

The video landscape as we know it is undergoing a revolution. The advent of the 'connected home' means that simply delivering content to one siloed device is no longer enough. With today's consumer beginning to expect nothing less than the ability to access high-quality content on any device, at any time, over any network, Video Service Providers (VSPs) must evolve to remain competitive, and if they have not yet developed a multiscreen strategy or are not at least planning for it, they are already behind and missing out on taking a bite of this valuable proposition.

There are, however, a number of challenges associated with the move to multiscreen – with cost, content security barriers, firewall impediments, and infrastructure support and overhaul issues all playing their part. The biggest challenge currently involved with multiscreen delivery is, however, the move to IP – a requirement for large-scale TV Everywhere deployments – and fast emerging as the front-runner in the bid for control of the living room. Indeed, live, catch-up TV and video-on-demand (VOD) delivered over IP are fast becoming required complements to the traditional TV experience.

### Out with the old – in with the new

As consumers increasingly demand flexible and personalised viewing experiences, delivery of content to the home through the traditionally dominant medium – the set-top box – is becoming increasingly riddled with the opera-



### Changing market

Indeed there is a real market opportunity available here. Over the past couple of years, the marriage of traditional broadcasting and the internet have changed the face of content delivery services. Driven by the increasing availability of low-cost, high-resolution connected devices, multiscreen IP video delivery of both premium and user-generated content has become a market with tremendous untapped potential. At the end of 2011, there were over 256m connected TV devices in use worldwide – and according to In-Stat, this figure will shoot up to 1.34 billion by 2016, with others predicting significantly higher numbers.

business model in the video industry now lies in effectively implementing IP delivery. RGB Networks has long been preparing for the growing penetration of IP video through the development of advanced transcoding and adaptive streaming technology.

IP video enables operators to move into a simpler and more standardised operating environment, allowing for easier integration and quicker and more flexible deployment of both linear and on-demand content to any device. And just as important, through adaptive streaming, IP video delivery also enables new options for content monetisation across all screens.

Fundamentally, providers need advanced ad insertion capabilities to monetise their services, and an IP network offers them simpler, cheaper and more scalable ad insertion than offered by traditional methods, while allowing targeting at granular levels down to individual devices. Utilising adaptive streaming delivered over IP, operators can therefore take charge of and monetise services in a way they were unable to before.

# RGB Networks

## Meeting the Challenges of IP Video Delivery

tional challenges and high costs. The boom in the connected device market is driving consumers away from reliance on linear viewing through set-top boxes, with consumer habits moving from the traditional living room TV experience in favour of watching personalised content on the device of their choice.

The introduction of the IP connected TV has given another avenue through which to cater to the increasing demand from consumers for web-like viewing of content. These factors have ultimately led to questions surrounding the long-term viability of the set-top box market, and providers are beginning to realise that rolling out IP streaming services and deploying intelligent IP devices that can pick up video on any network, through any device, anywhere in the world, offers significant benefits over migrating to a set-top box based IPTV platform.

Providers are also beginning to see the prospective revenue stream that can come from advertising and transactions through social TV – a concept made a reality with IP video delivery and companion devices. Research from PwC shows that online TV advertising spend will increase to \$1.4 billion by 2015 – a 30% compound annual increase from 2010 – and a study by Park Associates estimates that the value of transactions conducted via connected consumer devices by 2015 will total £5 billion. It therefore comes as no surprise that providers are racing to get ahead of the competition to deliver a cost-effective yet high-quality IP video delivery solution.

### IP as the future of the connected home

Undoubtedly, the key to executing a successful

### Making it happen

Ultimately a move to multiscreen means that there are a number of issues that VSPs have to contend with in order to guarantee quality of content on each device. Take transcoding for example, which involves a number of parameters. The first relates to the resolution required. For video delivery to a large screen, a very high resolution is required. However, in the last few years, we have seen a proliferation of new transcoders spanning low resolutions as well to cater for the smaller devices on the market. Secondly, you have to consider whether you are doing live or offline transcoding. Finally, you need to consider scalability – the number of channels you are trying to transcode simultaneously and the number of output profiles you need to create can grow

rapidly as new devices with varying screen resolutions and adaptive streaming protocols are added to the mix. With so many different factors to contend with, it's no wonder that many are put off by the complexities of multiscreen deployments.

RGB Networks not only understands video processing, but also understands the technological, architectural and economical challenges that providers face as they prepare their infrastructure for high-quality video delivery. Whether it's delivering services over managed IP networks or unmanaged over-the-top (OTT) networks, RGB's Enhanced Video Intelligence Architecture (eVIA) has been designed from the ground up to specifically address the management, scale, quality and service flexibility needs of the new generation of IP video providers.

