productive lands for themselves (with Pay TV Lite and online SVOD) using the same farming techniques (OTT). Some of the new settlers bring advanced culture and goods (great content and increasingly loyal users) and there are some leaders in the Pay TV kingdom who want to trade with them (integrating third-party OTT into the STB platform).

This is the tale of the television industry today. In this report we give you the real-world version of how Pay TV operators aim to triumph in the OTT era, including the strategies and technologies they are using to defend and expand their businesses.

John Moulding, Editor-in-Chief, Videonet



CONTENTS: HOW OTT IS CHANGING THE SHAPE OF PAY TV

- **Capturing share of a fast-growing market**

Pay TV is still growing but OTT is growing faster – much faster. This explains the threat and the opportunity that OTT video presents to platform operators.

- **Bringing OTT partners onto the Pay TV platform**

Since it became apparent that online SVOD and Pay TV can co-exist, interest has grown in 'onboarding' OTT providers onto STB platforms.

- **Reaching new market segments with Pay TV Lite**

Pay TV Lite feeds a desire for a more a la carte approach to buying content, which can only be accommodated so far on the full-flavour services.

- **OTT distribution as a substitute for IPTV or satellite**

Streaming video can be used to increase the overall addressable market for traditional, full-flavour Pay TV, with OTT substituting traditional distribution.

- **New operations paradigms thanks to virtualisation**

The virtualisation of video processing and storage means you can exploit cloud capabilities including SaaS, meaning faster launches.

- **Increased agility to compete with Netflix and Amazon**

There is an operations revolution underway, taking lessons from the IT and Internet worlds, that enables Pay TV to compete more effectively with rivals.

OPTIMIZING MULTISCREEN TV DELIVERY WITH A SECURE VIDEO PLAYER



Delivering OTT multiscreen services to an ever-growing number of CE devices that use a wide range of operating platforms, streaming standards and DRM products has become a key challenge for pay-TV service providers worldwide.

How can they effectively navigate this complex OTT world while maximizing reach and maintaining control over the TV experience? Our latest white paper takes a comprehensive look at the key factors service providers need to consider in deploying OTT services, including:

- + **MARKET AND TECHNOLOGY CHALLENGES IN MAXIMIZING OTT REACH**
- + **STREAMING STANDARDS AND FRAGMENTATION**
- + **KEY CONSIDERATIONS IN SELECTING THE RIGHT DRM AND SECURE PLAYER TECHNOLOGIES**



Download the white paper



SPONSOR'S INTRO:

How OTT TV is changing television: moving to the Cloud

By [Simon Trudelle](#),
Senior Product Marketing Director, [NAGRA](#)



The past year has proven to be rich in new OTT service launches, making it clear to everyone that the premium video and TV content industry, from Hollywood studios to live sports broadcasters, has decided to leverage the power of OTT and cloud technologies to distribute content over IP networks. In parallel, several leading pay-TV service providers have ramped up their OTT and multiscreen TV services, including reaching agreements with leading 'pure player' OTT platforms, to enrich their content offerings and deliver more value and convenience to their subscribers.

According to recent NAGRA-commissioned industry research – highlighted in this report – OTT and multiscreen TV are gaining mass adoption and becoming a must-have for pay-TV service providers worldwide. Yet integrating new OTT content platforms and on-demand services into existing multi-channel broadcast-centric offerings calls for a change in the way pay-TV platforms are architected and operated, influenced by cloud-based technologies. There are three aspects to consider:

- OTT TV is a “cloud native” solution, generally designed to work on standard virtualized IT infrastructure. It enables an exciting range of new cloud-based TV services, from start-over TV to full network PVR and VOD capabilities across a large range of operator and consumer devices;
- OTT TV platforms reach a broad range of fast-evolving consumer devices such as smartphones, tablets and PCs that also imply short technology upgrade lifecycles, meaning that apps and services get regularly (almost constantly) updated, at a rate rarely seen before in the broadcast pay-TV world;
- OTT TV is elastic and service-oriented by design, addressing peak usage scenarios as well as enabling alternative Software-as-a-Service (SaaS) business models that provide new opportunities for monetizing content.

In essence, OTT TV sets new expectations for multiscreen pay-TV platforms: they have to be cloud-based, address the need for securely delivering live and on-demand content across multiple networks and devices, while ensuring a flexible environment for updating the platform and optimizing operating costs. Industry leading operators are already showing the way: the “cloudification” of converged TV systems – at the backend and on the client side – is happening fast, driven by new feature-sets, time-to-market and cost efficiency.

At NAGRA, we believe that “moving to the cloud” is both a business opportunity and a must for pay-TV service providers. Doing so will ensure they stay in their leadership position in an open and dynamic video market environment where they are now competing with some of their content suppliers, either directly or through Silicon Giant resellers.

Having worked with leading pay-TV service providers to implement strategic transitions to converged platforms, NAGRA offers a unique and exciting mix of next-generation cloud-based TV products such as the MediaLive multiscreen solution that leverages public and private cloud infrastructure, or a pragmatic mix of both, while supporting fast and frequent product release deployments. On the client side, with the OpenTV 5 connectware platform and studio-approved anyCAST content protection products, NAGRA is also enabling the accelerated integration of third-party premium OTT services like Netflix into the service provider user interface on set-top boxes and other devices. These solutions can be deployed on-premise or as SaaS, cloud TV services. This ensures that win-win OTT TV business propositions, in-house defined or from third-party providers, can be quickly delivered to subscribers with the required best-of-class user experience and security on all devices.

The report that follows takes a comprehensive look at OTT TV and the cloud and how both will continue to transform the infrastructure choices of cable, satellite and telco service providers over the coming years. It also shows how leveraging existing assets and networks while relying on proven market solutions will be key for business success. ●



HOW OTT IS CHANGING THE SHAPE OF PAY TV

We investigate how Pay TV operators are harnessing OTT distribution, and operations paradigms from the IT and Internet worlds, to defend their turf, reach out to new markets and make themselves more agile. By **JOHN MOULDING**.

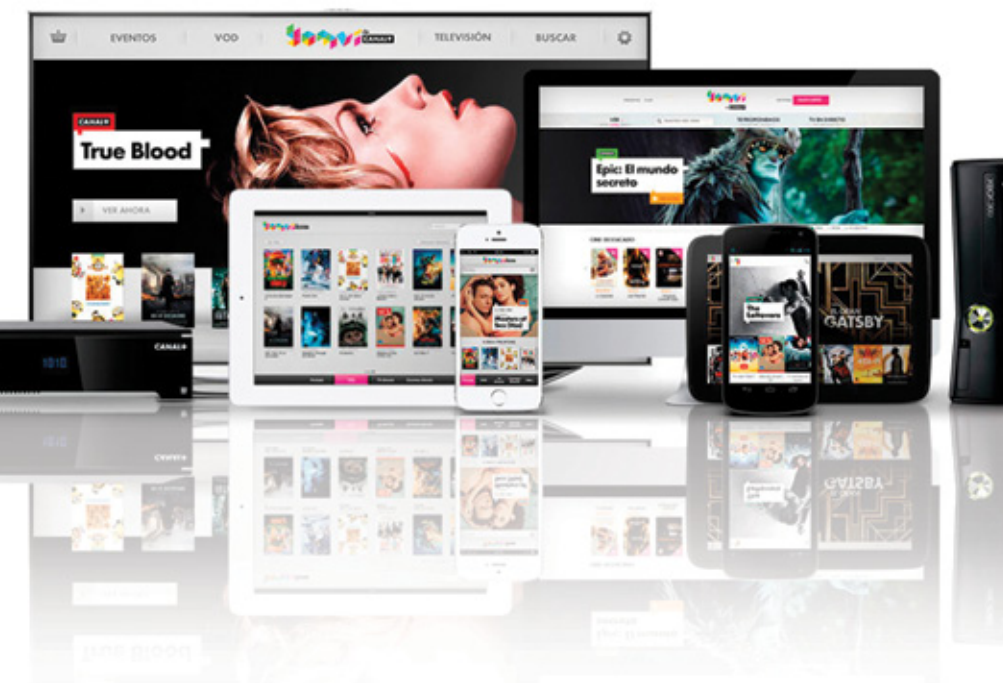
CAPTURING SHARE OF A FAST-GROWING MARKET

Pay TV is still growing but OTT is growing faster – much faster. And that fact sums up both the threat and the opportunity that OTT video presents to platform operators.

As a result, many operators are now moving beyond TV Everywhere (authenticated multiscreen viewing for existing set-top box subscribers) to provide their own standalone OTT services that target different consumer segments, either with SVOD (Subscription VOD) or Pay TV Lite (generally a sub-set of the full Pay TV offer, made available on short contracts and with more a la carte freedom) or both. In some cases it is becoming possible for operators to use the same headends for all their multiscreen and OTT distribution, making operations easier.

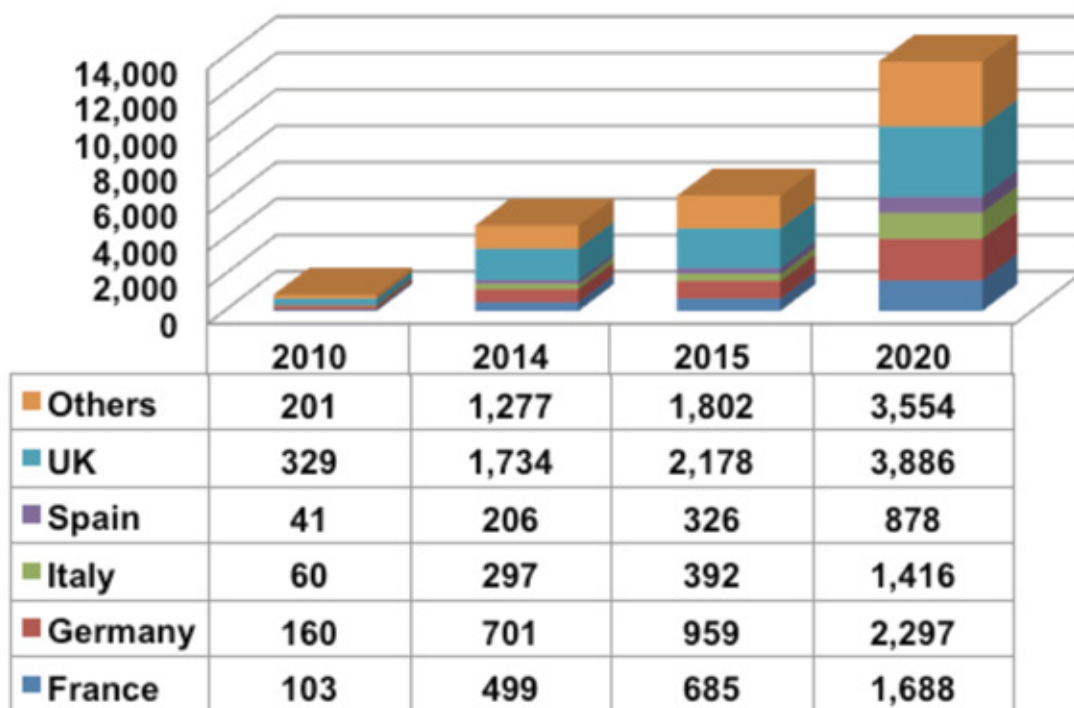
Other Pay TV operators are integrating third-party SVOD, like Netflix and Maxdome, into their set-top box platforms to expand their role as an ‘experience provider’ and to help keep customers on-platform. We are also seeing OTT used instead of satellite or IPTV to make full-flavour Pay TV bouquets available to customers who could not previously get them for technical reasons.

