

Euromedia: Can STBs really become the centre of the connected consumer's home, or do they risk losing out to games consoles and Smart TVs? How must they develop to maintain their importance?

Accedo: STBs can play a role in the future by creating a more integrated in-home experience than any OTT device can do.

Albis: There are many ways to manage a connected home, and STBs can play a relevant role as they provide an ideal platform. In addition to their current functionally based SoC capabilities, they will have to provide and manage connectivity in the home; in conjunction with a basic gateway device.

Amino: As technology is evolving, there is a

content and initial investment cost.

Easel TV: There is a strong argument that the STB is moving to the cloud and that the "operator as an app" model is going to be the preferred route in the medium to long term. Indeed there are factions within major operators and solution providers

With Digital Switchover complete in the major European territories, viewers are largely accessing their content via set-top boxes or connected, 'Smart' TVs. What role will such devices play, with some companies suggesting they will not serve unprofitable markets, TV sets reportedly remaining unconnected, and the cloud increasingly becoming both the storage and intelligence? *Euromedia* asked a range of industry experts for their views on the sector. Here are the initial findings of the Survey.

STB and Smart TV Survey 2013

much wider range of devices, network delivery options, media formats and security protocols. STBs play a critical role in enabling people to enjoy a wide range of content across multiple screens within the home.

Arris: The emergence of the Connected / Smart TV and games console as a video viewing device has opened up a world of new content to traditional TV watchers and those who don't want to be tied to a particular provider but who want basic access to new IP-based services.

Conax: STBs will in many cases become the centre of the living-room. Serving in-home multiscreen devices through a media-gateway STB has some clear advantages over doing OTT multiscreen. For the operator, media-gateway STBs can offer advantages related to content rights, bandwidth use, QoS for linear

"So long as TV technology keeps changing then STBs will have a place in the home." EKT

that say "we have deployed our last STB". In the short-term the STB can offer a more complete end-to-end experience that better integrates live broadcast though this differentiator will fade quite quickly.

EKT: For two reasons we see the STB as the main device to connect to content to the large screens in the home.

1- Quality of Service: For the operator to be certain of the user experience they offer the end user – they need to control the complete ecosystem from head-end, signal delivery, User Interface, features to the STB and the remote control.

2- Branding: The end user must be constantly engaging in a positive operators branding experience. By leaving in-house hardware to third parties, it will lose its direct to consumer link and as such be more prone to customers switching to competitors offering (either to a direct operator offering or OTT solution). Furthermore, so long as TV technology keeps changing then STBs will have a place in the home ...however as we move towards true hybrid solutions with content being delivered over several different mediums with different

CA / DRM then the idea of a Gateway box feeding many clients (be they STBs or TVs) becomes commercially appealing to the network operators, the manufacturers and the end user (who really doesn't want lots of boxes with different RCU etc..)

Entone: A traditional set-top box is a self-contained device for receiving, decrypting, converting and displaying pay-TV services at a single location. More recently, STB functions have expanded to include search, navigation, recording and interactive services. In some senses, STBs are disappearing but in another sense, they're really just adapting and evolving.

Farncombe: Yes, STBs can evolve to remain the centre, by becoming a connected hub and gateway to allow distribution of content in the home. Tablets, phones, games consoles would get their content from this home hub.

httv: STBs bring two main values. The first one is that it gives the possibility to pay-TV operators to have full control of their platform and through it of their subscribers. The second one is that it cost much less than Smart TV or even Games Consoles, allowing





Irdeto: The debate around Smart TVs and STBs has been around for a while, and next generation games consoles add a new dimension to it. We expect that Smart TVs will replace set-top boxes as the centre of the connected consumer's household in some segments of the market (particularly free-to-air viewers). However, we expect we will still see set-top boxes for the coming few years.

KIT digital: Set-top boxes must evolve into media gateways so that they provide additional network based services to the connected home. They must be able to power multiple TVs in the home rather than being connected to the main TV in the house.

MoCA: STBs can become the centre of the connected home, linking smart TVs, consoles and any other devices that need and want network access. These devices will serve as a hub throughout the home and will need to continue to embrace standards and provision for quality of service, among many other things.

