

Bounce like a particle, roll like a wave

BY ROBERT BELL

Particles and waves, for all you physics buffs, are two different things. Electrons coursing through your broadcast gear are particles, while broadcast signals beaming from your towers or up to your satellites are waves. And for these two, never the twain shall meet — except when it comes to light.

Whether ordinary or in laser form, light acts like both a particle and a wave. Don't ask me why.

There is something else that is as ubiquitous as light that also acts as both particle and wave — metaphorically speaking, that is. It is called the Internet Protocol, or IP. Although the data packets defined by the protocol are certainly like packets, IP is washing in rising waves over broadcasting all around the world.

The effects are everywhere but the IP "climate change", like the scientists' models of the real thing, can have particular and sometimes peculiar effects, depending on where you are located in the media supply chain.

Digital's final destination

The process of digitising broadcasting has been going on for a long time. In more and more markets, it is arriving at the final stop of the journey — the consumer's home — through digital terrestrial TV



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or digital DTH (direct-to-home).

What is interesting about this is that a lot of the intervening plant remains analogue. In order to meet government-imposed deadlines to go digital, broadcasters switched off their transmitters but left behind the working analogue systems in place. Inevitably, broadcasters will start swapping out the analogue bits and substituting digital ones, until they arrive at an end-to-end digital network, based on IP.

That is when IP will begin delivering major cost-efficiencies and new capabilities — but only after lots and lots of work.

From broadcasting to media-processing centres

The traditional broadcast centre is complex enough, God knows, but is poised for a leap in complexity. As media outlets multiply to include Internet and mobile, the broadcast facility must become a media-processing centre (MPC) to be able to ingest content in any format and output it in a wide array of formats and standards flexibly and without continual technology retrofits.

Globecomm Systems, one of World Teleport Association's members, has just completed an MPC for a top-tier mobile carrier in India. The MPC requirements pose a terrific green-field opportunity for new entrants but a significant competitive challenge to incumbents.

Crossover hits

A huge volume of programming that first appeared on TV has already made its way for replay as IP video to the Web.

Broadcasters are hard at work figuring out the business model for advertising. But the explosion of video content originating on the Web is also making its way to TV. Most of it is still stuck in the user-generated content category, with low-resolution, handheld cameras and amateurish production values.

But it is only a matter of time — if it is not already happening — before the Web becomes the place to start a show, build audience and then make the leap to broadcast.

Lean back or sit forward?

A debate has — well, perhaps "ragged" is too strong a word — taken place over the past few years. It has pitted fans of interactivity against fans of the *status quo*. Will people who enjoy the "lean back" TV experience, in which they are receivers of content, really want the "sit forward" mentality of two-way interaction.

Well, the debate will soon be decided, as IP floods the distribution chain and makes possible ever more interaction. I suspect the outcome will not be one or the other but a hybrid. Depending on how old they are and what kind of programmes they watch, viewers may want reception, interaction or bits of both.

That seems to be the rule of the IP-driven, digital age. We add rather than change. People don't want different choices; they want more choices, which means that broadcasters must find increasingly cost-effective ways to support rising complexity. Fortunately, that's what IP does best.

Address, please

The end-to-end flood of IP into the distribution chain may resemble an onrushing storm, but it has a rainbow at the end. When the majority of media devices are IP-enabled, they will gain Mac addresses that identify each one to the network.

It is a short hop — though probably years of investment and work — from there to custom-tailored content for the viewer, to knowing what the viewer is watching, what demographic that represents, and what products or services advertisers should offer for sale.

Major privacy and security issues will need to be resolved first but they surely will be if the opportunity is as large as it appears.

As I have suggested already, this will take a lot of work. It will require broadcasters to seek strong technology partners rather than build everything them-



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selves. The investment requirements are huge and pose a challenge in a market where, as one network executive said to me, "we are managing decline" due to fragmentation of media consumption. It will also require business models that reward change.

Those IP particles, as they crowd together into powerful waves, are likely to transform the business from top to bottom, and smart broadcasters will make plans to go with the flow.

Robert Bell is executive director of the World Teleport Association, (www.worldteleport.org). It is headquartered in New York City and has members — teleport operators, satellite carriers, fibre carriers and technology suppliers — in over 20 nations. Bell welcomes your comments at rbell@worldteleport.org.

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Operations &
Engineering
ESPN Star Sports



Andrew Anderson
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Group Broadcast
Services
Seven Network Limited



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