Smart TV Survey 2012

Smart TV, or Connected TV is predicted to become a mainstay of TV distribution and consumption, but is still struggling in some territories with low connection figures, despite growing set sales. *IP Television* asked a number of industry players what the challenges of Smart TV are, and how they see the market developing. Here's the first part of our in-depth Survey.

***IP Television*: What products/services do you provide in the Smart TV sector?**

Accedo: We are an enabler of Smart TV and IPTV applications. We develop a wide range of applications for a full TV Everywhere experience in the living room. We also provide broadcasters, operators, and CE manufacturers with an Application Management Solution named Accedo Application Sphere (AAS). AAS provides a powerful, cloud-based, scalable and open application management platform to enable content and service providers to stay competitive. Other products and services include Accedo Connect, SmartApp and Funspot.

ActiveVideo: We have created CloudTV, a Virtual STB Platform that is based in the cloud and allows rapid development and low-bandwidth, low-latency streaming of advanced Guides and TV Content to any device, new or old, including digital STBs, CI Plus televisions, Smart TVs or other connected devices. CloudTV offers service providers dramatic savings in Capex/OpEx, as well as significantly improved time to market for content and TV apps, including: Advanced Advertising; Games; Multi-Screen Content Delivery; Navigation; Web-Based Programming Channels.

Conax: We provide an Integrated CI+ module providing the highest possible chipset pairing security.

httv: Our httv Box software is Linux based. It supports different formats (DVB/IP, C, HTML and HbbTV). It also provides a solution to interface Companion Devices such as Smartphones and Tablets to the Smart TVs.

Inview: We have developed the only Smart TV platform which works on low cost STBs and TVs, bringing smart TV to the mass market.

Irdeto: We provide a full range of products and services for pay-TV and OTT service operators, from design and build right through to the management of TV technology platforms. We offer solutions spanning all parts of the workflow, from content ingest, management, security, billing, publication and apps for any consumer device. For customers who prefer to focus on their own core strengths, we will host and manage the platform, if required.

PacketVideo: Our Twonky suite of apps connects consumer devices with any Internet-connected TV. The Twonky Beam app lets users discover media content on their smartphone or tablet and stream direct to their TV screen with the touch of the 'beam' button'. The app creates a beamable browser interface, letting you discover content across the web, but frees the content from the web page through the beam function which lets you consume that content on your TV. PacketVideo also works with a number of manufacturers and content providers to integrate Twonky server technology into their products and to deliver online content to Twonky Beam app users.

Rovi: Rovi Discovery Solutions include media guides, entertainment metadata, Rovi Cloud Services; Rovi Delivery and Display Solutions include commerce and fulfilment (Rovi Entertainment Store), Disc to Digital, media management, and video streaming and playback; Rovi Advertising Solutions include Advertising Service.

Shazam: Shazam is one of the iPhone's Top 10 apps of all time and has built its reputation on answering that age-old question, "What's that song?" Now, we've expanded to include television, so that people can interact and engage with the shows and commercials that interest them. During the last 18 months, Shazam has worked with more than a hundred of the world's leading brands to incorporate Shazam for TV into their campaigns, making their ads interactive, turning a 30-second spot into three minutes of engagement.

Technicolor: We provide a range of media services to content creators and distributors for content workflow and asset management to effectively handle source content, pre-qualification of files, rights management and delivery of high volume throughput to multiple platforms and formats in a cost-effective

manner. Following Thomson's decision to discontinue the business of 'brown goods' during the last decade, Technicolor does not market Smart TV sets – however, Technicolor is a leading vendor of Access Gateways and Digital Set-Top Boxes to the operators and service providers worldwide.

Viaccess-Orca: We provide end-to-end solutions to deliver TV Everywhere on multiple delivery networks (Cable, Satellite, IPTV, OTT etc.). Our core products are embedded in end-to-end solutions and include protection of content on all devices, a service delivery platform to manage and scale the TV services and advanced engagement tools such as a full Content Discovery Platform.

IP Television: How do you overcome the fragmentation of the marketplace, with so many different devices, formats, and platforms and no real standards in place to ensure compatibility across the industry?

