



Howard Greenfield, principal of Go Associates Consulting Partners, asks what will be the next killer application to shake up the industry.

Killer on the loose



Howard Greenfield: 'Where there is great confusion, there is great opportunity'

THESE DAYS IT IS IMPORTANT TO STAY ON TOP OF the digital culture because it affects our daily lives and, in many cases, our careers. Although the future of video, film and music is undoubtedly digital, there is great confusion over how it will be delivered and who will be in control. But as the proverb says, 'where there is great confusion, there is great opportunity'. Will some new killer application emerge from the battle for home access to reshape the industry and revive the weakened high-tech economy? Consider for a moment what the new delivery device for media might be:

- Computer
- TV
- Mobile, home/cinema entertainment centre devices
- All of the above

The latter is clearly the safe choice. However, TV is a 'lean back' experience, while with the PC we lean forward and interact. So what can we conclude from all this? According to former Intel chief Andy Grove, it is about broadband: 'The entire entertainment industry will be digitally distributed over broadband networks. Media companies are going to tip over, because one of them, with its back to the wall, will make the transition, and the others will have to follow.' It is hard to predict the precise outcome of all this leaning and tipping, but one thing we do know is it that will greatly influence broadband and broadcast programming content.

A bizarre scenario

Two key content questions arise from this media feeding frenzy: 'who controls the programming?' and 'how do you make money from it?' *Newmark v Hollywood* offers a classic – albeit bizarre – example of the search for clarification. Craig Newmark, founder of the San Francisco Bay Area bulletin board 'Craig's List', and four other plaintiffs, including the Electronic Frontier Foundation (EFF), filed a federal lawsuit against Disney, Viacom, AOL Time Warner and other media giants to win assurances that it is legal to 'time-shift' (skip television commercials) using their SonicBlue ReplayTV (digital video recorder) devices. The plaintiffs have been disputing media executives' claims that the devices should not be used to skip commercials. Newmark explains his motivation: 'I noticed that the Hollywood lawyers had successfully conspired to force ReplayTV to spy on its customers. That was overturned very quickly, but frankly, it

really pissed me off.' So, he decided to get involved in the litigation: '[EFF] warned me that if the bad guys won I would have a big problem, but I figure there's a lot of people in this world that stick their neck out a lot further than I do – you know, it's not as if any secret police are going to pick me up – so I joined the suit.' The controversy was recently defused when D&M, the company that has acquired ReplayTV, backed off and announced that it would remove the 'commercial advance' features from the next product release.

This shows the digital Wild West at its most colourful – but with serious traditional consumer and content rights at stake. As the plot thickens, it reads more and more like fiction, or an elaborate screenplay, only we have to wait in real time to see how the drama ends – no time-shifting permitted.



Broadband applications are gaining ground in consumer markets

Ask the experts

So who will gain overall control? Courtrooms and content clashes and the fate of the market aside, influence is probably evenly divided between three industries: broadcast, software and telecoms.

So what trends do the experts in these industries see emerging in the immediate future? Chris Daubney, chairman of the UK's Royal Television Society's technology committee, has an extensive broadcast track record. Having started his career at the BBC, he has been managing director of Panasonic Broadcast Europe, chief engineer at Channel Four Television in the UK and also served a tenure with the original UK regulator, the Independent Broadcasting Authority.

'So far, radio listeners and TV viewers have had to choose from the offerings of the available channels, but with each channel pre-ordained by broadcasters,' observes Daubney. 'The audience has no say in which programmes appear on each channel. CDs and pre-recorded videos allow them more choice, but they have to go out shopping.



'Content on demand, delivered via broadband, could change all that. From their homes, viewers may one day be able to access an individually tailored version of virtually any piece of video and/or audio, essentially when they want it. Broadband could add a two-way, essentially unlimited system to the one-way, limited content supply system, but will we want to pay for it?'