Pace: Let's look at the question a different way – what do we need to do to bring TV, Internet access, voice, and other services into consumer's homes, ensuring every service is accessible in every room? The solution, in broad terms, is one that combines a number of key components – access networks, conditional

access and digital rights management, in-home network and distribution, video decode and play-out to screen, lastly - high quality of service across all connected devices.

Roku: Games consoles provide a streaming option for those who have them and want to stream in addition to playing games. People don't purchase game consoles for the sole purpose of streaming. Instead they buy streaming players and Smart TVs. We will continue to see streaming hours grow on streaming players and Smart TVs and eventually exceed game consoles.

Rovi: The average computing capacity of game consoles and Smart TVs far exceeds that of the average set top box (STB). There are two key advantages that STBs have though: (1) conditional access which is tied to the pay-TV operators' transmission rights, and (2) DVR capability. STBs have a key mid-term advantage in providing highest Broadcast HD quality to the discerning viewer, a comprehensive Video On Demand catalogue, and a multi-room DVR experience that is unmatched.

S3 Group: The media delivery architecture within the home will continue to evolve towards a gateway-client architecture with the gateway taking the central role in delivering media securely into the home. The client devices served by these gateways will continue to expand in diversity and capability and will certainly include both games consoles and smart TVs but also dedicated function thin client IP-STBs.

SoftAtHome: Smart TVs and games consoles have some of the assets needed to replace the traditional STB. However, the STB will remain a key device for Operators because of its all-round capabilities (e.g., rights management, billing, service breadth). Operators must, though, continue investing in the STB to stay ahead and deliver a unique and superior user experience, as well as to bring new services to end-users (super PVT, VoD/catch-up, appstore, VoIP, smart home).

smartclip: When focusing on STBs provided by telcos and cable providers, we can state that STBs and Smart TVs are almost becoming mirror images of one another, as the latter begins to permeate the market with greater significance. Telcos and cable providers are

much shorter life cycles, to bring new features to the homes. In that sense they will stay one of the main devices of the home and keep competing with Smart TVs and Games Consoles to be the centre of the connected consumer's home.

Humax: We believe that the STB's role as the centre of the consumer's home is likely to once again enter the spotlight in the future. Games consoles are targeted at specific households with avid games fans and, as a result, are not typically perceived as a product for every home. Of course, the Smart TV will eventually become the norm as most TVs will carry a Smart TV service in the future.

Inview: The STB is, and will remain, a key route to the connected consumer. The STB is usually the most cost effective option, certainly in non-gaming households. A key advantage of the STB is that it is established as a trusted route to the TV experience. The STB is TV centric – it is completely focused on the TV experience. Another advantage for the STB is its flexibility. It can be easily updated, changed or replaced. A Smart TV on the other hand can be an inflexible option for the consumer.



starting to invest in the area of Connected TV, and more and more STBs are equipped with 'Smart' features such as app stores and VoD stores. There is not a fear that STBs are at risk, but as Smart TV is adopted by consumers they will need to offer more sophisticated features and a hyper-connected experience in order to maintain a place in the modern home.

Technicolor: STBs have always been, and will remain for the foreseeable future a technology gap-filler. STBs bring support for new codecs (such as HEVC 2K / 4K in the short term), for new modulations schemes, for higher computing and graphics capabilities, etc. For this reason, STBs will always be needed. STBs are also the custom sales tool for premium content distributors/resellers.

Visual Unity: The STB will be only one of many connected devices in the home, enabling OTT content to subscribers. The lack of standardisation in STB development has prevented this device from being a dominant consumer appliance in the entertainment

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Irdeto

ecosystem. As STBs are often proprietary to specific service providers, this results in a closed and proprietary system.

Euromedia: What role will STBs and Smart TVs play in a cloud-based future?

Accedo: In a pure cloud-based future, all content will be delivered over the Internet (OTT). In such a scenario, the STB is just another OTT client device, and it needs to fight with Smart TVs, game consoles and mobile devices for consumer spend and attention. STBs will always have a place in the market since other more expensive devices like Smart TVs will have a longer life time and STBs will bring attractive functionality to older TVs.

Albis: They will continue to play a role as is already being defined today. Business models will drive which devices are used. Service providers may find it easier to create differentiating services on a dedicated STB rather than on retail TV sets.



provide this feature natively, as will smart phones and tablets. Legacy TVs will need some type of adapter to provide this function. Some call these devices media renderers or media adapters, but they're essentially an evolved STB.