The need to become more engaged in the OTT video marketplace is clear enough. According to the forecasting firm Digital TV Research in April, Pay TV subscribers in Western Europe numbered nearly 93 million in 2010, will hit 99 million this year and increase to 105 ►►



Yomvi from Canal+ - taking full advantage of OTT distribution ▲

OTT TV & video revenues by country (\$ million)



Source: Digital TV Research

▶ million in 2020, but Simon Murray, Principal Analyst at Digital TV Research, says: “Despite the number of Pay TV homes increasing, revenues will remain flat at around \$32 billion. ARPU is falling in most countries and on most platforms.”

Also in April, ABI Research said in its ‘OTT and Multiscreen Services Market Research’ that the Pay TV market has been struggling with increasing customer churn and maintaining ARPU. The analyst firm forecasts 3.7% CAGR (compound annual growth rate) to 2020. In contrast it predicts 24% CAGR for OTT video to 2019 (following 26% revenue growth this year).

The same company notes that SVOD will be the largest OTT revenue source in Western Europe by 2016, accounting for 47% of the

DESPITE THE NUMBER OF PAY TV HOMES INCREASING, REVENUES WILL REMAIN FLAT AND ARPU IS FALLING

total (it was only 12% of the total in 2010). The research firm Ovum reckons SVOD will generate two-thirds of OTT video business this year on a world scale.

Consumption of OTT-delivered content from the Pay TV operators themselves is increasing. Sky Deutschland recently revealed that 34% of the viewing for ‘Game of Thrones’ was conducted via its Sky Go TV Everywhere service. For ‘House of Cards’, where all the episodes were released at the same time, the figure was 64%.

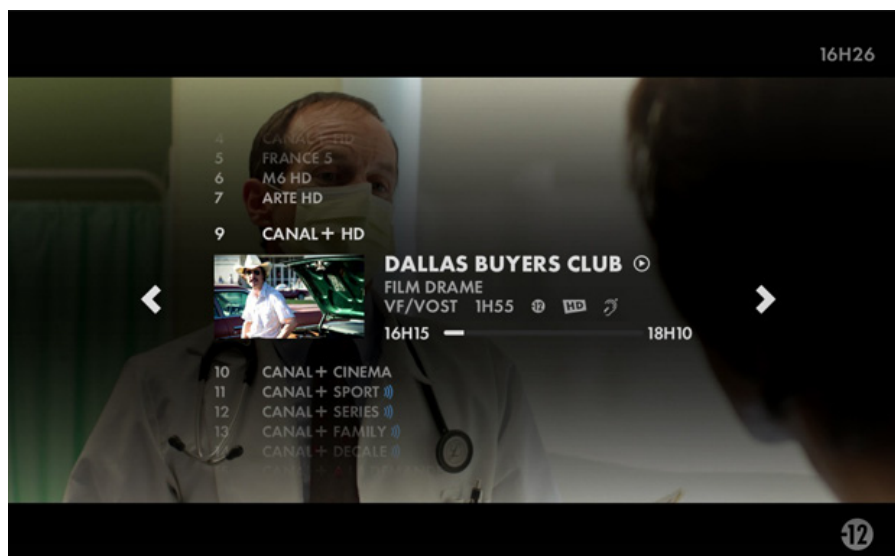
Matt McDonald, Director of

Broadcast Services for Sky in the UK speaks for a number of Pay TV operators when he says: “OTT is critical for Sky. It is growing in importance all the time.”

In March, Yomvi de Canal+, a leading OTT service (then operated by Canal+ in Spain - now part of Telefónica) estimated that half a million people watched the El Clasico game between Real Madrid and Barcelona live on the platform. There were 376,000 devices logged-on, meaning device reach was 29% higher than the previous year.

“We are very pleased to see how ▶▶





The hybrid IP/broadcast EPG at Canal+ France ▲

► quickly the service is being accepted and used by consumers. We believe OTT is and will continue to be a key driver for growth over the next few years,” Adolfo Remacha, Chief Technology Officer, Canal+ Spain, said at the time.

TV Everywhere (TVE) is the starting point for what could be viewed as the Pay TV operator OTT migration. Eric Abbruzzese, Research Analyst for TV & Video at ABI Research, says TVE is not business critical yet, but almost. In April his company listed some of the features needed to combat the growing popularity of Netflix, HBO Go and others. They included mobile device support, a TVE experience that is streamlined and easy to understand, and content search and recommendation.

Simon Trudelle, Senior Product Marketing Director at NAGRA, which provides a range of multiscreen and OTT solutions to the Pay TV industry, reckons network DVR will soon become a baseline requirement. “It is happening today, deployed,” he notes, pointing to NAGRA customers like Euskaltel in northern Spain. “They have an nDVR service that is inherently multi-device, using different delivery schemes for the STB and

for open devices.”

Euskaltel uses the NAGRA MediaLive multiscreen backoffice and delivery platform for its Edonon multiscreen service, which launched in June 2014 and features a large number of live channels.

Alejandro Casal Gómez, Consultant & TV Manager at KPN, the Dutch telco and IPTV provider, has hailed the importance of multiscreen

nDVR and startover, another advanced time-shifting feature. “Being able to watch recordings on personal devices is very, very appreciated by customers and it is very widely used,” he reports.

Eric Abbruzzese says personal recordings will be a primary factor in differentiating TV Everywhere services, “and likely one of the most difficult to implement widely, thanks to licensing and copyright regulations”.

‘Casting’ will be another feature that shapes the TV Everywhere environment, according to Trudelle, who can point to another NAGRA customer, the French cable operator Numericable, as an example of where it is being implemented today. “That is a behaviour that is gaining traction and will become a standard feature,” he says.

So what are the next steps beyond a next-generation TVE offering? Earlier this year, NAGRA commissioned the research and strategy consultancy MTM to explore the opportunities for Pay TV operators in ►

376,000 DEVICES LOGGED-ON TO THE REAL MADRID AND BARCELONA GAME LIVE ON YOMVI DE CANAL+, 29% HIGHER THAN THE PREVIOUS YEAR



Virtualised headend workflows boost multiscreen (Pic: Ericsson) ▲

PAY TV OTT

▶ the OTT market and this included a look at operator strategies and rationale for investment. The company surveyed 90 senior executives worldwide and included a programme of in-depth interviews with operators, premium OTT providers and Pay TV broadcasters.

MTM found that the performance indicators executives wanted to most improve, using OTT, were increasing customer satisfaction, reducing churn, enhancing brand and image, and growing ARPU. Other drivers, rated in importance between 1-5 (and with the average rating shown here) included: Attract new audience segments (4.3), capture viewing share across mobile devices (4.2) and provide a new channel to market (3.7).

Asked to rate the importance of onboarding - bringing third-party OTT services onto your set-top box

platform – cable operators and telcos scored it 4.2 and satellite operators scored it 3.6. Executives also wanted to use OTT to leverage increased knowledge about customers, partly to enable targeted advertising (3.7 rating).

In simple terms, Pay TV operators are focused on TV Everywhere, off-net services that target new customer segments and OTT services that “super-serve customers on set-top box platforms” over the next three years. According to MTM, 80% of the respondents think Pay TV operators will increasingly use linear premium OTT services to offer higher quality content formats like 4K and additional services that supplement their linear broadcast.

MTM also lists the success factors for OTT video according to their level of importance. The top five are: Offer a service through a mobile/



Guy Bisson, Ampere Analysis ▲

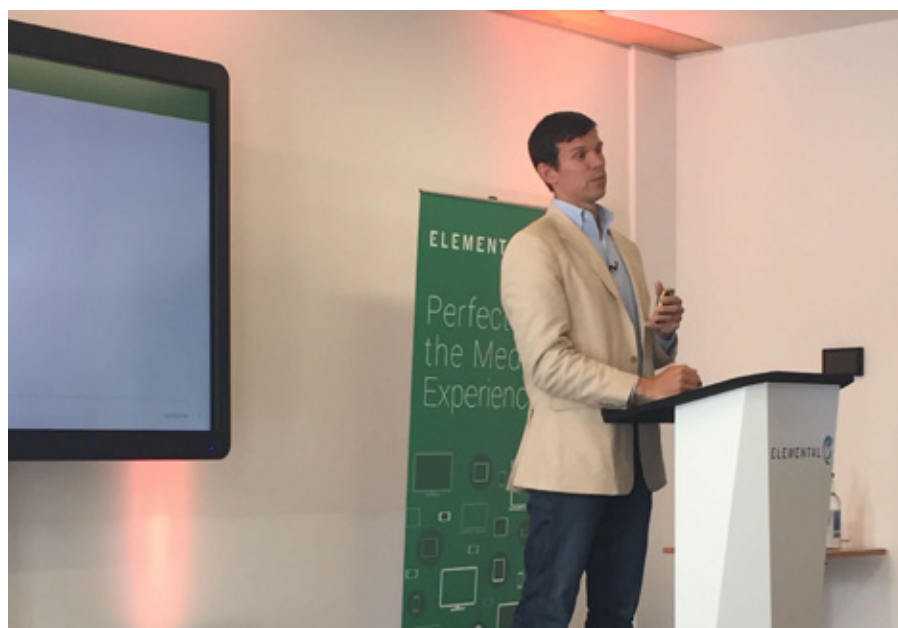
tablet app; Provide an integrated user experience across devices; Provide innovative pricing options like day passes; Appeal to a broad range of audience segments; Bundle third-party OTT services with your own service.

We are already seeing the results of this thinking. DISH Network, as one example (the US satellite Pay TV operator) has integrated Netflix onto its STB platform and given the SVOD giant a channel slot on its EPG. It has also launched Sling TV, its standalone Pay TV Lite OTT offer. DISH was the first of the Pay TV Lite providers to explicitly describe its service as “a viable alternative for live television to the millennial audience,” which is how DISH President and CEO Joseph P. Clayton introduced the service.

Clayton added at launch: “This service gives millions of consumers a new consideration for Pay TV. Sling TV fills a void for an underserved audience.”