For the software industry perspective, we turn to media streaming guru Satish Menon, CTO and co-founder of Kasenna, and a founding board member of the Internet Streaming Media Alliance (ISMA). He has the historic credit of director of engineering of the software technology group at SGI, where he managed media-server development, and was a leading participant in the landmark Full Service Network iTV trials conducted by Time Warner.

'Telephone companies have invented the next generation of DSL, known as VDSL,' explains Menon. 'This is capable of bringing multimedia content at a rate of 6Mbps and above to homes near a central exchange. When their financial health improves, they will be able to perform a network upgrade. On the equipment side, Moore's Law (capacities doubling every 18 months or so) will continue to keep the costs of servers and STBs down.'

'Imagine being able to browse, watch or listen to any movie ever made or any music ever composed through your TV set. Imagine being able to attend a computer theory seminar by Edsger Dijkstra, watch the first heart transplant being performed by Dr Christian Barnard or listen in to the Dalai Lama's address at the UN Millennium Peace Summit. The possibilities are endless. It is real. And it is coming to the TV screen in your living room.'

Turning our attention to the telecoms sector, Jonathan Wing is a key broadband strategy manager at BT Broadcast Services (BT plc), where his technical focus is satellite communication systems. He was also chairman of BT's Intelsat Planning Committee from 1997 to 2000. According to Wing: 'Service providers around the world are looking for the killer application to drive broadband usage and provide a much-needed economic boost to the industry. In truth, there is no Holy Grail. Instead, we are likely see a gradual evolution of broadband applications over a period of time, until it eventually becomes part of our daily lives.'

'Much of the drive for broadband will come from consumers' desire to download content. However, terrestrial networks will initially struggle to convey large volumes of video-rich content on a unicast, on-demand basis. Networks will have to evolve to provide quality of service (QoS) levels that will guarantee the integrity of the download. Multicast, edge caching and plunging storage costs will all help pave the way for affordable 200GB consumer caching devices and in turn near video on demand (NVOD). The overall trend will be towards home gateway devices, which will provide edge storage and interface control to every conceivable multimedia device – TV, hi-fi, DVD and video players, home computers, home security, even electrical appliances.'

A very valuable blunder

As telecoms, broadcast and software giants jostle for position, and entrepreneurs push ahead with or without venture capital funding,



Viewers will soon expect to interact with programs like this prototype from the American Film Institute enhanced-TV workshop

innovation is being replaced by greater risk. But the hunting is still good. It is the passion and ingenuity of today's explorers that will influence the course of events – combined with the deep pockets of the larger players and the caprices of the marketplace, of course.

It is interesting to recall Alexander Graham Bell's 'very valuable blunder', which resulted in the invention of the telephone. Studying at the University of London in the 1860s, Bell, due to his inability to read German, misread a leading physicist as saying that sound could be carried over a wire. This was a completely erroneous translation, but it inspired him to carry on the experiments that resulted in the famous patent #174,465 in 1876. Western Telegraph, the dominant industry player of the time, hired Thomas Edison to invent a competing technology, but Bell's killer was out of the bottle, and the Bell Telephone Company (later AT&T) won the day.

Love or hate the killer application, but ignore it at your peril – because it is the spike in the graph, refuting conventional wisdom, that ultimately wins. In these dark days of spending cuts and conservative corporate behaviour, watch out for the killer applications. They are coming, and they will reverse accepted models and comfortable assumptions every time. ■

Author

Howard Greenfield is principal of Go Associates Consulting Partners and has played a key leadership role in numerous enterprises, including Fortune 1000 companies and leading businesses in Silicon Valley and Europe. A strategic development expert and innovator in technology product marketing, he has worked for organisations such as Apple Computer, Sun Microsystems, Informix Software and served as VP of product marketing at Softface and VP product development at Obvious Technology, a provider of solutions for media and digital asset management. He is a frequent contributor to leading industry publications. For further information, email howard@go-associates.com or visit www.go-associates.com.