Accedo: The technical fragmentation in the market is one of the biggest issues for the interactive TV industry. Numerous middleware solutions are available, and a complex world has become even more complex in the past three-to four years with the advent of IPTV and new connected over the top devices which can execute applications downloaded over the Internet. To develop an application for all consumers in a market, the application might be necessary to adjust five-to-10 times, which will mean both additional development costs as well as additional maintenance costs. The problem will become lower in the future with additional deployments of modern TV devices, but when the complexity of the applications grows, the challenge will remain.

ActiveVideo: This is our core value proposition: overcoming fragmentation. Because CloudTV is based in the cloud, it takes the device out of the equation. CloudTV users existing standards – HTML5, MPEG-2 and H.264– to enable content to be created once and streamed as a rich user experience to any device, regardless of the processing power, memory, chipset, or middleware within the device. Service providers, content providers and CE manufacturers can deliver advanced Guides, Apps and other content experiences quickly and affordably – and with very low bandwidth requirements and low latency — providing users with the latest and greatest television.

Conax: The main TV vendors support the CI+ standard. This standard incorporates MHEG5 based user interface. Conax Integrated CI+ module is compatible with this standard.

httv: HbbTV is a recognised standard for Smart TV devices.

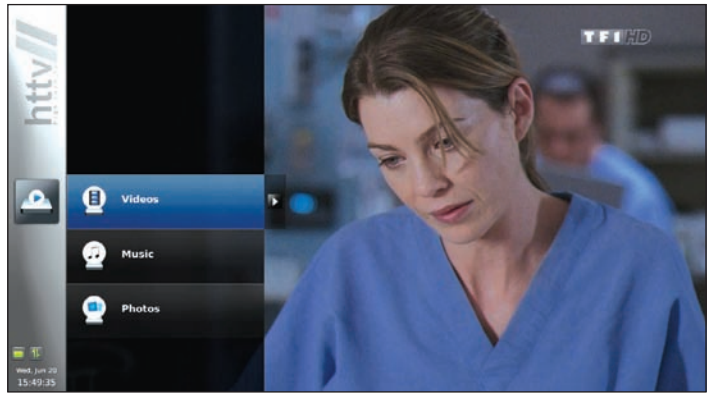
Inview: Our software sits directly on the silicon chip. We are integrated with the three leading chip vendors for the value market – Novatek, Ali and Mstar. This means that we are device agnostic and can offer our Smart TV platform to any retailer or distributor who orders products using these chipsets.

Irdeto: We embrace the fragmentation of the marketplace. It is device proliferation, which is driving so much change in our industry and providing so many exciting new business opportunities to pay TV and OTT service operators. Irdeto's real strength is in managing the complexity of so many devices, security considerations, formats and so on.

Packet Video: Collaboration is key in such a fragmented marketplace; there is currently no one device or format that brings everything together and it's what consumers are crying out for. As an industry we need to work together to discourage this closed approach to manufacturing and open up the entertainment architecture so that content can become more device agnostic. We are one of just a few companies supporting this idea of an open architecture network, allowing users to consume content across the web on their preferred device rather than ours.

Rovi: We support as many as possible. The fact is if a customer wants us to support a format, and is willing to pay for it, we'll usually support it.

Shazam: There are two types of fragmentation occurring. First are the infrastructure players, ranging from the cable and satellite TV operators with different set-top box manufacturers coming up with various interactive features and offerings, plus the TV manufacturers launching connected TV with apps running on them, and a few new entrants like Apple and Google with brand new interactive TV offerings. None of these have significant traction yet and there are certainly no standards emerging. The second form of fragmentation is just a myriad of TV- oriented apps, from enhanced programme guides, to incentivised and non-incentivised check-in apps, to TV companion apps, to network apps that stream previous episodes, and apps specific to a TV show or TV event. Other than the apps from broadcast networks that stream previous episodes for free, none of these are gaining significant traction. And, with the



exception of Shazam, none of these apps have a massive active user base. Between the two types of solutions – remote control-based interactive TV versus mobile apps, the winners so far are mobile apps, because mobile is already at scale, most TV viewers are already multitasking with their mobile device while watching TV, it's a personal device that doesn't disrupt the viewing experience of other family members or friends in the room, and mobile devices are inherently portable, so you can take the TV apps with great content and experiences with you wherever you go.

smartclip: We use technologies and solutions that ensure the most flexibility for our advertisers and publishers. smartclip is integrated with all the major video monetisation platforms, and our tech team has integrated with hundreds of customised systems. As a result, we are player and technology agnostic and can work with any customised setup and fully support the IAB standards VAST and VPAID across all devices including Connected TV.