Simon Trudelle at NAGRA says there is an appetite among Pay TV operators for targeting a new ▶

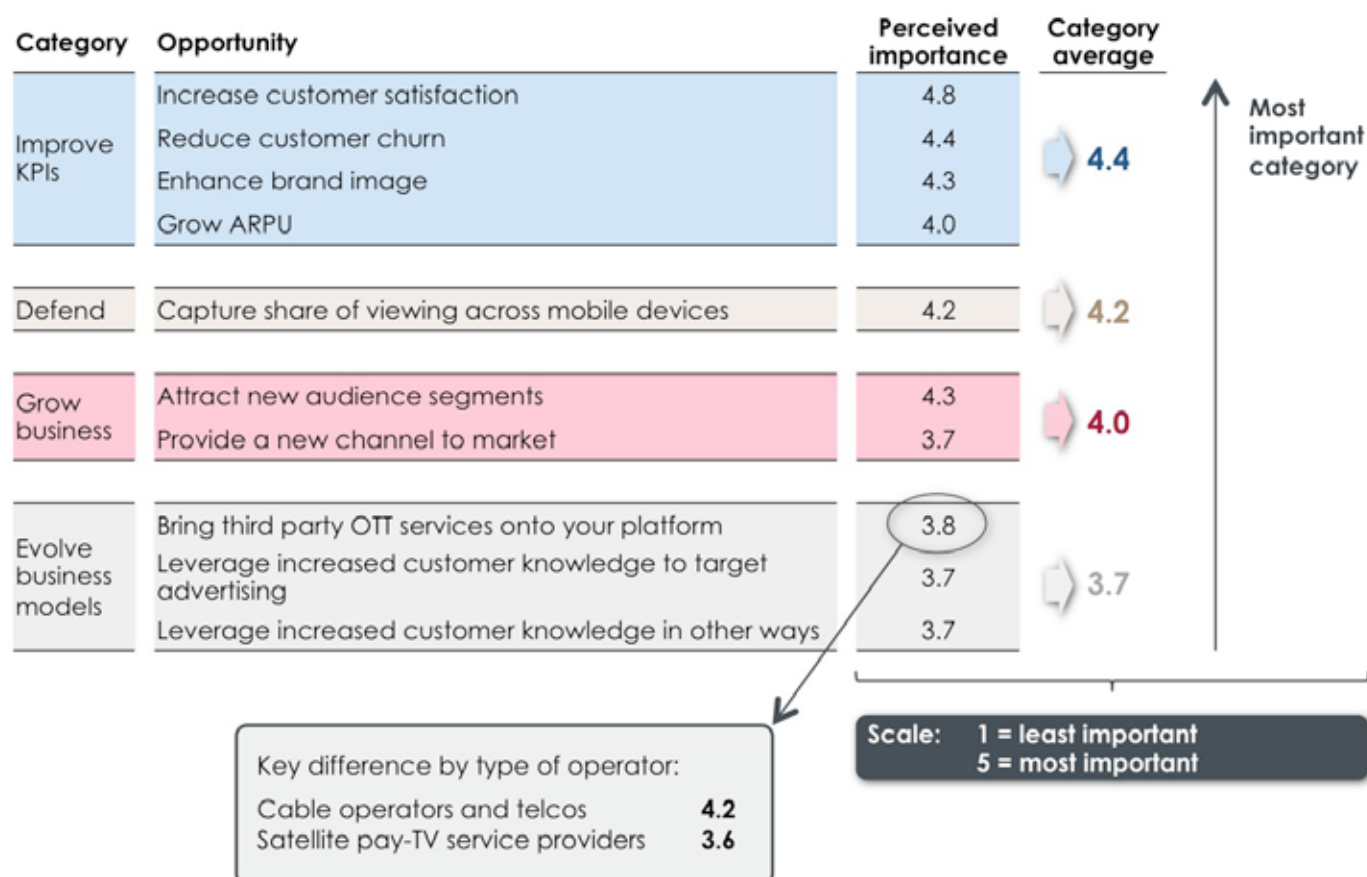
PERFORMANCE INDICATORS EXECUTIVES WANTED TO MOST IMPROVE, USING OTT, WERE INCREASING CUSTOMER SATISFACTION AND REDUCING CHURN



Sam Blackman, Elemental Technologies ▲

PERCEIVED IMPORTANCE OF PREMIUM OTT VIDEO OPPORTUNITIES

Source: *Profiting from the OTT explosion: opportunities for pay-TV providers*, June 2015



▶▶ consumer segment that up until now was hard to convert into subscribers. “They are mostly younger people without families but with a passion for some kinds of content. They are not signing up for Pay TV but getting their content somewhere else.”

Eric Abbruzzese at ABI Research says Pay TV Lite presents a very promising market opportunity, although it is immature. “Even so, being early to market will be beneficial in the long run, by allowing a product the opportunity to grow along with the changes in the market, rather than spend a long time in R&D and miss a lucrative launch window.” He adds: “Any provider looking to capitalise on a younger - on average - demographic should look towards Pay TV Lite.”

There are a few concerns

about Pay TV Lite, most notably the need to avoid cannibalizing the full-flavour Pay TV offer. And in May, Jeff Heynen, Research Director for Broadband Access and Pay TV at IHS warned that the net result of operator OTT services aimed at cord-nevers and cord-cutters “will be slower revenue growth globally, as OTT services carry a lower ARPU.”

Whether true or not, that does not reduce the strategic imperative

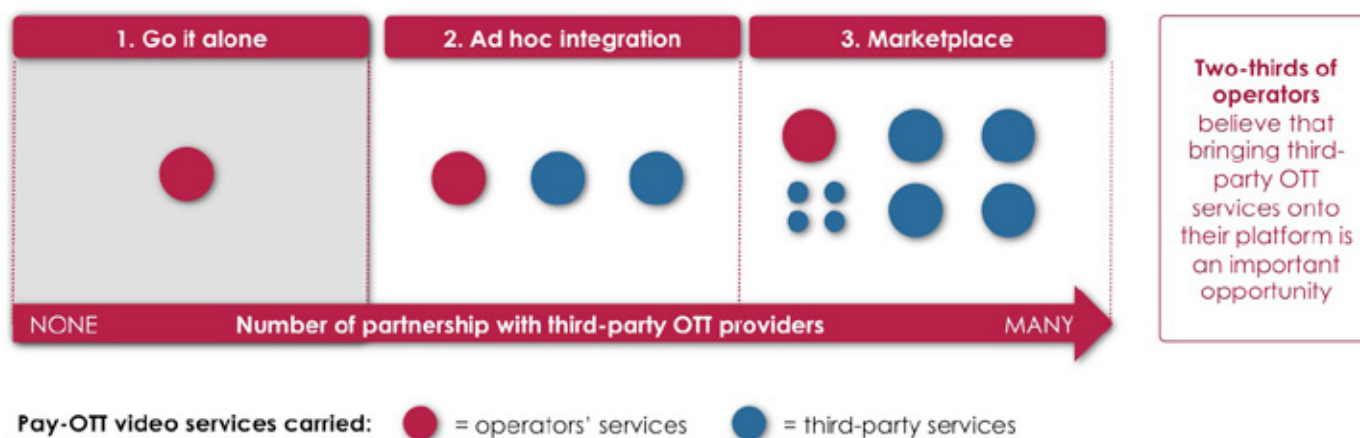
that some operators are attaching to Pay TV Lite.

In April, ABI Research made it clear how important the analyst firm thinks OTT is generally to this market, referring to Pay TV Lite type services and onboarding. “While Pay TV will continue to hold market majority going forward, the best chance for positive growth in the Pay TV space lies in the implementation of OTT capability in both standalone ▶▶

“ANY PROVIDER LOOKING TO CAPITALISE ON A YOUNGER - ON AVERAGE - DEMOGRAPHIC SHOULD LOOK TOWARDS PAY TV LITE”

PARTNERSHIP STRATEGIES FOR ON-PLATFORM OTT SERVICE PROVISION

Source: *Profiting from the OTT explosion: opportunities for pay-TV providers*, June 2015



▶▶ and IP-enabled STB capacities. Those that have already embraced these ideas are on track to see future growth in a slowly declining market.”

Onboarding is one of the biggest stories from the last 12 months and we can now see most of the models that are likely to appear. BT was first to put Netflix onto the existing Pay TV bill when it integrated the SVOD service with its IPTV STB platform. Unitymedia Kabel, the German cable operator, has gone a step further with Maxdome, providing

UNITYMEDIA KABEL PROVIDES INTEGRATED BILLING AND FIRST-LINE CUSTOMER SUPPORT FOR MAXDOME ON ITS SET-TOP BOX

integrated billing and first-line customer support for the service. Numericable pioneered the concept of the OTT marketplace a few years ago, where you have multiple third-party online services available via the PC and set-top box.

Daniel Hesselbarth, Product Innovations TV & Broadband at Unitymedia, told Connected TV World Summit recently: “We have SVOD as part of the core experience. Maxdome is integrated deeply into the platform in search and recommendations. You cannot discriminate any more where the content is coming from. The content could come from TVOD [transactional VOD], SVOD or linear television.”

Richard Broughton, Research Director at research firm Ampere Analysis, says telcos and cable operators see SVOD integrations as a way to boost their triple-play offers. “They are happy to feed broadband demand; you can operate a price

premium in Europe for broadband according to the quality of service and speeds offered.” He believes there is a small revenue share available to platform operators from the SVOD provider, too.

Broughton says onboarding is a strategy for companies who are not in control of all their content, whereas Pay TV operators with the best content are still keeping the SVOD providers at arms length. Indeed, in its study of the OTT market, MTM discovered that one-third of respondents do not see bringing third-party premium OTT services onto their platform as an important opportunity.

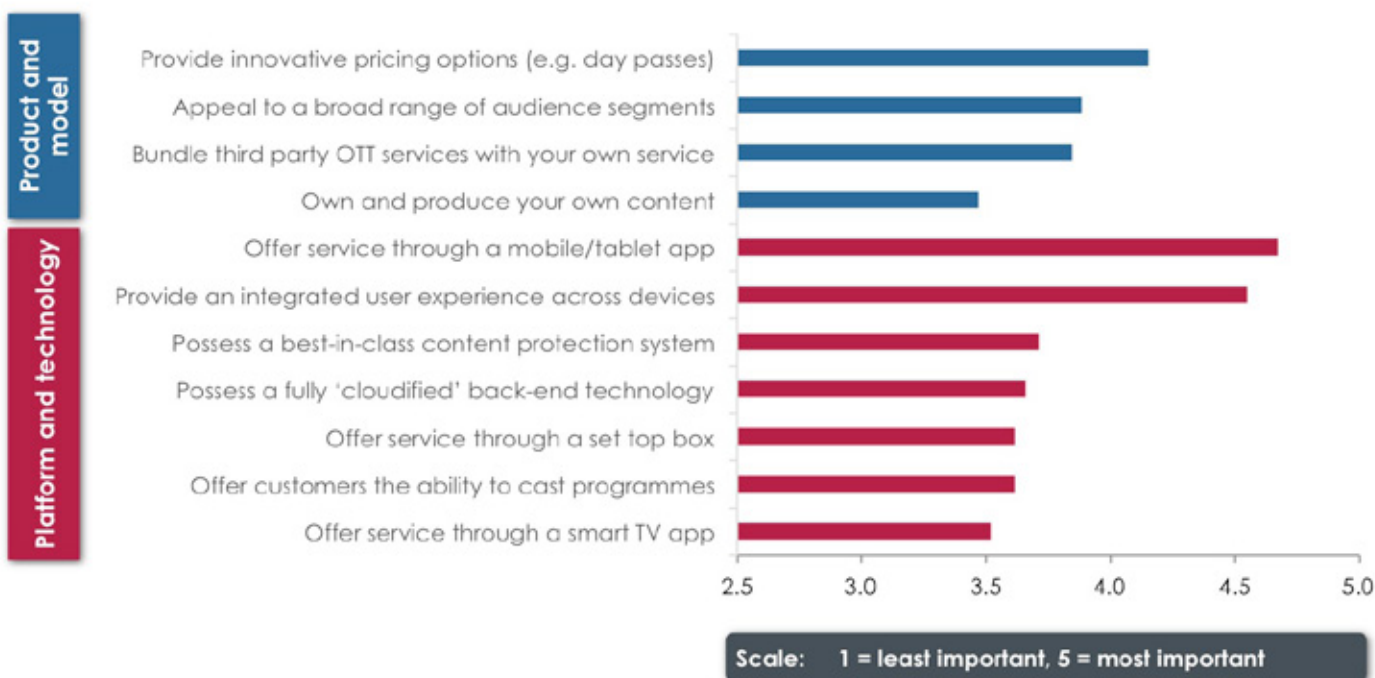
MTM noted that, “Major Pay TV operators with access to strong content rights are well positioned to sustain a go-it-alone strategy, investing in their own on-net and off-net premium OTT services. However, small-scale cable operators and telcos are likely to find a go-it-alone approach challenging to sustain ▶▶