Farncombe: In a cloud based OTT delivery, STBs can evolve in two ways: they can act as the primary content reception device (the

cloud app runs on this device) or they can become a hub from which you distribute content within the home.

httv: Pay-TV operators may not favour OTT Cloud based approach for their STBs but they may be forced to support it to be competitive against Smart TV.

Humax: Within the STB arena, Humax has already invested heavily in new developments that enable the use of cloud services to support consumer demands for additional functionality in the future. Currently the shift is toward a local cloud service within the home, but this will soon move to content shared anywhere.

Inview: The cloud is the future for all content. We are seeing the shift from physical to digital content across all the entertainment sectors.

Irdeto: Hybrid or IP STBs have been widely deployed in the past few years, enabling operators to use the IP connectivity to offer more content – both on-demand and linear – as well as other services delivered via IP and the cloud to complement or replace content delivered via broadcast networks. Smart TVs, on the other hand, enable broadcasters and pay TV providers to directly compete for viewership via IP and the cloud and create a branded experience to differentiate. In a cloud-based future, virtually any connected device can be used to find and view content, including hybrid or IP STBs and Smart TVs.

KIT digital: IP or OTT delivery of content can be considered as another delivery mechanism in the same way as DVB-S, DVB-T or DVB-C. The end user is not really interested in how content is delivered to their home, as long as the quality of experience is high and the cost of the service is acceptable. Delivery of live and VoD streams to Smart TVs is achievable only if the broadband Internet options available can provide sufficient bandwidth. Smart TVs have the potential to be disruptive and fragment the market by providing additional multiple ways to access content.

Pace: The cloud still needs to be brought into

Amino: A partnership between Cloud-based content provider and STBs can provide an efficient way to deliver a quality video experience to a wide range of devices in the home, whilst operating within the real-world constraints of network infrastructure available.

Arris: The reality is, as service providers look to place more and more content in the hands of the consumer, the more demand this puts on the network and home device to deliver the kind of 'excellent' viewing experiences that paying subscribers expect. The cloud has become a key component of our service provider strategy going forward.

Conax: STBs can be expected to live side-by-side with Smart TVs for quite some time yet. The quality-of-experience offered by powerful and flexible STBs is not yet matched by Smart TVs. With the rapid service innovation we are seeing, older Smart TVs will have a hard time keeping up with the latest features and services.

Easel TV: The STB's role will decline as things move to the cloud. A key differentiator for the STB is the PVR and the integration of this with live broadcast and on-demand. If operators can deliver PVR functionality from the cloud, then this differentiator is negated and the economic and consumer experience benefits (through TV Everywhere) of devices like Smart TVs and the global CE manufacturers' platforms secure the transition away from the STB.

EKT: The question is more, what the cloud-based future will bring to the user experience in the home. We see that most operators are now implementing cloud based PVR solutions and cloud based Catch Up TV solutions integrated in the everyday EPG. For reasons of CapEx, Consumer expectation, Ease of use and monetisation opportunities, the cloud will certainly replace most if not all local storage at the home.

Entone: In a cloud-based future, there will be endpoint devices that are capable of receiving compressed video over IP, decrypting the video signal and displaying the video on a TV or integrated display. Some smart TVs will

the home! As mentioned above, STBs converge network access and video playout in a single managed service; Smart TVs need to connect to the Internet gateway of the home before TV can be delivered – it is merely a connected play-out device akin to a PC or tablet. As operators look to monetise and control the quality of their service – a single managed solution gives them a strategic point of service delivery and ownership within the home.

Rovi: STBs supporting OTT cloud services will be increasingly important, and Smart TVs will increasingly find supporting the pay-TV ecosystem to be important. This is likely to converge in a scenario that benefits the end user: TV anywhere, anytime, on any device, governed by a singular discovery experience hosted in the cloud.

S3 Group: The scalability and flexibility of the cloud ensures that an increasing number of the functions required of the end-to-end TV platform will migrate over time from the home devices into the cloud. Client devices such as STBs will continue to incorporate buffering capability to smooth out network delivery problems. There will always be a role for well-designed end-consumer devices that focus on industrial design and performance to ensure that customers have fantastic experiences in accessing and consuming their TV content.

