

In view of the growing demand for access to rich video content within enterprises, Geny Caloisi researched the available options asked what needs to be in place for the successful implementation of IPTV solutions.

# TV down the tubes



Tripleplay IPTV is used to deliver media content to the Virgin Travel store in Guildford, UK.

When it comes to ways of transporting and sharing media, IP networks are becoming rapidly ubiquitous. To watch video, live or on demand on any device and at any time, IPTV is the favoured solution.

Rich video transmission over the internet in this context may include: Live TV, Video On Demand (VOD), digital signage content and Interactive TV (iTV). AV specialists that provide these services to enterprises, deliver it across an access agnostic, packet switched network that employs the IP protocol to transport the audio, video and control signals. IPTV deployments allow tight network security and multiple levels of choices.

Colin Farquhar, CEO at Exterity clarifies, "If an organisation wants to distribute many channels of live TV and video around their organisation at guaranteed broadcast quality, they are unlikely to find a viable IPTV service to support them; they need to guarantee bandwidth for reliable service delivery can be the main limiting factor. If an organisation wants to transmit video content, perhaps from an event, then IPTV as a service could provide a useful means of achieving this."

For best results on IPTV, you will need a high-speed

*“ The trend in the corporate market has changed from wanting TV distributed to big screens to wanting it distributed to the desktops. ”*

*- Paul Reeves, VBrick*

IP connection on the end point and a multicast-enabled network is also recommended, if not essential. Multicasting makes bandwidth consumption more manageable, it's scalable and is more efficient in terms of installation and configuration.

Paul Reeves from VBrick points out, "One of the things we see a lot in organisations is that, when they have multi-site deployments rather than having separate head-ends with satellite dishes for TV feeds on each building, they want to use internal multicast to send TV to desktops. The trend in the corporate has changed from wanting TV distributed to big screens - maybe in the lobby area, to wanting it distributed to the desktops. These video feeds have also become more specialised and personalised."

Rainer Link from Teracue, a German company that

started working on IPTV in the early 90's says: "An efficient IPTV system will use the IP network as 'the' unlimited AV switcher and router. This happens when the IP network supports Multicast Traffic. Meaning one input stream will be automatically switched and routed to any IP end client. By Multicasting the signals will be available to any receiving client such as a PC or a TV, with set top box.

"If Multicast is not enabled or allowed on the IP network," he adds, "then IPTV systems can still be installed but additional streaming and routing servers are necessary."

Steve Rickless, CEO at Tripleplay expands, "An organisation's network needs to be IP multicast protocol enabled with IGMP snooping and an IGMP querier in the core network device."



“When bandwidth availability and connection quality are good, the quality of delivered video is then determined by the video codecs.”

- Colin Farquhar, Exterity

< IGMP (Internet Group Management Protocol) snooping is the process of listening to network traffic. In order for IGMP, and thus IGMP snooping, to function, a multicast router must exist on the network

and generate IGMP queries.

Aside from this, Mike Brooman IT expert from RTS-Technology (soon to change its name to Vanti) warns, “If anyone mentions wireless – ensure their wireless

infrastructure has the appropriate mechanisms in place to handle video (multicast) traffic.”

To ensure fluidity and quality, sufficient bandwidth and good connections – so that no data is lost in transit – are essential.

Farquhar says, “When bandwidth availability and connection quality are good, the quality of delivered video is then determined by the video codecs being used encode the video sources. MPEG-2 has been the traditional codec for standard definition and video applications. The newer MPEG-4 H.264 codec achieves comparable quality to MPEG-2 for around 50 per cent of the bandwidth, making it ideal for both low bandwidth applications such as mobile and internet streaming, and for much higher resolution high-definition video. The continuing increase in video resolutions to UltraHD and beyond is driving the development of more bandwidth efficient codecs like the recently announced H.265 standard.”

JD Jones, director of Digital Media Solutions at AVI SPL adds, “End-to-End Quality of Service (QoS) support within the infrastructure is paramount. QoS uses classification, marking, policing, and shaping operations to ensure time sensitive or real time data (video for example) gets processed before non-time sensitive data (email, file transfer, etc.)”

The bandwidth required will vary depending on the application. For Standard Definition (SD) 2Mbps to 4Mbps will suffice. For HD, the network will need to have between 6Mbps and 20Mbps bandwidth available.