Ian Trow, Harmonic ▲

SUCCESS FACTORS FOR OTT VIDEO SERVICES, BY LEVEL OF IMPORTANCE

Source: *Profiting from the OTT explosion: opportunities for pay-TV providers*, June 2015



Key differences by type of operator:

Cable and telcos give high importance to 'bundling third-party OTT services' (4.2) compared to satellite pay-TV service providers (3.8)

Satellite pay-TV service providers give high importance to 'the ability to cast programmes' (3.8) compared to cable operators and telcos (3.4)

DECIPHER HIGHLIGHTED A KEY TREND BACK IN OCTOBER 2013: SVOD WAS NOT SIGNIFICANTLY ERODING PAY TV SUBSCRIPTIONS

▶ because they lack the scale to efficiently develop their own premium OTT services.”

The Pay TV industry remains wary of OTT. Tony Gunnarsson, Senior Analyst for TV at Ovum, the research and consulting company, recently highlighted the popularity of original productions from SVOD providers and the emergence of streaming services like PlayStation Vue and Yaveo that he says represent the first services that can truly substitute traditional Pay TV. He talks of

an already unforgiving competitive environment that will intensify.

BRINGING OTT PARTNERS ONTO THE PAY TV PLATFORM

Decipher, the UK media consulting firm, was early to highlight a key

trend back in October 2013 with the conclusion (from its Mediabug media consumption tracker) that SVOD was not significantly eroding Pay TV subscriptions. They noted at the time: “While subscriptions to SVOD services are on the rise, only 5% of homes have cancelled or reduced their Pay TV subscription as a result of an SVOD subscription – well below the average churn rate – and only 6% of SVOD subscribers are thinking of doing so in the future.”

In Autumn 2013 Virgin Media made one of the most significant content ‘distribution’ deals of the decade, making Netflix available on a Pay TV platform for the first time, and with the SVOD content showing up in a universal search on the TiVo STB platform. ▶

PAY TV OTT

▶▶ At Connected TV World Summit in June 2015, Andrew Kearney, VP Design at Liberty Global, (which owns Virgin Media) confirmed that the cable operator is still committed to onboarding as a key part of what a cable operator must offer customers in future.

“Service providers should think how they express their brand to the consumer. It might be that content discovery and automated curation, and helping people find their way through a plethora of content and bringing things together with a consistent experience, is where our future is. So if you want to go to Netflix you can find that, but you can also gain access to that content through the operator.”

Guy Bisson, Research Director at Ampere Analysis, noted in June that more US Pay TV homes now take Pay TV with third-party SVOD than take Pay TV alone. “The big European markets have some way to go before they catch-up, but with more than 25% of UK homes already taking standalone SVOD services in combination with a traditional Pay TV offer, OTT SVOD from a third-party is becoming standard as part of the in-home channel line-up in

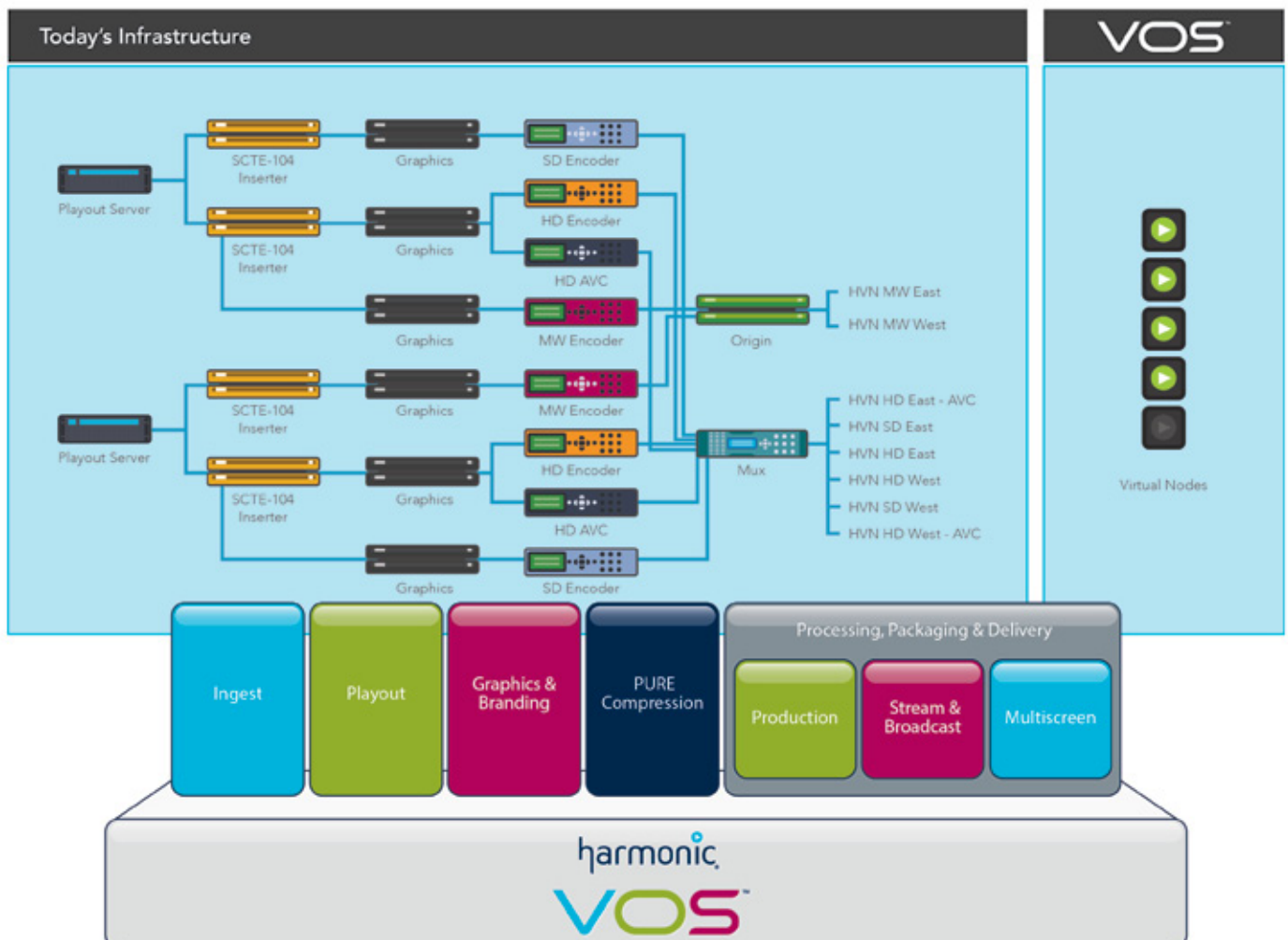
paying households.

“Pay TV operators, across all platform technologies, must now realise the importance of services like Netflix to their own channel line-ups,” he contends. “Bringing SVOD services on-platform, something I have long suggested is key, suddenly seems hard to argue with.”

The message seems to be resonating. For TalkTalk, the UK broadband and IPTV provider, OTT provides a route to a richer content offer ▶▶

IT MIGHT BE THAT HELPING PEOPLE
FIND THEIR WAY THROUGH A
PLETHORA OF CONTENT IS WHERE
OUR FUTURE IS

A Software-Based Media Processing Platform



VOS from Harmonic enables virtualisation and convergence of headend functions ▲

“WHILE WE WOULD LIKE CUSTOMERS TO USE OUR PAY TV CONTENT, IF THEY ARE HAPPY USING OTHER OTT SERVICES ON OUR PLATFORM WE ARE HAPPY”

▶ on its set-top box. Will Ennett, Head of Pay TV Content at TalkTalk said recently: “We are a value player so we are not going to invest in lots of original content, so our ethos is different [to content rich platform operators] and working with third-party OTT providers is a value-add to our service.

“Our ambition is to be the aggregator of great TV content. While we would like customers to use our Pay TV content, if they are happy using other OTT services on our platform we are happy.”

He added that TalkTalk can make money from offering an OTT marketplace but the revenues will be achieved ‘holistically’, meaning OTT would help keep people within the service, giving them the opportunity to upsell or monetise them in other ways.

Nicholas Ontiveros, Head

of Fixed Product Management for Vodafone Group, talks of a golden age in TV, helped by original productions from the pure-play OTT providers. Like Kearney, he sees an opportunity to make everything available in one place, easily. “It could be infuriating for consumers if they want to search across all of this content,” he says. “It will be like shopping for breakfast cereal and having to go down every aisle of the grocery store to see what is available.

“Someone needs to bring it all together under one service wrapper, and allow you to subscribe to all these services. We can provide a single place for this, as a trusted guide and aggregator of all the content that is available.”