Smartclip: Both will have an important role to play as these devices will have to be connected to the Internet - and the cloud - to offer fully their services. Furthermore, mobile devices will become more and more important as these will also offer a convenient connection to cloud-content which can then be streamed to the TV screen.

SoftAtHome: Pure cloud-based solutions are attractive but not fully relevant. Cloud players have fully understood this by investing in consumer devices themselves for several reasons. First, quality of experience is fundamental and this can only be achieved by executing services locally, even if they can be powered by the cloud. Second, the user interface has to be optimised on the rendering engine, so the idea that cloud can be fully independent from the device is an illusion. Third, local buffer storage adds strong value to the



customer experience by reducing latencies and smoothing interactions. The STB will be critical for meeting these objectives and functions will be split between the cloud and local areas to ensure the best experience.

Technicolor: IP-enabled STBs and Smart TVs will be more and more used to access de-linearised content, including catch-up TV. In future, User Experience will be an easily upgradeable, cloud-hosted application, facilitating updates of MSOs branding strategies. As a consequence, the need for local storage in STBs is going to go down, but will remain important for satellite operators who cannot fully leverage IP connectivity in consumer homes.

Visual Unity: The future of the STB and Smart TV has the potential to follow the mobile market. In other words, the hardware itself (the STB appliance, or Smart TV in this case) will have limited capabilities without connectivity. Without content, the STB will be rendered useless for a majority of subscribers. With computer-like functionality STB and STV will have the ability to support stored multimedia (games, music, and videos). And all of that content could theoretically be installed using a USB stick or external DVD drive. But subscribers have since moved on, and have now evolved to expecting a 100% connected device

Euromedia: What impact will companion devices have on STBs and Smart TVs?

Accedo: Companion devices lend themselves to providing a different level of second screen

interaction, however the TV will remain the best device for actually viewing content. Companion applications can complement first screen viewing by offering discoverability and searchability. Indeed, the real opportunity in this market is to offer a consumer experience, where consumers can use the tablet for an attractive interaction experience and the TV for community watching on a truly compelling video experience.

Albis: Companion devices continue to bring new functionality and convenience to the user, and will require integration with STBs and TVs.

Amino: In the short term, companion devices will continue to grow with two key objectives:

Playback of web-based video content; Supplementary, interactive services supporting the primary viewing experience on TV. Longer term, as technology, rights and consumer behavioural barriers are broken down, consumers will enjoy an increasingly 'liquid experience' with the same content, apps etc., accessible across companion devices, STBs and Smart TVs.

Arris: Companion devices are beginning to augment the TV viewing experience. Many consumers are watching TV and multi-tasking using their smart phones, PCs and tablets. The interaction between these devices and the sharing between 'screens' is a critical aspect of any multi-screen solution. Basic processing capability and functionality has to change in a multi screen environment, now that there's more than one device to deliver to.

Conax: Companion devices will in many cases replace the traditional remote control in the living room. Applications running on smart phones and tablets can enrich the experience by offering additional information to the on-going programme, like biographies of a team's players, or display targeted ads.

Easel TV: The need to deliver content to these devices – with their limited storage capacity and always on-line capability – is accelerating the move to the cloud. The use of

second screen devices as part of the content discovery and interaction model will help to ensure a focus on delivery of content to the TV rather than a host of peripheral services (for example,



self-care and transactions requiring detailed data capture) which are not a natural user experience on a TV.

EKT: Companion devices will play several roles:

1- Content selection: Through online and social feedback, the user will select certain content it wants to watch.

2- Content interaction: During live shows, the user can express its opinion and be part of the show. This works well with game shows and political debates.

3- Content viewing: Either through a transcode from the STB or as a direct link, the user can watch the content around the home or on the road on the mobile/tablet/pc

Entone: Smart phones, tablets and laptops are well suited to content discovery and navigation as well as interactivity. Already apps are available to enable control of STBs and TVs using such devices which are naturally complementary and mutually enhancing.