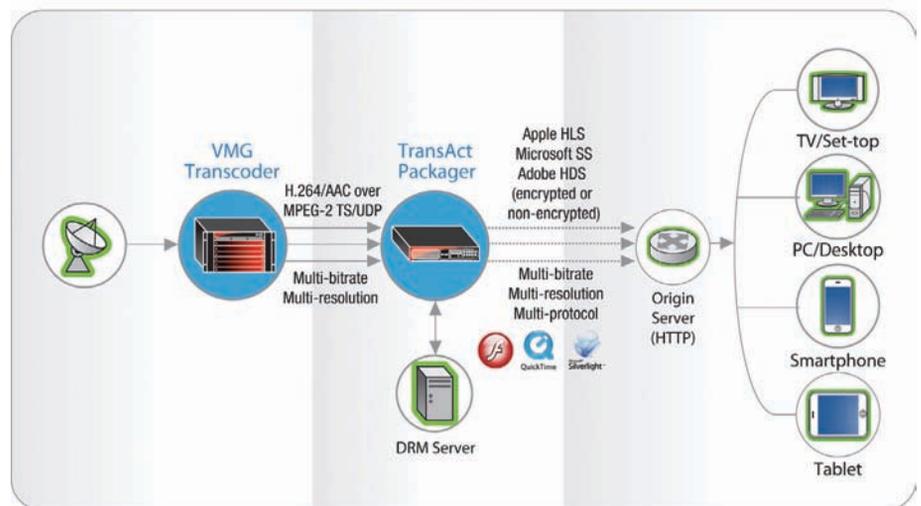
The flagship of RGB's eVIA solution is the Video Multiprocessing Gateway (VMG™), the industry's only carrier-class, real-time transcoding platform, providing high availability through multi-level redundancy features. With unmatched density and capacity, the modular VMG provides the scalability required for cost-efficient, pay-as-you-grow expansion as subscriber growth dictates.

By virtue of its modular, multi-function design, the VMG can also serve a range of other video processing functions, including transrating, grooming, ad insertion and programeme substitution. Its support of these functions allows for parallel distribution of programming over MPEG-2 TS to legacy set-tops, as well as ad insertion utilising traditional SCTE standards.

Due to its unified functionality, the VMG requires a single management system, saving the cost and headaches of wiring and configuration of multiple video processing devices, and its high-density design reduces rack space and power requirements. It also employs a best-of-breed processor approach, utilising the best processor for the job—ASIC, FPGA or general-purpose processor—depending on the requirements of the task at hand, ensuring maximum efficiency and quality.

The evolution of video delivery transport has led to a new set of de facto standard adaptive delivery protocols from Apple, Microsoft and Adobe that are now positioned for broad adoption. Consequently, networks must now be equipped with servers that can take high-quality video content from live streams or file sources and 'package' it for transport to devices ready to accept these

RGB's Flexible Transcoding/Packaging Architecture for IP Video Delivery



new delivery protocols. RGB's TransAct Packager performs this task, bringing several unique capabilities to this function, including live and on-demand support of all major adaptive streaming protocols, as well as RTMP and emerging standards.

Working as an integrated pair, the VMG and TransAct Packager provide a flexible solution for delivering and monetising live and on-demand content to multiple devices. Depending on operator requirements, RGB's Packager can be deployed centrally, co-located with the VMG, or it can be deployed at the network edge. The Packager offers both software- and hardware-based options, giving operators maximum flexibility.

In addition to formatting and segmenting streams, the Packager encrypts them as well. By employing a de facto key-exchange API standard, operators have the flexibility to use RGB's Packager with all major digital rights management (DRM) systems and offers proven partnerships in this area, as well as for integration with leading content distribution network (CDN) vendors.

### Hyper-targeted ad insertion

In order to offset the cost of deploying new video delivery systems, IPTV and OTT network operators often require a new revenue stream. The ability of RGB's eVIA solution to enable targeted advertising makes it an ideal solution in a highly competitive video marketplace. With eVIA's support for adaptive bitrate ad insertion, IPTV and OTT operators for the first time have an integrated ad insertion solution, together with best-of-breed advanced video processing functionality, that can unlock the TV advertising revenue opportunity.

Leveraging RGB's years of ad insertion expertise, eVIA enables service providers to monetise HTTP streaming services, whether on managed or unmanaged networks, finally providing true targeted advertising capabilities, leading to a new revenue source for operators. This first-of-its-kind architecture will take HTTP streaming services well past today's capabilities with shorter adoption time than usually seen with new technologies.

### Top Tips for Video Service Providers Moving to IP

In moving to an IP environment, VSPs need to remember five key tips:

- Choose your screens wisely – there are a plethora of new devices out there, so make sure that you chose the most viable and popular when starting out, but ensure that you're positioned for easy expansion as the market evolves.
- Select knowledgeable, best-of-breed technology partners to take the headache out of your deployment and ultimately guarantee the highest quality video service for your subscribers.
- Content is King – users want access to both live and on-demand content – everything they can get from their current pay-TV service.
- Monetise your strategy – make sure that you see a return for your original investment with new, targeted advertising options.
- Scalability is essential – as demand for multiscreen content becomes the norm, it is essential that your solution can grow to meet the needs of an expanding user base.

### Conclusion

The move to a multiscreen environment for the delivery of TV Everywhere services certainly holds ample opportunities, however, VSPs are struggling with the various cost and infrastructure challenges presented. IP video represents a future-proof way for VSPs to capitalise on this growing trend, and next-generation video delivery solutions, such as those from RGB Networks, can ease the transition and take the headaches out of the change.