Technicolor: Fragmentation is a collateral effect of rapid innovation in highly competitive computer, media and entertainment markets. Technicolor provides to these actors a number of services and tools that can help minimize the effects of fragmentation. For example, content producers can easily have their assets delivered to different devices with the right format thanks to a media service solution like MediAffinity by Technicolor. But beyond delivering the right format to a particular device, operators need also to make sure the content is easily found by the end users, and easily distributed within the connected home (e.g. multiscreen) and even when out of home. Operators need managed solutions to offer the best quality of service, using simple pieces of software to make devices more than connected: interconnected. Technicolor has developed a new machine-to-machine "language" that makes connected devices work together. This open and distributed framework eases the deployment of applications across multiple devices within the home. It has been designed to allow Services Providers to build their Connected Home applications' ecosystem, fully reuse the different software modules and facilitate their distribution onto new devices and environments. By reducing the operational complexity of running applications in multiple environments, it helps the NSP keep its operational costs under control while expanding its services packages over time.

Viaccess-Orca (VO): We have a professional services team responsible for managing the delivery and maintenance of the company core products and solutions. Using VO's open and flexible Service Delivery Platform with an additional strong team validation allows us to maintain an agile approach to this problem. However, fragmentation of the market is an issue and will continue to exist.

IP Television: How should content producers and OTT operators manage a complex device and apps environment?

Accedo: The challenge for content producers and OTT operators is ensuring the same app works on all the different available platforms and devise and keeps the user experience. With so many different devices, this often means the need to develop multiple versions of each app, which all need to be maintained. At Accedo, we work with a number of media companies, content producers and OTT operators and we can manage this complex environment for them.

Accedo: By streaming their services from the cloud, Content and OTT providers can overcome the chaos associated with the millions of makes and models of devices in the field and on the drawing board, and create consistent viewing experiences across multiple screens and platforms. This reduces costs and time to develop, and allows advertisers to deliver high-calibre, unified brand experiences to as many screens as possible.

Conax: Some TV set vendors develop their own standards for apps and app stores. Here

TV makers fail to cash in on Smart TV adoption

Despite accelerating global demand for Smart TVs, a new report from TDG forecasts that TV manufacturers will be largely unsuccessful in generating new revenue from these net-connected platforms. The report - *Smart TVs 2012-2017: Connections, Use, and Portal Revenue* - examines global diffusion of smart TVs though 2017, and explores the associated revenue models on which smart TV vendors are depending.

"Smart TVs appear to be the product category best positioned for connected in-home video entertainment," notes Colin Dixon, senior partner and author of the study. "Who needs an Internet set-top box like Roku or Apple TV if the functionality is integrated directly into your TV?" he asks.

But TDG suggest that appearances can be deceiving. Although Smart TVs will diffuse widely in the next five to 10 years, as deployed television sets age, new apps and services will emerge that cannot be supported by the smart TV's embedded portal. In fact, this is already happening, to the dismay of early smart TV buyers. This will inevitably drive consumers away from using their smart TV for net-to-TV purposes and toward less expensive devices like net-enabled game consoles, Blu-ray players, and iSTBs. According to Dixon, consumers in search of the latest OTT features are much less likely to replace their $2,000 big-screen HD Smart TVs - platforms with an eight-to-ten year life cycle - than they are to spend $100 on a new sidecar device with a two-to-three year life cycle and add it to their TV system.

Dixon also points to the dramatic consequences of platform fragmentation that today characterise the smart TV industry, and that frustrate advertisers struggling to decide which platforms to support and how to best integrate multiple outlets into their workflow. This issue alone will cost TV OEMs more than $1 billion in unrealised advertising dollars. When combined with gaps in the product upgrade cycle and the speed at which competitive ancillary platforms are leapfrogging smart TVs, TV OEMs are set to face significant challenges even as platform sales experience rapid growth.

is a conflict of interest, as the manufacturers are mostly interested in increasing sales of the Smart TVs, whilst OTT and linear TV operators have very different interests.

httv: All major TV manufacturers are implementing HbbTV in most if not all their new Smart TV product range in Europe. HbbTV is today the only solution that provides to content producers and OTT operators compatibility across multiple Smart TV brands.