Farncombe: On the one hand, connectivity between a STB and a second screen can enhance your viewing experience, e.g., using the second device as a remote control or using Zeebox. But in some places it will be displacing the STB as the companion device is usually mobile, handheld screen and the STB is tied to a single room.

httv: Companion Devices must interact seamlessly with STBs and Smart TVs with the following use cases: 1. Take advantage of the better UI to select the content to be played on TV; 2. Act as a mobile Second Screen to play content from the STB or Smart TV screen; 3. Act as a remote control of the STB or Smart TV screen with the possibility to control multiple AV devices through the same apps.

Humax: Companion devices will in most cases add to the viewer experience and be used alongside the STB or smart TV to give access to additional content or programme related services. Many companion devices can enhance the experience and be used to offer better programme search options without interfering with the main screen viewing.

Inview: Companion devices will enhance the viewing experience. Simple actions such as being able to browse the EPG and search for content without interrupting the main TV experience are incredibly powerful. We expect to see companion devices becoming an integral part of the way we watch TV in the future.

Irdeto: Companion devices will provide an engaging tool for discovering and previewing content, as well as enhancing the TV viewing experience on the main screen with complementary services, such as sports stats during a live game, behind-the-scene clips during a movie premier or voting during a live

talent show.

KIT digital: Imagine ordering your next pay-TV service. You open the box and find a dongle with an HDMI connection and WiFi connectivity that connects to your TV, and a tablet. The tablet replaces the remote control as a content search and discovery tool. Apps for programmes that you previously downloaded separately from app stores are automatically loaded into your pay-TV application on the tablet with content synchronised to the TV channel you are watching.

MoCA: Companion devices will continue to proliferate. STBs, smart TVs and eventually gateways, will evolve and to manage the bandwidth and quality of experience requirements of the end consumers.

Pace: Recent studies and analysis suggests that second screen viewing is not cannibalising the prime screen significantly – in fact – overall viewing time is increasing with the majority of OTT being viewed on the second screen. With the continued rapid growth of tablet and smartphones some analysts are predicting a doubling in second screen revenue over the next four years. Such high growth and adoption coupled with the more personal nature of second screen viewing may lead to a change in consumer behaviour driving an increase in OTT consumption.

Roku: We see companion devices such as smart phones and tablets as complementary to STBs and Smart TVs. People want to watch TV on the TV.

Rovi: Depending on the demographic and household make up, companion devices will fulfil the roles of (1) primary viewing platform (2) meta-surfing platform (3) control platform, or a combination of the three.

S3 Group: Companion devices will encourage increased consumption of, and participation in, live broadcasting through creation of shared social viewing environments.

smartclip: There is the possibility that companion devices might evolve into a threat to STBs and Smart TVs in the future. For example, standards such as Miracast and Apple AirStream are increasingly integrated in mobile devices. As long as the device supports the standard, this enables the seamless



streaming of content from mobile devices to a TV screen. With companion apps offering sophisticated links between online devices and the appetite for the second screen growing continuously, STBs and Smart TVs will need to bring more to the digital experience in order to compete with mobile and tablet devices, which have seen such huge take up amongst consumers for content viewing.

SoftAtHome: Companion devices are becoming more and more numerous in today's digital home. They can be used in different configurations: screen-sharing, device-shifting, complementary information/control, or synchronisation. For all these use cases, companion devices are now fully part of the digital home and STB software must adapt to ensure full continuity of service between devices. They will complement the existing experience rather than replace the TV or traditional viewing devices.

Technicolor: We believe that companion devices are actually increasing the breadth and quality of the user experience as these devices can help locate and select content of interest (e.g. an EPG app on a tablet or smart phone) and facilitate the content consumption anywhere. We do not see these companion devices as threats to the STB or Smart TV business.

Visual Unity: Gesture control is an interesting development and may have a positive impact on how subscribers navigate through their entertainment experience. This technology is still in its early stages of



consumer acceptance, with challenges around ease-of-use, accuracy and latency issues. As these products improve, then gesture controls may have a positive role as an alternative to the traditional remote control.

Euromedia: What are the prospects for a retail market as a gateway for multiple services/devices, or will this remain an operator supply?

Accedo: Retail is very important for discovery of new devices and services, and we see an increased shift to physical retail being more “showrooms” and actual transactions and fulfilment are taking place elsewhere. This makes much in the world of video distribution where the experience is everything, but the delivery involves sign-up, registration and delivery via broadcast or IP.