This approach does come with challenges. You need the online providers to open up their meta-data to enable universal search and



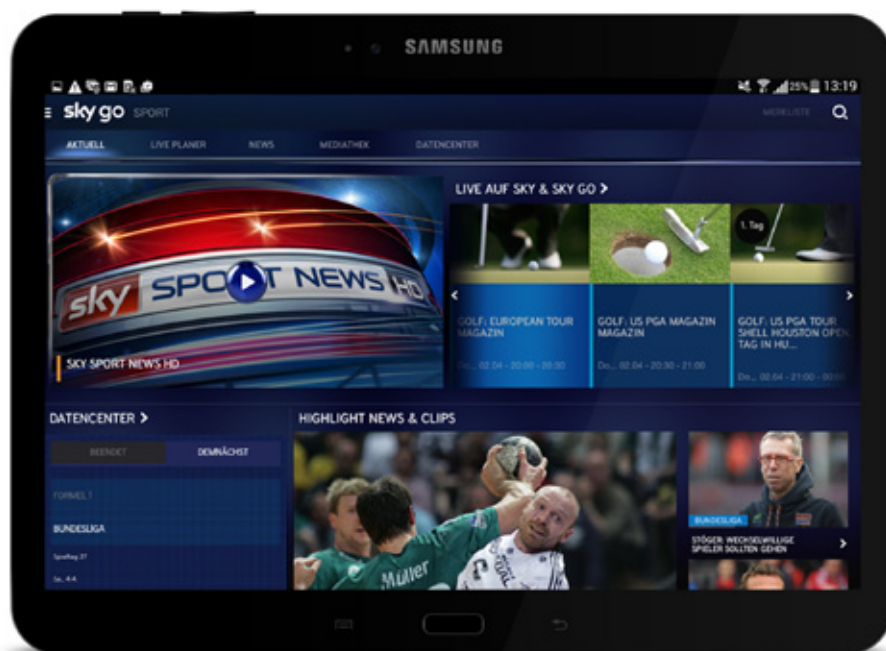
Simon Trudelle, NAGRA ▲

recommendation. Some may not want to. Some commentators argue that younger consumers are quite happy to find their OTT content independently. Nevertheless, in the MTM study, 76% of respondents agreed that standalone premium OTT services are valuable potential partners for Pay TV operators and telcos.

The study said: “Operators are pursuing partnerships for various reasons including keeping audiences on-platform, differentiating their content offers, and/or because they lack the skills and content assets to offer their own premium OTT services.”

It added: “Many industry participants foresee operators increasingly providing distribution, billing and first-level customer support in future – in some cases providing a marketplace and/or selling packages of third-party OTT content and apps, in some ways replicating the linear channel aggregation model.”

Christian Van Boven, VP, Multiscreen Product Management & Architecture at NAGRA, likens the organisation of the television and ▶▶



Sky Go from Sky Deutschland ▲



Harmonic's Electra X3: appliance form-factor with generic hardware ▲

▶ video marketplace to different kinds of shopping experiences. In a fruit market you wander around and it takes a lot of effort to find what you want. The other extreme is a department store, extremely well organised with a limited choice of brands. Between these two is the shopping mall. “We are talking to operators about the mall model. When you offer Netflix there is a convenience factor that you bring to consumers,” he says.

Simon Trudelle at NAGRA adds: “Our research with MTM concluded that this marketplace model will emerge. The best model varies according to the type of operator – whether you are a satellite platform that owns 90% of the best content rights in a given country or a cable operator who redistributes content brands. The key is to have flexibility

WHAT DOES THE OTT PROVIDER GAIN FROM AN ON-NET PARTNERSHIP WITH A PAY TV OPERATOR? REACH

in your backend and on the device side to accommodate the different models.”

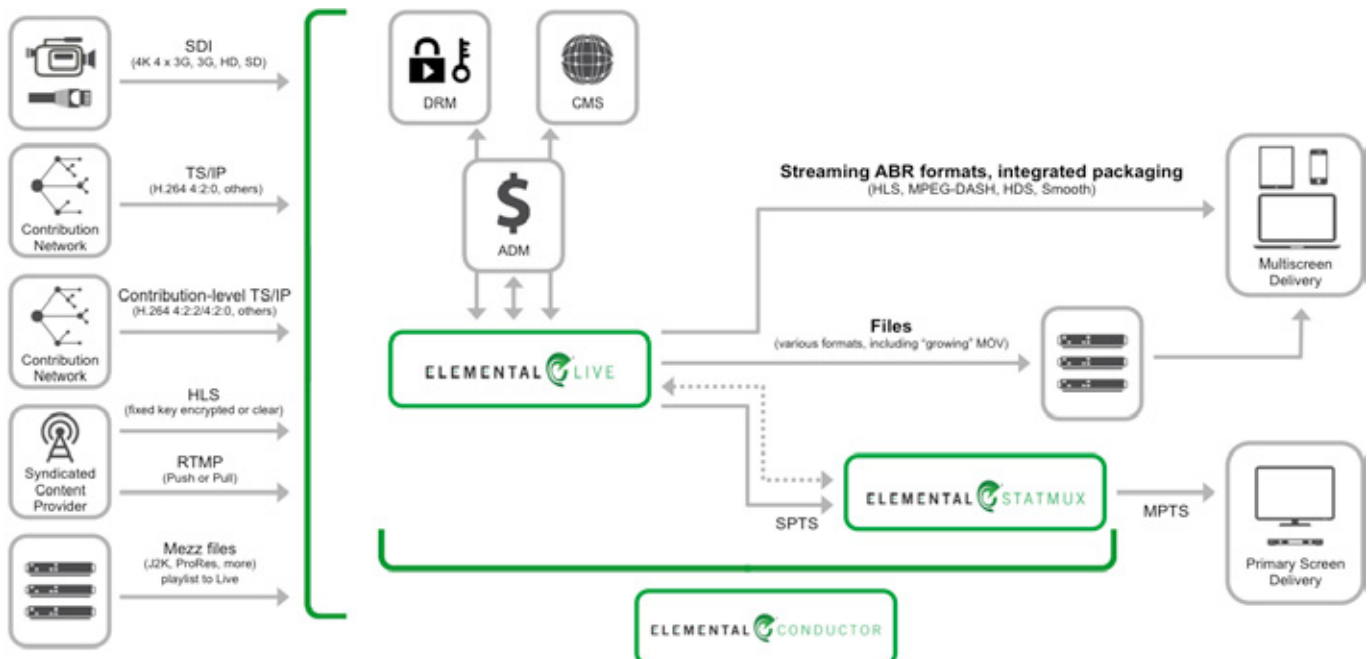
What does the OTT provider gain from an on-net partnership with a Pay TV operator? According to Casal Gómez at KPN the answer is simple: “Reach”. The MTM study lists distribution to the TV set, and potentially billing, marketing and customer support, as incentives.

Speaking in June, Filmon Ze-rai, COO & Managing Director at Maxdome, said one way to differentiate an SVOD service from others on the television set is to become

more deeply integrated into the Pay TV platform than a standard app. “When you look at the cooperation with Unitymedia, we are deeply integrated into the TV ecosystem. If you are watching live TV [ProSiebensat.1 services] and click on ‘catch-up’ you always see Maxdome and we are the only ‘hard-bundled’ service on the platform, meaning we are fully commercially integrated. That is distinct.”

He added: “If we package our service with other services we tend to increase stickiness.”

Hesselbarth at Unitymedia has ▶▶



Elemental Technologies illustrates how unified video processing works ▲

PAY TV OTT

▶ dismissed concerns that having an OTT marketplace on their platform presents the risk of becoming a dumb pipe while other media companies have the customer relationships and data. “I don’t think that is a big threat because aggregation and presentation of the content is important and that is what our customers appreciate.”

He says of OTT partnerships: “It is a win-win situation at the moment. I think they need us and we need them. For us it complements our content offering.”

Darren Fawcett, CTO at the set-top box maker Pace (which is being acquired by ARRIS) says it is crucial that Pay TV operators deploy set-top boxes capable of handling the next big thing – which in this context means being able to support BBC iPlayer or Netflix or other OTT apps. “You own the shop window. People may watch Netflix but they come to your shop window before going on

the next journey.”

The MTM study lists the success factors for OTT partnership strategies, including technology. These include: A fast integration process, enabled by flexible platform and integration resource; High specification set-top boxes to optimise performance of applications; Access to a range of supporting tools and services, such as billing and customer support; Off-platform support – especially marketing and cross-promotion.

“Third-party OTT service providers have finite resource to support integration and typically prioritise on the basis of expected ROI from the partnership – favouring platforms that require lower resource or offer larger audiences,” the report states. “Operators also need to ensure that their platforms support a high-quality user experience for third-party OTT applications, which is challenging in cases where

the operator has a fragmented base of legacy set-top boxes.”

According to Anthony Smith-Chaigneau, Senior Product Marketing Director at NAGRA, some set-top box software providers are doing their part to make the onboarding process much easier. In January, NAGRA announced a product relationship with Netflix that enables the pre-integration of NAGRA anyCAST content protection and the OpenTV 5 connectware (a hybrid broadcast and broadband STB/gateway software platform) with the Netflix service. The aim is to make it easier for NAGRA customers to take Netflix on-platform.

The integration includes mapping of the STB remote control keys to Netflix navigation. anyCAST enables an operator to use a single security service platform to secure content to any network whether it is cable, satellite, terrestrial, OTT or any combination of them. Notably, it secures the whole STB platform including software within it, going beyond what a DRM like PlayReady does.

Smith-Chaigneau notes: “OpenTV 5 has Netflix ‘in the box’ and ready to be launched. All you need is a commercial agreement. From a technical standpoint all the complexity is taken away while the viewer gets all the best content in one place by ‘staying on HDMI 1’”

REACHING NEW MARKET SEGMENTS WITH PAY TV LITE

The other major development in OTT strategy is the Pay TV Lite offer, where a sub-set of the full Pay TV ▶▶

SOME SET-TOP BOX SOFTWARE PROVIDERS ARE DOING THEIR PART TO MAKE THE ONBOARDING PROCESS MUCH EASIER



Multiscreen nDVR is very popular at KPN ▲



ANYONE IN BELGIUM CAN SIGN-UP TO 'BE TV GO' AND GET ACCESS TO LIVE AND ON-DEMAND CONTENT INCLUDING EXCLUSIVE SERIES AND MOVIES

► bouquet is made available in a separate service to non-STB subscribers, with the content delivered OTT. Typically you can sign up for content on a month-by-month basis and some operators provide one day passes for attractive content like sport.

Pay TV Lite feeds a desire for a more a la carte approach to buying content, which can only be accommodated so far on the full-flavour services. With its new Stream offering (announced this summer as a Beta product), Comcast will provide an example of Pay TV Lite that is only available to your own broadband customers. In Europe it is more common to use Pay TV Lite services to reach out to anybody, regardless of whose broadband service they take.

Typically the European Pay TV Lite pioneers own their own Pay TV

channels or content rights. The Belgian cable operator VOO provides a good example. The company owns the Pay TV channel 'Be tv', originally distributed on the VOO network and via partners in Belgium (like cable operators Telenet and Numericable) and also in Luxembourg (with Orange). Now there is an OTT version of the service, free to existing Be tv subscribers and available as a standalone offer to non Be tv customers.