Inview: Being on a platform that cuts across multiple devices is a key benefit for content owners as they can reach the mass market without having to develop a different App for each product.

Irdeto: There are several possible answers: Select a strategic partner like Irdeto to manage it; Focus on the devices which have the highest penetration in the target markets; Identify dominant third parties (such as Hulu) through which content can be syndicated. This really depends on the brand strength and market share of whoever's making the decision.

PacketVideo: The broadcast landscape has changed irrevocably; traditional linear programming has been replaced with consumer driven TV schedules, where viewers dictate when, where and in what format they view their favourite shows. Attracting high audience numbers is no longer just about securing a prime time TV spot. As a result broadcasters need to liberate their content, it may be they reserve flagship shows or premiers for traditional primetime, but ease of access, across multiple platforms will be hugely important for content producers. The good thing is broadcasters will actually get greater longevity out of their content, being able to advertise against archive content longer than was ever possible with the pure broadcast TV model.

Rovi: Most content producers and OTT operators seem to be focusing on key platforms – iOS and Android. In this complex device and apps environment, they should develop with moderate investment, and put more money into the projects if they are popular.

Shazam: While many content producers will continue to make the decision to build their own specific apps, they will be downloaded primarily by the 'super fan' as most people won't want to have more than a dozen TV apps on their phones and tablets. Additionally, content producers will be required to spend resources to promote the app, yet even after using valuable airtime to promote network or show-specific apps, only a small percentage – a single-digit percentage – of viewers might get and use the app.

smartclip: Right now, content producers should consider platforms and devices that will provide the most reach, rather than all devices, as this will be a very costly exercise. There are multiple app developer companies out there that can use assets and provide solutions that leverage common standards and deliver reach.

Technicolor: Ideally, content producers and OTT operators should coordinate efforts and take all necessary action to sponsor and endorse only a limited set of technologies and standards for management and distribution of their content. But this view is not compatible with the pace of innovation that technology permits and that the content producers and operators need to leverage to differentiate from their competition. Also, national considerations may ruin efforts of convergence (see the parallel paths of MHP and MHEG more than 10 years ago, and more recently HbbTV and YouView).

VO: Our solutions don't completely remove the complexity of such management issues, but they do help to dramatically reduce

Connected TVs to reach 650m by 2017

A report from Juniper Research forecasts that the number of residential TVs connected to the Internet via different platforms such as Blu-ray players, set-top boxes and consoles, and also via built in wireless or Ethernet connectivity, will reach almost 650 million by 2017.

The report finds that Smart TVs are becoming mainstream amongst consumers, similar to smartphone and tablet adoption. Even though the replacement cycle of TVs are longer than for, say, smartphones the report forecasts strong growth over the forecast period.

Juniper finds that there is an increasing demand from consumers for new video content services from OTT providers Netflix, LOVEFiLM and YouTube. The revenue and profitability of traditional entertainment services within the home has attracted many new players including content aggregators and platform providers such as Apple and Google.

This consumer demand for connectivity and content has influenced the smart home entertainment segment in a major way along with the integration of social media, multi-screen strategies and applications.

Report author Nitin Bhas noted that as the cost of these connected devices fall over the period of forecast, the value of connectivity would rise.

"The consumer electronics industry along with key players, such as the content aggregators and platform providers, needs to clearly define this device ecosystem and start working towards driving this phase of growth and turn it into a revenue opportunity," Bhas commented.

time-to-market and the complexity of managing such services. The three core products (Security/DRM, SDP, Content Discovery) all come from VO and are fully integrated with chosen third party partners (CDN, STB, etc.), which allows the reduction of complexity.

IP Television: Will Smart TV buckle under the weight of a multitude of different apps stores or will a common platform emerge?