Amino: There are significant opportunities for an aggregator of products and services. Operators are ideally suited to this role due to their ownership of network infrastructure and billing relationships. However, this does not rule out other types of companies establishing themselves as an aggregator, providing they have the right partnerships in place and can offer a wide enough range of products and services to meet the customer’s needs.

Arris: Retail plays a role in the distribution of boxes to the consumer. However, for the foreseeable future, set top boxes and gateways are generally customised to work in a particular service provider area. There are many reasons for this including content security/DRM, different middleware,

authentication, etc. That said, operators do use their own retail outlets as well as major chains as a sales point for their services.

Conax: A retail market requires an interoperable and standardised STB / gateway platform for apps/middleware, security, etc – or standardized mechanisms that enable STBs to be customised for an operator in the field. This is a long way off, especially for advanced STBs such as gateways. But standards such as HbbTV, DLNA and CI + could become key enablers for such a retail market.

Easel TV: In the long run, we may end up with a more open retail market however this is not an immediate prospect. Even with the move to the cloud, operators must choose which CE manufacturers’ platforms to work with in order to keep integration costs under control. Over time, as standards for platforms become more firmly established then the more open market becomes feasible.

EKT: A retail model whereby the STB solutions are certified by the operator also gives eco system security whilst putting the owners on the consumer / retail to fund the boxes. However if the operators wants to have 100% control over its consumer programs – it would want to own the complete chain including the selection, testing and distribution of the STB.

Entone: Consumers have historically resisted purchasing devices that are wed to a specific service provider. On the other hand, sales of DVDs, Blu-Ray players and TVs in general have done well because the open standard makes them compatible with multiple content sources. This being the case, it’s likely the



gateway will be provided by the service operator, while consumers will replace STBs leased from the operator with apps on consumer owned devices like tablets, smart TVs and game tablets.

htt: SAT>IP is a good existing example for such retail devices. It does not require to be managed by the operator. It could be extended to a more generic DVB>IP solution.

Humax: There will definitely be an opportunity for a retail market as a gateway to multiple services/devices. Already some major Operators within Europe are offering their services on consumer devices as well as those supplied directly. This will continue to grow as it offers the Operator the opportunity to access customers outside of their normal domain, and of course save money on the purchase of consumer devices.

Inview: The retail market is already thriving with multiple devices and options available. The key is always content though. Access to great content determines who will be the most successful in this game. Operators have the rights to the most exclusive content. But as more OTT services launch which are not affiliated to a particular operator, the retail market will provide an alternative to the subscriber model.

Irdeto: Some of our customers are already very successful in retail markets, including Ziggo in the Netherlands and operators in the Middle East where consumers purchase set-top boxes, CI+ CAMs and smart cards in stores. While many markets will remain operator-controlled for some time to come, the fact that consumers increasingly demand to watch content on tablets, smartphones and PCs will drive the support for TV services on unmanaged devices.

KIT digital: This is a question that will probably be answered by the market, and may indeed vary from country to country. Existing examples such as the Roku STB (and the Apple TV device) exist as a retail product providing a gateway to multiple services. While pay-TV operators maintain a vice-like grip over premium content they are likely to dominate the supply of gateways tied into their own delivery networks.

MoCA: Operators will have to take a more active role in home network to ensure quality

of experience and as a differentiator for their own services. The retail channel will also continue to parallel service providers as the former will drive the latter, and the latter will respond to the former.

Pace: With operators offering competitive subsidised packages there is no compelling reason for users to purchase gateways in retail (also add the fact that unlike mobile phones

gateways are NOT fashionable or desirable consumer items). The only rationale for operators to move to a retail model would be to lower their subscriber acquisition costs.

However, they would see an increase in customer care costs, interoperability testing costs, issues over security (Internet), overall a likely reduction in the service quality and increased customer churn.

Roku: It's costly for an operator to role out a truck to a consumer's house to set-up a box compared to having a consumer go to a retail store to buy a Roku player and easily set it up themselves. Through Roku players, consumers can access hundreds of channels including authenticated options such as HBO

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GO, FOX Now, Now TV and TWC TV. We expect to see more authenticated channels on Roku in the coming year.

Rovi: We expect limited retail prospects as the value of a gateway seems to tilt in favour of the operator, per the contemporary definition of what a gateway is.