Anyone in Belgium can sign-up to 'Be tv Go' and get access to live and on-demand content including exclusive US and European series and movies. There are 24-hour passes for sports. The service can be viewed on PCs, iOS and Android tablets, as well as the Microsoft Xbox One. Manuel Hannart Sánchez, Product Manager Pay TV at VOO/Be tv, says the



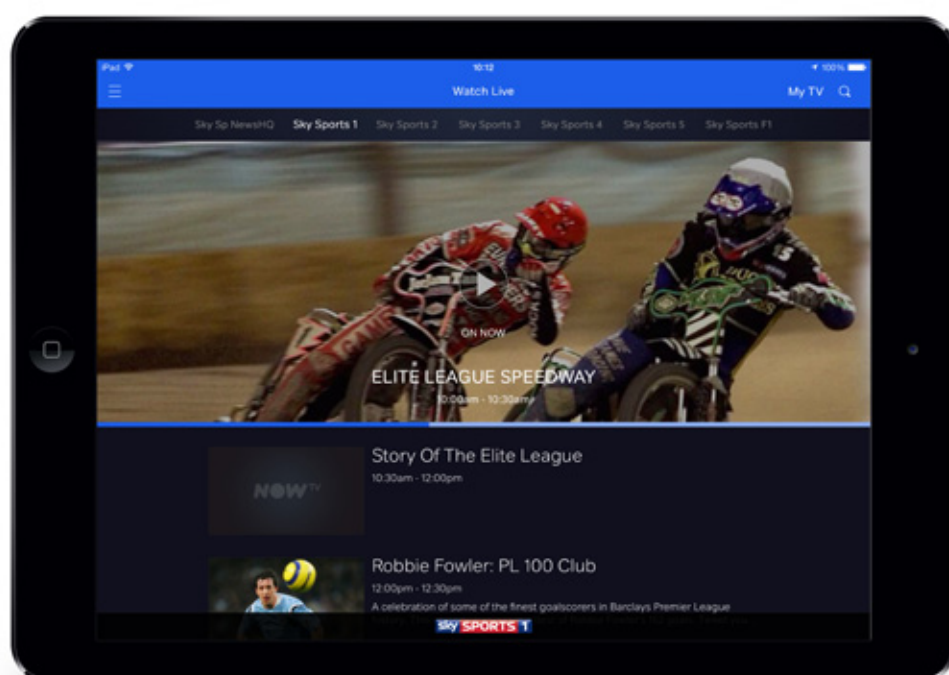
Richard Broughton, Ampere Analysis ▲

company wanted to give everyone in Belgium the chance to subscribe. "We wanted to make Be tv available everywhere."

Sky in the UK was early to market with a Pay TV Lite offer, called NOW TV, which also includes 24 hour (and weekly) sports subscriptions. The company said at launch: "NOW TV is a very, very important means for us to talk to a new audience and so plays an increasingly important part in our distribution story and in the way we monetise our content investments."

Simon Trudelle at NAGRA first talked publicly about the trend for finer Pay TV market segmentation last autumn. He said then: "We have reached an inflection point in the Pay TV industry where OTT delivery and connected devices are opening the way for more granular segmentation of the viewing population, according to what they are willing to pay and what their interests are.

"This segmentation is becoming a broad reality and it is probably time for every service provider to join the fray and launch [OTT] services and monetise new consumers ►►



NOW TV from Sky with sports day passes available ▲

PAY TV OTT

▶ and new experiences. Sometimes this means going off-net. It definitely means creating more targeted content bundles and presenting them to consumers who are movie-centric or sports-centric, and so on.”

Sky Deutschland is perhaps the best example of a Pay TV operator going down this road. The company has full Pay TV and its Pay TV Lite service called Sky Online (launched in October 2014) but also its own SVOD service, Snap. This is viewed as a direct alternative to Netflix, with thousands of titles including box-sets.

According to Richard Broughton at Ampere Analysis, the market for Pay TV lite is growing and one of the aims for operators is to capture an audience base that in the past was unwilling to pay for a full Pay TV offer. “Another incentive [to launch] is to capture audiences that might be thinking about migrating away from Pay TV in favour of lower cost alternatives, or who have already migrated away.”

There are health warnings attached to Pay TV Lite offers. Eric Abbruzzese (ABI Research) points out that churn rates are expected to be higher than for full Pay TV because of

shorter contracts. There will be some higher marketing costs – though offset by a reduction in OpEx for this kind of offer (no truck rolls, for starters). And you risk your brand name if you produce an unpopular product.

There is not just the risk, but the certainty that there will be some cannibalisation, he reckons. “However, those that drop subscriptions in favour of Lite were likely to drop their subscription in the near future

expensive to get the content via the OTT service.”

Beyond these warnings, everything else is good news. Abbruzzese predicts: “As content licensing and pricing settles down and becomes a bit more predictable, Pay TV Lite will serve as a promising route for operators to secondarily reduce churn. Pay TV subscribers will still drop their big subscription but in favour of the alternative Lite offering.

“A STEADY INCREASE IN REVENUES AND A GRADUAL REDUCTION IN CHURN CAN BE EXPECTED WITH A SUCCESSFUL PAY TV LITE PRODUCT”

anyway, so losses should not be substantial. It will not be as negative as losing the customer outright.”

To prevent avoidable cannibalisation you need to maintain the gap between the full Pay TV offer and the Pay TV Lite packages, Broughton advises. “Do not offer the full content selection or at least package it in a way so that if you are a sports fan, for example, it is actually more

“ARPU will likely be unaffected or take a small hit near-term [for Pay TV operators who launch Lite services], but long-term should rise to higher than it would be without introducing the Lite service,” he continues. “A steady increase in revenues and a gradual reduction in churn can also be expected with a successful product.”

The presence of successful SVOD services in a country does not prevent Pay TV Lite launches, and to some extent may ‘warm-up’ the market for them. Guy Bisson (Ampere Analysis) says there is an opportunity for Pay TV operators to capture a market segment [of non-Pay TV homes] where consumers take SVOD but are interested in supplementing their SVOD viewing with a Pay TV Lite offer.

“It seems that the SVOD players have inadvertently created a new segment opportunity that was previously in search of its unique selling point,” he suggests. ▶



Telecom Italia customers who take Sky OTT receive a Sky STB ▲



PAY TV OTT

NOW YOMVI IS BEING USED AGAIN IN SPAIN AS A SUBSTITUTE FOR CLASSIC IPTV, THIS TIME WITH VODAFONE SPAIN

▶ OTT DISTRIBUTION AS A SUBSTITUTE FOR IPTV OR SATELLITE

OTT distribution could be used to increase the overall addressable market for traditional, full-flavour Pay TV. This is where OTT substitutes satellite signals where satellite dishes are prohibited, or provides the affordable reach that multicast IPTV networks cannot offer, for example.

A recent illustration is the partnership between Sky Italia and Telecom Italia where the entire Sky bouquet is made available to

Telecom Italia customers on set-top boxes via the broadband, rather than classic IPTV, network. Telecom Italia households sign two contracts: one with the telco for broadband and voice (and maybe mobile), the other with Sky for the television. They get a dedicated Sky decoder, a hybrid STB developed by Sky with Pace.

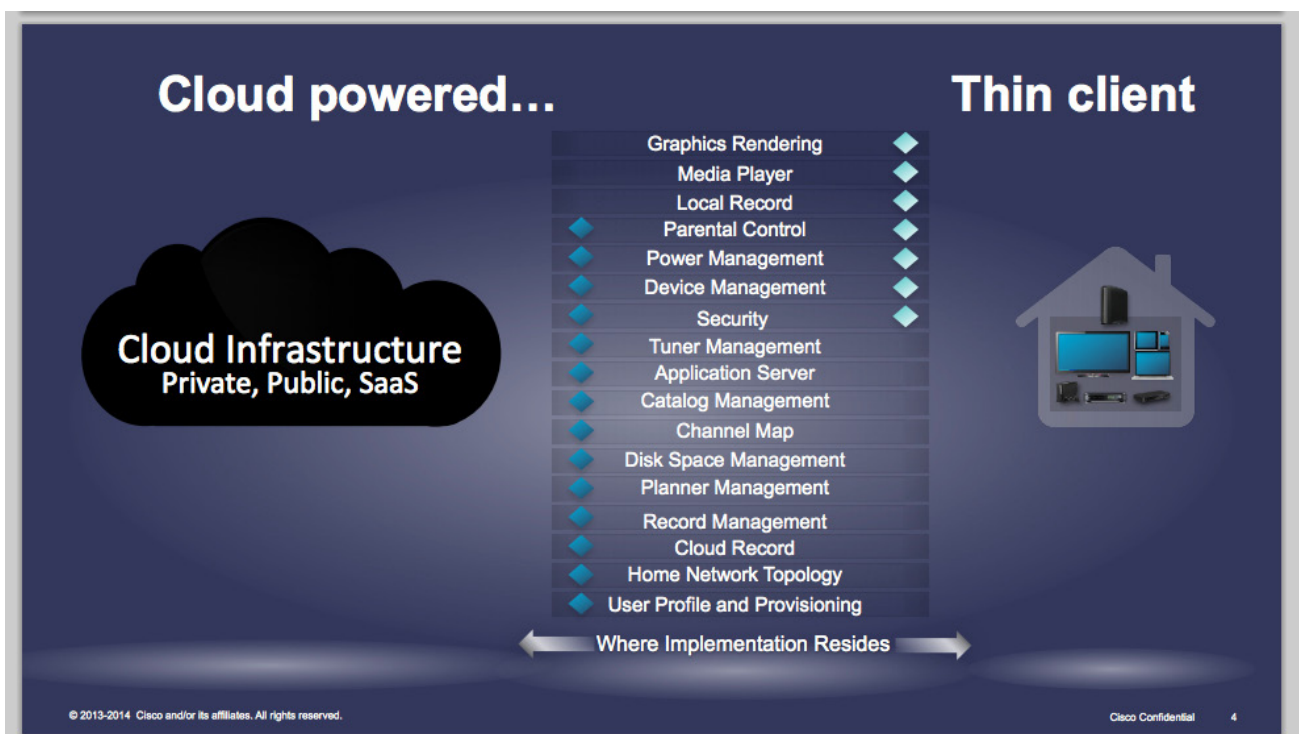
Andrea Zappia, Chief Executive at Sky Italia declared, "This is a great example of two companies embracing innovation to open up new opportunities for growth. For the very first time, the millions of Italian customers unable to install a dish will be able to enjoy all the benefits of the Sky experience."

CANAL+ has certainly demonstrated the growing potential for Pay TV companies to harness OTT. Back in October 2011 CANAL+ in



Nigel Walley, Decipher ▲

Spain launched an Internet brand called Yomvi to initially cover the TV Everywhere multiscreen offer for existing subscribers. In 2012 Yomvi was opened up to non-Pay TV customers who could take out a discrete subscription for the Internet service only. Today you can sign up for family, football and other genre-specific ▶▶



Cisco shows which STB functions can be virtualized ▲



PAY TV OTT

▶ channel bundles.

CANAL+ also made Yomvi available to a Spanish telco called Jazztel who effectively replaced their own classic IPTV service (which was struggling to reach scale) with this OTT bouquet, offered over xDSL lines to set-top boxes. Now Yomvi is being used again in Spain as a substitute for classic IPTV, this time with Vodafone Spain, who last October introduced a TV service with a hybrid set-top box (the Vodafone Box) that combines local DTT signals with the Yomvi OTT content. You can watch the Yomvi programming on a television or on multiscreen devices.