Accedo: It was not until the 2012 Smart TV models that the technology was mature enough to provide a truly attractive consumer experience. The innovation continues and we will see even more attractive functions and services to the consumer but these will differ based on provider. There is a challenge in the difference of technology and complexity of the ecosystem for a common Smart TV platform to emerge inthe short term.

ActiveVideo: Common platform versus different app stores might be two different proposals. A common technology platform, yes. A common marketplace, no. Smart TV players differentiate themselves based on unique user experiences (i.e., the marketplace). Their goal is to top one another competitively in the user's eye. To the user, however, the technology platform beneath the user experience is transparent. Therefore, unification is possible.

Conax: A trend of operators trying to offer both linear TV as well as OTT services will result in some standardisation, such as Android based solutions.

httv: A common platform like HbbTV adds value to Smart TVs.

Irdeto: A common format is unlikely to occur in the near future, but that doesn't really matter as long as the operator is flexible in how it manages, secures and promotes its content. The most successful OTT operators are nimble enough to launch on new devices as soon as a certain device achieves enough market strength. Irdeto's talent and experience is in providing technology and services which allow the choice to be based on the best business decision rather than being constrained by technology.

PacketVideo: Twonky apps work with numerous devices and offer an open architecture platform but it's extremely common for manufacturers to build their own ecosystem of connected home devices and apps that only work with these services. Now when consumers buy devices they are often unable to purchase from different brands in order to connect their smart TV with their phone or tablet. It's important that consumers are not restricted to one ecosystem or platform and have access to an open platform in order for the idea of the connected home to really develop. How can devices converge if there are boundaries and different app stores to stop them from doing that? A common platform needs to emerge if Smart TVs are going to have an impact on other devices and the alternative screens that consumers are looking to.

Rovi: Smart TVs will most certainly simplify. We probably haven't seen the worst of the complicated and jumbled user experiences yet, but Smart TVs are not going away. It most certainly will get better and simpler, though.

Shazam: Many content producers end up building their own app and working with Shazam to complement their app strategy. Shazam can promote the show-specific app to its fans, but for those people not ready to take that step and download another app, the content producers can still reach Shazam's massive user base by collaborating with Shazam to create a rich, satisfying experiences full of great content and social features, all within the Shazam App.

smartclip: There are some common standards and some of the TV manufacturers, such as LG and Philips, are working together. As more apps emerge, platforms will need to offer better UI experiences for finding and surfing content against usage and interest. This is an emerging market and will change as with any other industry that starts to mature.

Technicolor: Proliferation of different applications is actually of lesser concern than proliferation of operating systems, middleware solutions and standards, which will force the content editors to write and maintain multiple versions of their applications to cope with this diversity. Technicolor has developed a new software solution that is distributed and open, acting as a common language for all connected devices. Companies can now develop their app once, then people can download it on all devices running our solution on top of their own software. It's not a common

75% of US connected TV owners watch online

Research from Parks Associates finds the number of US Smart TV owners who use their Internet-connected device to watch online video increased by over 30% in six months.

"The percentage of Smart TV owners connecting the device to the Internet has steadily increased, from approximately 40 per cent in 2010 to 56 per cent today," said Pietro Macchiarella, research analyst, Parks Associates. "This device, when connected, offers a toehold to a variety of players, including broadcasters, over-the-top video providers, and pay-TV providers."

The research shows the number of Internet-connectible TVs shipped will jump from less than 1% in 2008 to over 45% in 2012. The report also shows:

- 75% of US smart TV owners who connect their set to the Internet watch on-demand online movies at least monthly, versus 57% in 2011
- 71% watch online TV shows at least monthly, versus 51% in 2011
- On a near-daily basis, 30% watch movies and 32% watch TV shows

"Smart TVs have the potential to be both a threat and an opportunity for pay-TV providers," said Brett Sappington, director, research, Parks Associates. "Smart TVs provide consumers another way to access over-the-top services like Netflix on the TV, providing a new distribution channel that all players can leverage to deliver content to consumers. However, by integrating the Smart TV into their distribution model, pay-TV providers can leverage their strengths in content costs, customer relationships, bundling, and other areas to play a more substantial role in OTT. In addition, pay-TV providers can potentially use smart TVs to lower subscriber CPE costs, an important consideration in a highly competitive market."

platform but a common language that solves this problem of multiple execution environments used in the different apps stores. With our new language framework, you can now use an Apple app on a Samsung device seamlessly!

