

Accessing the next billion eyeballs

BY ROBERT BELL

In January this year, I led a workshop on the edge of the Pacific Rim for the members of the Society of Motion Picture and Television Engineers (SMPTE). The occasion was SMPTE's 2006 joint conference with the Video Transport Association or VidTrans, in Hollywood, California, USA.

The workshop, Titled *Accessing the next billion eyeballs*, began with an address highlighting 10 key trends in video distribution that production executives need to understand in order to take advantage of new opportunities and protect investments in legacy systems.

It was presented by Sidney Skjei, president of Skjei Telecom, an engineering consulting firm based in Virginia, USA. Prior to his consulting career, Skjei held senior-level engineering management positions with GTE Spacenet, Southern Pacific Satellite Company and COMSAT World Systems. He has developed a wide range of hardware and software telecommunications products and services for more than two decades.

I thought Skjei's list was well worth sharing at a time when video-distribution technologies are undergoing dramatic change. While creating new capabilities and reducing costs, these developments are making things more complex for those taking decisions on technology investment.

10 key trends in video distribution

1 More flexible fibre optics: Fibre is becoming a far more flexible medium for video transport, thanks to developments such as MultiProtocol Label Switching (MPLS), 10 Gigabit Ethernet and Gigabit Passive Optical Networks. Fibre are also being integrated by the global carriers into hybrid satellite-fibre transport solutions. Skjei believes that these developments and others are tending to make IPTV a more ubiquitous transport medium.

2 Improved digital encoding and modulation: A wave of new encoding and modulation standards are being adopted by the media industry, and laying the foundation for

another great leap in compression, which will drive down the cost per channel to deliver video. Skjei cited DVB-S2, JPEG 2000 and MPEG-4 (also known as AVC or VC-1). DVB-S2 offers special value because it incorporates "backward compatible" modulation. This means that the standard supports different data rates in the same signal, making it possible to overlay a second network on top of an existing one.

3 Less streaming, more file transfer: Many young people today call the TV that the rest of us watch "appointment TV". It requires the viewer to watch at a time and date dictated by the broadcaster. The introduction of that term suggests that video-on-demand (VoD) has a strong future, and it is already reshaping video contribution and distribution. Non-real-time broadcasting takes advantage of the plummeting cost of digital storage — whether in a set-top



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box (STB) or a headend — and makes more efficient use of satellite bandwidth. It also opens up possibilities for highly targeted advertising because the interactive distribution system "knows" the digital address of each viewer who requests the content.

4 Mobile video: The hot story today about tomorrow's video business is the transmission of sports and other high-value content to 3G mobile phones, as well as subscriber transmission of video captured on those phones. But the tele-

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phone may not turn out to be the dominant mobile-video device. Other candidates include laptops with a WiMax or other broadband wireless connection, and displays in cars, trains, buses and airplanes, where some airlines are already providing real-time video to their passengers.

In any case, the existing cellular network is incapable of handling any meaningful amount of demand for streaming video, and full deployment of mobile video will require the construction of an overlay digital transmission network. Who will build it — telcos, broadcasters or some third party? It remains to be seen.

5 Increasing importance of metadata: As video increasingly becomes an IP stream or IP file transfer, the metadata em-

bedded in the code will rise in value to media companies. Standards-based metadata, interacting with the burgeoning number of display devices, will control how the image is processed as well as trigger functions in the display device via XML. This will turn tomorrow's video display devices into highly interactive platforms for the user.

7 More powerful set-top boxes: Thanks to lower costs and higher capacity in storage, the lowly box is set to morph into a multifunction device with multiple tuners able to download content from satellite, cable and Internet sources, and act as the server for a home media network. It will also have powerful capabilities for two-way communications.

One example is the European Space Agency's SATMODE project, which aims to turn the STB into an interactive node in a mesh network linking viewers to content sources and other viewers.

Broadcom, a provider of semiconductors for wired and wireless communications, re-

ate a boom market for HDTV. At the same time, however, the market has demonstrated an insatiable appetite for narrowcasting: channels specifically targeting interests or identity groups (such as immigrants) within a population. Reduced costs to launch and operate a new channel via cable or direct-to-home (DTH) satellite has made narrowcasting possible and will continue to drive growth in the future.

9 More interactive video: It was not long ago that the state of the art in interactive TV involved viewers calling phone numbers or going to websites on their PCs in order to vote or engage in transactions. Today, VoD is growing on conventional cable TV as well as new "telco TV" roll-outs. Inexpensive satellite return links for DTH — costing less than US\$100 — are also coming to market. Thanks to this technology, interactivity will increasingly take place entirely on the TV set, and killer apps will emerge, with two of the top contenders being gaming and gambling.

10 More value-added service providers: The nine trends above suggest that the broadcasting business will become far more complex to manage. Fortunately, service providers are creating end-to-end solutions that relieve their customers of the need to manage and continually invest in this complexity. Companies offer content ingest, storage, management, distribution, security and subscriber management as a turnkey service. While some broadcasters prefer to maintain in-house control over the distribution chain, the trend towards outsourcing is already strong and likely to grow in the years ahead.

In this increasingly diverse media marketplace, broadcasters have strong opportunities for growth as well as for specialisation in terms of content or technology. The two opportunities are related, for as the media marketplace fragments — reducing the ability of broadcasters to offer a mass audience — it also opens new market niches. The challenge of the next few years will be to place the rights bets on both technology and content in order to reap the potential gains.

The World Teleport Association will alternate with the Asia-Pacific Broadcasting Union and CASBAA to appear in every other issue of APB, highlighting various association news to the industry.

6 Increased media security: The music business failed to understand or react in time to the opportunity and threat posed by the World Wide Web. First ignoring exploding demand for online distribution of music, the industry was then hit by online piracy of its copyrighted content. Video and film content owners are determined not to suffer the same fate, and

cently introduced a DOCSIS 3.0 chipset for STBs that delivers interactive services and up to 120Mbps downstream data rates which the company hopes will power the conversion of traditional cable-TV systems to IPTV standards.

8 New content demand: In terms of content, the two hottest areas in TV will be HDTV and narrowcasting. The original deployment of digital into the broadcast infrastructure delivered superior picture quality that made consumers happy. But with ever-rising rates of compression, consumers are beginning to express dissatisfaction with picture resolution, pixelisation and other digital artifacts. This fact, and the dropping price of flat-panel, high-resolution displays, will cre-



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