NAGRA has been a technology partner for these two CANAL+ innovations, making it possible to stream adaptive bit rate video to open CE devices and hybrid STBs with a rationalised headend. Vodafone Spain has made use of NAGRA's QuickStart Hybrid solution - a pre-integrated technology ecosystem designed for implementing advanced media capabilities quickly.

The QuickStart components include NAGRA anyCAST content protection and studio-approved DRM, OpenTV 5 HTML5 connectware, NAGRA's Gravity Edge reference user interface and NAGRA MediaLive Multiscreen, all pre-integrated with a SmarDTV HD set-top box.

initiative, CANAL+ France wanted to make its full Canal+ premium channel line-up and full Canalsat satellite bouquet available to its pay DTT subscribers. As there was no capacity to do this via the DTT network, the company upgraded its DTT set-top boxes to receive OTT content and now delivers 140 channels of content

CANAL+ FRANCE UPGRADED ITS DTT SET-TOP BOXES TO RECEIVE OTT CONTENT AND NOW DELIVERS 140 CHANNELS VIA BROADBAND

Isaac Mendoza, Head of TV and Digital Services at Vodafone Spain, said of this launch: "We wanted a technology that would allow us to bring premium services and applications to our customers quickly while giving us room to grow and innovate."

In an unrelated CANAL+

into the terrestrial homes via broadband.

The content is delivered using HTTP adaptive bit rate streaming, with all content available in HD. The OTT channels are mixed with broadcast channels in the same EPG. ▶▶



Liberty Global is virtualising some headend functions. Picture shows the Horizon platform ▲



▶ ● NEW OPERATIONS PARADIGMS THANKS TO VIRTUALIZATION

The Pay TV industry is harnessing the flexibility of OTT distribution and also increasingly using technologies from the Internet and IT worlds to increase their agility and reduce operational costs. We are on a journey towards virtualisation of video processing and storage functions, moving processes that have traditionally been hosted on set-top boxes or in operator headends to operator-hosted data centres or data centres owned and operated by third-parties – including by companies like Amazon Web Services.

This process emerged at the start of this decade with multiscreen encoding and transcoding products that removed the processing software from dedicated ‘pizza box’ style hardware appliances that had always been designed and optimised specifically for the video processing task. The software was instead put onto



Filmon Zerai of Maxdome at Connected TV Summit 2015 ▲

SOFTWARE-BASED VIDEO PROCESSING IS BEING APPLIED TO LINEAR MULTISCREEN VIDEO, WITH CLASSIC BROADCAST PERHAPS FOLLOWING

generic server hardware that could be used for other tasks as well.

Envivio was among the pioneers. Back in November 2011 the company announced that its Muse transcoding software, traditionally married to the company’s range of 4Caster hardware processing appliances for multiscreen TV deployments, was being made available on HP BladeSystem and ProLiant servers. This virtualisation was designed

to meet the needs “of service providers with large-scale operations who wish to increase scalability and simplify hardware management by combining the IT and headend infrastructure.”

Software-based video processing (meaning the software had been virtualised to generic hardware) was first applied to multiscreen delivery (with its lower picture quality demands) and on-demand (which only requires non real-time transcoding). Today it is being applied to linear multiscreen video and there is an expectation that eventually all content, including classic broadcast, will be processed in this way.

Sam Blackman, CEO and Co-Founder at Elemental Technologies, (which is being acquired by Amazon Web Services) says there are two reasons why the world is transitioning to software. “The complexity of video has grown exponentially over the past couple of years due to multiscreen and the diversity of devices and protocols you have to support, ▶▶



Virgin Media has integrated Netflix into its TiVo platform ▲

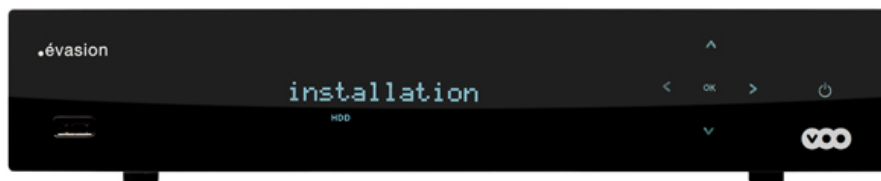


PAY TV OTT

▶ which are changing all the time. The second reason is that generic processors are now fast enough.”

He thinks we are at an inflection point for video processing today, because ‘software-with-generic’ has caught up with optimised hardware capabilities. “We have had a [software] solution for HEVC processing since 2013. There is still no specialised hardware on the market that can do HD in HEVC,” he cites as evidence.

The distinction between virtualisation and the cloud is a subtle one. Once you start to orchestrate different virtualised resources, like transcoding software on different servers and maybe in different data centres, you are stepping into the cloud. And few media companies, whether broadcasters or Pay TV operators, are going to be fully virtualised in the near-term; the new world will be a mixture of dedicated hardware



The évasion set-top box from VOO ▲

“PROPRIETARY HARDWARE IS NOT NEEDED ANYMORE; IT CAN BE REPLACED BY VIRTUALISED HARDWARE THAT IS CHEAPER AND EASIER TO MANAGE”

in traditional headends, virtualised software within on-premise data centres and virtualised software hosted in third-party data centres.

NAGRA’s Simon Trudelle says of virtualisation generally: “Proprietary hardware is not needed anymore; it can be replaced by virtualised hardware that is cheaper and easier to manage and maintain, and which can be run by third-parties for you.” Christian Van Boven (NAGRA) says virtualisation allows you

to make efficient use of hardware, which could be used for corporate applications in the afternoon but video requirements during prime time, for example. He adds that you can scale resources more quickly and there are deployment efficiencies, so potentially fast time-to-market with services and new features.

Entire multiscreen headends and backoffices can now be virtualised and then hosted in the cloud, something that NAGRA has already done for customers.

NAGRA MediaLive is a unified back office and platform for the delivery of TV and multiscreen services that can be operated on-premise or in the cloud on a Software as a Service (SaaS) basis. The solution covers live TV, catch-up, VOD, network DVR, studio-approved download-to-go, Electronic Sell Through, multi-language audio, subtitles, personal recommendations and promotions, among other things.

This solution can be used as a common backend for TV Everywhere services and standalone OTT services like Pay TV Lite deployed by operators. When made available as part of a cloud TV platform it enables fast deployment and rapid growth in user numbers. A pay-as-you-grow business model means ▶▶



anyCAST



NAGRA’s anyCAST protects content on any screen ▲



Ed Barton, Ovum ▲

▶▶ even small Pay TV operators can immediately compete with large international OTT platforms.

VOO illustrates how deployment options have become far more

THE BE TV GO SERVICE IS LARGELY CLOUD-BASED BUT PARTIALLY ON-SITE, IN TERMS OF ITS OPERATIONS

flexible – and how operations are becoming more ‘hybrid’. The company built an on-premise multiscreen headend for its VOOmotion TV Everywhere offer and it has utilised the same headend for the transcoding and packaging of its linear Be tv channels. This headend is operated and monitored by VOO/Be tv staff.

The rest of the Be tv Go service (including non-linear content requirements) is hosted in the cloud. The VOO/Be tv operations team are in the driving seat for everything related to the content catalogue composition, metadata, modifications, etc. “We provide this information to NAGRA, our platform supplier, and they then do the transcoding and

packaging and publishing of our information,” the company explains.

Thus Be tv Go is largely cloud-based but partially on-site. The cloud portion uses the NAGRA MediaLive platform.

VOO and Be tv executives have credited the cloud solution with enabling a fast commercial launch (it took five months to deploy) while managing risks and reducing upfront investment.

Slowly but surely, the Pay TV industry is starting to virtualise. Liberty Global is moving headend functions like encoding, transcoding and multiplexing to the cloud, creating a more virtualised delivery infrastructure for its European operating ▶▶



Free-to-air platforms like YouView include Netflix ▲

How Unitymedia markets Maxdome to customers on its website ▲

SKY IN THE UK IS RE-ENGINEERING ITS OPERATIONS FOR SOFTWARE-BASED, VIRTUALISED TRANSCODING OF ITS LINEAR CONTENT FOR SKY GO AND NOW TV

► companies, for example. Sky in the UK has virtualised the transcoding for the on-demand content it makes available on Sky Go and NOW TV and is currently re-engineering its operations for software-based, virtualised transcoding of its linear content for the same services (all using Elemental Technologies software).

Matt McDonald at Sky says

this kind of software-based approach to video processing is the future. “We need an architecture that is fast and responsive in this very dynamic OTT world.”

Some Pay TV operators are starting to create economies of scale from the headends they built for their TV Everywhere services. Canal+ in France, as an example, now

uses its multiscreen headend to deliver its OTT bouquet to the hybrid broadband/DTT set-top boxes. But this headend still runs in parallel to a headend that supplies Canal+ channels to IPTV partners.

So the next stage, after software processing and virtualisation, and in parallel with cloud developments, is the emergence of the truly unified headend where OTT and broadcast services are all found. The Swedish Pay TV provider Com Hem looks to be going in this direction, having recently announced a headend that will support linear video across cable, IPTV and OTT networks. It will simultaneously process live DVB-C, RTP and ABR streams for all Com Hem delivery networks.

Harmonic is another headend provider leading the charge towards virtualisation and convergence with its VOS software-based media processing platform. This supports a whole range of functions that can now be virtualised (or still run on dedicated appliances), including ingest, graphics, branding, compression and packaging. VOS effectively unifies the entire media processing chain, from ingest to delivery, for broadcast and multiscreen, on a ►►



Sky Italia expanded distribution using OTT ▲

Virgin Media promotes Netflix as a content partner ▲

►► single platform.

Sky Italia become one of the first Harmonic customers to adopt the VOS platform last year and it is used for the OTT bouquet delivered to Telecom Italia homes. Sky Italia highlighted the potential to use “a single system for all distribution.”

Massimo Bertolotti, Head of Innovation and Multimedia Distribution at Sky Italia, declared: “The survival of service providers depends on their ability to launch new services ahead of the competition.