S3 Group: Retail will become an increasingly important part of the strategy for operators to get consumption devices into the hands of their customers. STBs remain one of the biggest pieces of capital investment required of operators and they bring with them a host of after-sales support costs.

SoftAtHome: Telecom operators succeeded in providing triple play (now moving to quintuple play) by simplifying the way customers can access new offers. Operators in general have a relationship with customers that enables them to become the gateway provider at home. Building this relationship is a real entrance barrier for retail players.

Visual Unity: If standardisation is the name of the game, then the STB suppliers and content operators need to learn from the past, and modernise their supply chain. Operators should consider relegating the STB to the retail market. Operators can then focus on



their core strengths, and form standards bodies that will open the home entertainment ecosystem to the same level of flexibility, and expandability as the computer industry.

Euromedia: In terms of customers, which are your strongest regions in terms of sales and for which products? Can you identify major customers for these products?

Accedo: We work globally with three categories of customers - operators, media and consumer electronics. Europe is still our largest market where we have TV app store customers like Deutsche Telekom and Orange and media customers like Maxdome, Channel 4 and Viaplay. Our second largest market is North America, where our media practice is working with leading companies like Fox, HBO and Netflix. The fastest growing region at the moment is Latin America, where Accedo is working with customers like MovieCity, Terra and Telefonica.

Albis: Our strongest regions are within Europe, where in Eastern Europe our IPTV STBs play a key role. There is a trend towards Internet-based and OTT technologies and products.

Amino: Amino continues to develop its position in a number of key markets – in particular North America, Western and Eastern Europe and increasingly Latin America.

Arris: We have a leadership position globally and provide STB solutions to cable and telco customers across the Americas, EMEA and Asia Pacific.

Conax: Conax is a global company with more than 350 customers in 85 countries. Originating from Norway and Scandinavia, Europe is still our strongest market. But we also hold strong positions in other markets, for example in India. Our customers range from fairly small pay TV operators to some of the world's largest with several million subscribers.

Easel TV: We work for pay TV operators (such as Virgin Media), broadcasters (such as Channel 4), content producers (such as ALL3MEDIA) and major consumer-facing brands (such as Spotify and HTC) mostly in Europe and North America.

EKT: Through its ODM partners, EKT has a strong footprint in Western Europe; regions such as Russia/CIS, South America, the Middle East and Asia are handled directly.

Major direct customers are Telefónica O2, Orange, MTS/Comstar, Volia, ICC
Entone: Our major markets are Europe and the Americas.

Announced customers include Sunrise

(Switzerland's largest private telecommunications operator), Volia (Ukraine's largest cable operator), Consolidated Communications (USA), Cable & Wireless Communications and TSTT.

httv: Our htvLink HbbTV middleware was first targeted to the retail Western European market (especially Germany Sat and French DTT) but with the international momentum around HbbTV we now have strong interest in Middle East, Asia, Australia and even Latin America.

Humax: We have a strong global presence and are represented in most markets, with a particularly strong presence in the US and Europe. The leading products are mainly HD PVRs and are now fast becoming Hybrid IP/Broadcast propositions.

Irdeto: Some of our major customers include Comcast, Cablevision, Foxtel, ITV, Viasat, Astro, Mediaset and Ziggo and Adobe.

KIT digital: We have a global footprint – with customers in both developed and developing countries throughout the Americas, Europe, the Middle East and Asia-Pacific.

Pace: In 2012, shipping nearly 30m products Pace was the world's #1 supplier of STBs (based on volume) and #1 supplier of gateways (based on value). Pace has shipped product to over 160 Pay-TV customers globally and we have good relationships with most of the leading pay-TV operators in respective regions.

Roku: Our players are available in the US, Canada, U.K. and Republic of Ireland. Our main focus is the US, where we have sold more than five million players. Our most popular players tend to be the \$49 Roku LT and our high-end players such as the new Roku 3.

Rovi: North and Latin America.

S3 Group: Our strongest markets are Europe, North America, Brazil and South East Asia. Our customers include BSkyB, Cisco, Comcast, Ericsson, Liberty Global International, Pace, Rogers and Teleplan.

SoftAtHome: LatAm and Asia look like being the fastest growing markets in the coming years. Nevertheless, HEVC could cause disruption that rekindles growth in North America and Europe.