In cases where the network needs to carry regular data as well as video, IPTV is the obvious choice. Now, what would happen if you only need to deliver video to multiple end points? Would you want to be thinking of Cat5 wires, switches, routers and firewalls?

ZeeVee CEO Vic Odryna argues that for organisations that are looking for a simple and affordable way to upgrade onto digital, in order to provide HD and SD channels to multiple end points, the easiest way would be to use the already existent and inexpensive coaxial cables.

Hospitals, hotels, senior living centres, condominiums or other locals where people are looking for a traditional line-up of programming, will typically have coaxial. The cable, according to Odryna, has enough bandwidth to simultaneously carry many hundreds of channels of HD broadcasting.

“Until now, the cost of creating a digital HDTV channel was out of reach – we are talking about tens of thousands of dollars per channel,” said Odryna and added, “ZeeVee has shattered that barrier, making it possible to create and broadcast an HD digital channel in the range of US \$700, and digital SD at less than US \$200.”

The world is digital

It's time to evolve



EMEA INAVATION AWARDS 2012 TECHNOLOGY FINALIST

AV AWARDS 11 FINALIST



D-Cerno

Archive your meetings...

... with the first *Digital* discussion system for small to medium-sized meetings.

Simply plug-in a USB memory stick and record every word for your digital archives.

conference@televic.com



televic

conference

www.televic-conference.com



“ The adoption of IPTV and Social Media have run parallel, so it is unavoidable that they will be intrinsically linked. ”

- Steve Rickless, Tripleplay Services

< The ZeeVee boxes receive HD and SD video from traditional sources like VGA, HDMI, Component and Composite video and then convert each source into a unique digital channel. These channels are then combined into a single output, which is then connected to existing coaxial wiring and sent throughout a facility.

Providing an IPTV feed is not just a matter of laying cable, plug and play. Issues such as Digital Rights Management (DRM) and security have to be taken into account by consultants and installers.

Rickless says, “With the Tripleplay IPTV and Video on Demand solutions we see copyright control as key. Many of our customers invest in the technology due to the fact that we can very effectively control copyright through integration with, for instance, LDAP (Lightweight Directory Access Protocol). Our systems provide full DRM and allows the storing of encrypted content. To simplify management our system can then

provide a full audit of which content had been played on which device and at what time. The integration with an organisation’s LDAP/AD authentication system ensures security is maintained, allowing content and management access only to whom a customer chooses to provide it to.”

VBrick’s Reeves agrees that this is important also to distinguish between different end users and provide each of them with the information and clearance they need. “We integrate with the organisation’s active directory. The majority of organisations have this way of delivering services to the users so that they get tailored content, this can be TV channels they can watch but also training and company information relevant to the individual.”

Farquhar says, “For most organisations the ability to restrict, control and monitor access to content on their network is a critical requirement. Opening up access to video services from the internet might appear to be

a low cost option, but could open the organisation to larger risks.

“IPTV delivery involves different types of traffic travelling to the end user in parallel, each with its own specific set of requirements - These include linear channels, VoD, PPV, data and graphics for announcements and digital signage integration, and interactive applications. In order to meet the increasing demand for integrated IPTV deployments, installers need to address familiar tasks like network security, but also become versed not only in DRM but other back end applications like OSS and BSS systems,” emphasises Farquhar.

Once the network is in place, together with all its protocols and requirements; and the client has established how video over IP is going to be used, it is important to help them learn all that is on offer. IPTV works closely with digital signage (DS) and social networks-type applications can help the company meet the its objectives for providing video.

IPTV is a solution that allows companies to shift significant volumes of content within an organisation. To achieve best results, each case has to be considered individually weighing up the client’s needs, how they want to use the video content and the bandwidth and network restrictions it might have. ♪

# Changing Gear

## TECHCONNECT “HDMI+RS232-over-CAT5”



- HDBT 70m and 100m versions
- Analogue audio output at receiver
- Power adaptor can go at either end (PoE)
- Sold as Tx/Rx sets or individually

### OTHER TECHCONNECT PRODUCTS:



Available from **Maverick**  
Part of the Tech Data Group  
[visionaudiovisual.com](http://visionaudiovisual.com)

**VISION**  
installation:innovation