“THE SURVIVAL OF SERVICE PROVIDERS DEPENDS ON THEIR ABILITY TO LAUNCH NEW SERVICES AHEAD OF THE COMPETITION”

Harmonic VOS, with transcoding and stream packaging capabilities, dramatically reduces our costs and complexity. It consolidates the number of discrete appliances required... We now have the agility to launch

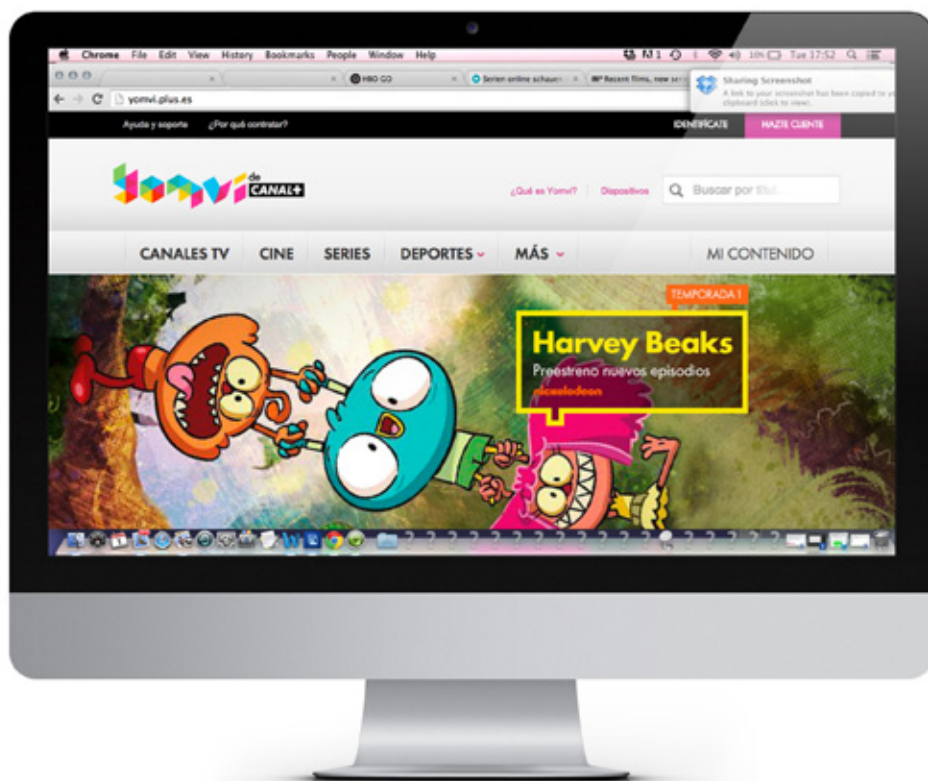
additional channels and services faster and more cheaply.”

According to Ian Trow, Senior Director Emerging Technology and Strategy at Harmonic, virtualisation will make converged broadcast and multiscreen headends possible. He lists some of the benefits of virtualisation: The flexibility to adapt to new standards, video formats and device types; The ability to expand services without a forklift upgrade to the headend; IT economics thanks to COTS (common off the shelf) blade servers; Reduced cooling, power consumption, maintenance and personnel requirements.

Dedicated hardware still has a place in headends, of course, and we are seeing the emergence of appliance devices (designed for 1RU and 2RU headend rack ►►



MediaLive is NAGRA'S multiscreen backoffice platform ▲



Yomvi demonstrates what is possible using OTT distribution ▲

OPERATORS WILL NEED SYSTEMS FLEXIBLE ENOUGH TO ACCOMMODATE BOTH VIRTUALISED AND APPLIANCE-BASED VIDEO PROCESSING

▶ slots) that use generic rather than optimised hardware inside. So Pay TV operators will need systems that are flexible enough to accommodate both virtualised and appliance-based video processing together – pooling these different resources and treating them like a whole in terms of how you manage and optimise the overall compute capacity.

Ericsson talks about the need for virtualising the video headend workflow so you can then make flexible use of dedicated hardware encoding and transcoding platforms (appliance-based) or software-based systems that are virtualised. The Ericsson Virtualized Encoding platform provides the umbrella under which jobs, like live encoding of a

channel, can then be mapped to the resource that is best suited to each particular task.

Trow points out that there will also be a mixed economy in terms of where resources are virtualised, with some operators preferring on-premise and some using off-premise as well. Christian Van Boven at NAGRA agrees. “You will need the flexibility to deploy across multiple private and public clouds.”

Trow notes that there is some headend and playout functionality that will take time to virtualise, like editing and colour correction. But he adds: “I expect all of the headend functions to be virtualised in around 5-10 years.”

INCREASED AGILITY TO COMPETE WITH NETFLIX AND AMAZON

Simon Trudelle (NAGRA) points to the importance of standards-based technologies and interoperability in this new operations environment. This is the basis for best-of-breed solutions that can take advantage of virtualisation and the cloud.

When it comes to the cloud-based SaaS model for the video back-office, he says there are two main types of customer. “There are those who need a short time-to-market, and we have proven our ability to bring a platform into operation in around five months. This is not a huge market but there are some players who do not have the time, resources or appetite to build a platform from the ground-up.

“The second kind of customer will be running a first-generation multiscreen platform and will have realised that while it was fine for 20,000 simultaneous users they now need capacity for 200,000 or 500,000. And that kind of growth could happen quickly in some markets.”

Van Boven highlights a third kind of customer. “Some Pay TV operators want to launch new services in new countries without being constrained by having to run data centres themselves. We can work with them on hosted solutions including public cloud-style deployments, which is how Netflix operates.”

It is worth noting that a SaaS deployment is not an irreversible decision. Trudelle says that in the case of NAGRA and its cloud-based ▶▶



PAY TV OTT

▶ MediaLive platform, the technologies are fundamentally the same as customers use on-premise. “If you want to move some of the SaaS functions in-house that is feasible and we can hand over more control to the customer. That is a commercial decision rather than a technical one.”

There are other types of virtualisation that are taking hold in Pay TV, including storage. We are going to see various approaches to network storage from full network DVR (including across the STB and multiscreen devices) to hybrid models where there is still some local caching – maybe 60 minutes worth of storage to ensure a good QoE in the event of network failures and to easily accommodate popular time-shift functions like live-pause and rewind.

When it comes to the STB, intelligence can be virtualised even if storage is not. Cisco talks about a ‘fat hardware, thin software’ model where you have a home gateway with full-sized hard disk drive and multiple tuners but where some of the intelligence, like dealing with recording conflicts, could be cloud-based. This works for operators with a



Christian Van Boven, NAGRA ▲

even if you deploy a thin-client. Local storage will still be necessary for some operators. Functions that can be fully migrated to the cloud include tuner management, catalogue management, channel maps, disk space management, planner management and record management.

Anthony Smith-Chaigneau (NAGRA) sees a major evolution of STB middleware software to be more adaptable and flexible while enabling seamless connectivity in the home. OpenTV 5 from NAGRA is such a ‘connectware’ client platform, designed to address multiple use cases, from ensuring the delivery of cloud-based functions such as startover TV or network DVR, where broadband connectivity is available, to providing

THE IMPACT OF UNIFIED RIGHTS MANAGEMENT IS OBVIOUS WHEN YOU IMPLEMENT ADVANCED MULTISCREEN FUNCTIONS LIKE CASTING

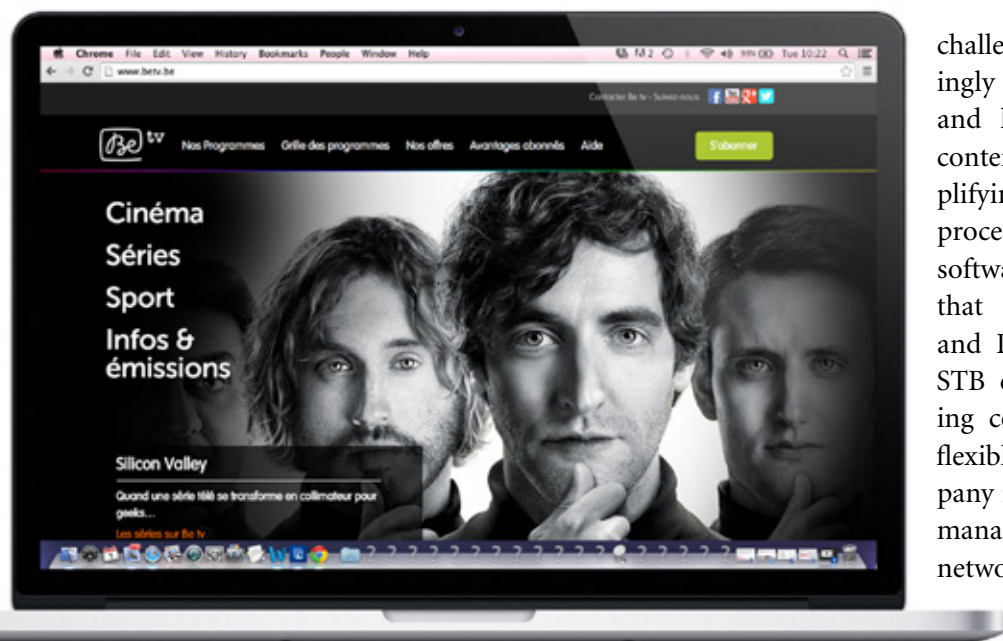
bi-directional link to the set-top box.

According to Ken Morse, CTO & VP, Service Provider Video at Cisco, graphics rendering and the media player still need to reside in the STB

embedded DVR functions in a more broadcast-centric environment. In both cases, OpenTV 5 delivers the same truly engaging user experience.

Trudelle points to one more challenge in a world that is increasingly multiscreen, multi-network and hybrid: the way you handle content protection. NAGRA is simplifying this part of the operations process, partly thanks to client-side software for hybrid set-top boxes that combines conditional access and DRM and which hardens the STB environment as well as securing content streams. This is more flexible and more robust, the company reckons. In the backend, rights management is unified for different networks and for broadcast and on-demand services.

Van Boven says the ▶▶



Be tv is available across Belgium as a standalone OTT offer ▲



Netflix is already available via Smart TVs and streaming boxes ▲

“WE NEED OPERATIONAL TRANSFORMATION AS AN INDUSTRY. WE NEED TO BE FASTER TO MARKET AND QUICKER TO REACT TO CUSTOMER DEMAND”

► impact of unified rights management is especially obvious when you implement advanced multiscreen functions like casting, where users transfer content from one device to another. “We can define rights for particular content and how that can be used on a per-device basis and whether content can be transferred between devices. We can define the output control rules, like whether content can be shared over wireless networks or just wired.”

Taken together, these new operations paradigms help to make Pay TV operators more agile and so compete with pure-play OTT providers like Netflix. They will help companies like Sky Deutschland achieve their stated goal of bringing something new to customers – big enough

to warrant press coverage – every 4-6 weeks.

Daniel Hesselbarth at Unity-media says: “We need operational transformation as an industry. We need to be faster to market and quicker to react to customer demand and to solve operations problems.”

According to Trudelle, “The modern Pay TV operator will compete with platforms like Amazon and Netflix, with Internet players who are agile and can add new features to their systems quickly. We have to help our customers be as agile as these people. If they fail to achieve that they will have a hard time keeping up.”

In the MTM report, called ‘Profiting from the OTT explosion: opportunities for Pay TV providers’, respondents listed some of the key

technology requirements for operator OTT success: An integrated user experience across devices; A best-in-class content protection system; Fully ‘cloudified’ backend technology; Services offered via a set-top box; The ability to cast programmes.

Earlier this year Ed Barton, Head of TV Research and Analysis at Ovum, summed up where he thinks the television market is today. “We are on the cusp of the next major evolutionary growth phase in visual entertainment.

“As the industry hunts for opportunities to address slowing traditional TV subscription revenues, the major trends in technology, in audience consumption and service evolution offer glimpses of a brighter future.” In his view: “TV’s best days lie ahead.” ■