VO: We don't think there will be a common platform in the near future. Content service providers (new and legacy) in most cases will be the reference for users.

IP Television: How should content owners ensure their product is discoverable and accessible amid a plethora of apps?

Accedo: The key to ensuring end-consumer usage, both now and in the future, is ensuring availability on different platforms, and focusing on both quality and usability when launching an application. Companies will also have to compete with price.

ActiveVideo: One of the things that inhibits visibility across every platform for content owners is the prohibitive cost of writing content and the promotional apps that support them for every device. Here's where the cloud offers two key benefits. First, centralisation of services in the cloud provides a single point of integration and a highly-interoperable environment, including the ability to interface with existing, Web-based search and recommendation engines. The other key benefit is that it becomes faster, simpler and far less expensive to build apps and Web-based channels that drive viewers to specific content. In a field test with a major programmer and cable system operator, ActiveVideo research showed that a Web-based channel boosted viewing of a related linear channel by 50%.

Conax: There will be negotiations with the linear TV operators. They will determine in a hybrid environment in which apps and content will be available.

httv: Brands and Search! In TV, the best brands are the broadcasters. The Hybrid feature of HbbTV is a must, where a broadcaster could promote through broadcast for its online advanced services/apps.

Inview: Intelligent recommendation engines, with good metadata, are key here. With a wider range of content coming from various sources – the broadcaster, the Internet, the user's own recordings etc – the best way to ensure accessibility is to match the content to the user's preferences.

Irdeto: This is a rather complex challenge for content owners that can be understood from two different perspectives: (1) Ensuring that content is referenced in most app/content portals. Then it's about contracts with different platforms, which is not our direct area of expertise; (2) Ensuring content can be found on a platform or an app. This is more about search and discovery features and is something we provide through our advanced Broadband and multi-screen TV solutions. Search and discovery capabilities are critical features for any multi-screen offering and rely on recommendation engines, social graph engines and savvy content selection (such as 'most-watched', 'most-liked', etc.). This guarantees content is exposed at the right moment on the right device where it makes sense for the end user profile.

PacketVideo: The app market is incredibly crowded, so if you're going to develop an app for Smart TV purposes it needs to do something new. Companion apps which work alongside other media in the home allow users to find it through content that they are already familiar with. Enhancing a viewing experience to make it more interactive will engage viewers and offers the move towards a connected home which audiences are looking for.

Rovi: We hope to see content owners participating more in the metadata creation process, learn to target to their audience, and help the discovery apps and services make certain their audience is aware of the content. Marketing entertainment will have to go to 2.0.

Shazam: Other TV apps may ultimately generate good learnings, but content providers working with us can innovate and learn while driving results and real impact thanks to our reach. Only a small percentage of people will go so far as to download an app for a specific show. However, content owners can work with other second-screen apps to promote theirs. For example, Shazam did this when working with NBC on the Olympics – their Olympic App was promoted in the Shazam tag result so that people could use either – or both – apps to keep up with the Games. We also did this with the GRAMMYs and some of our brands and their Shazam-enabled TV ad campaigns. The old adage "Build it and people will come" certainly does not hold true for mobile apps. But, content owners can hedge these investments in standalone apps by going to where people are already congregating today – within apps like the Shazam app and social media sites.

smartclip: Firstly they should market to their own customers and highlight the fact that their content is now available on other devices. They should also be working with the device manufacturers to promote their content. The reality, however, is that all content is not created equal and content owners should really think about what content makes sense for the big screen and how users engage.

Technicolor: Metadata is a key component to take into account here. Descriptive metadata which give the possibility to deliver search results according to a certain number of keywords (artist, objects, scenes...) but also usage metadata directly taken from the user's home. Whatever apps people are using, service providers must be able to provide recommendations according to their customers viewing habits. If a user likes action movies with monsters and aliens, then both usage data and descriptive metadata must be taken into account by the app together with the service provider.

VO: Again, we believe that there won't be in the near future an open store like Apple, Amazon or Android. It will be the service provider with a good and new user experience that's not as limited as today, but also not an open Internet approach.