3D is here to stay - this time around

New consumer technologies usually have a longer gestation period than is often realised. Given this long history of false starts, any cynicism surrounding the current 3D revival might be forgiven. However, DAVID MERCER, Principal Analyst at Strategy Analytics, explains why 3D really does seem to be here for good this time.

Apple may have made a commercial success of the iPod and iPhone, but the core technologies used in those devices had been around for many years. The consumer CD player was launched in 1982 but the laser technologies on which it was based had been in development for a decade or more. The origins of current generation HDTV, which has only reached mass market status in the last few years, go back to the 1970s.

The recent revival of interest in 3D television and video reflects an even longer development cycle than these recent success stories. In fact, there is an argument that the development of 3D motion pictures began more than hundred years ago, when pioneers such as William Freese-Greene and Frederick Eugene Ives filed early patents for 3D movies and cameras. The first commercial 3D feature film was Nat Deverich's 5-reel melodrama *Power of Love*, shown at the Ambassador Hotel Theater, Los Angeles, on 27 September 1922.

Several other 3D productions followed over the next decades, culminating in a mini-boom in the 1950s, when 45 films were produced between 1951 and 1955. It's no coincidence that this was also the time when television was taking off in a big way in the US; movie theatre owners and distributors were determined to see off any threat from the box in the corner by offering experiences which could not be replicated for home-based viewers. Unfortunately cinema-goers nearly fifty years ago voted with their feet by demonstrating a clear preference for 2D and 3D technology returned, tail between legs, to its lengthy development phase. While a steady trickle of 3D releases continued, few if any could be described as technical or commercial successes.

Television has also made various forays into 3D over the years, none of which made a huge impact. Early approaches depended on anaglyph (red/green) technology, which produces mediocre results at best. Even as late as 2009 UK broadcaster Channel Four was promoting a week of occasional 3D programming using this approach. The results, at least for the author, were far from impressive.

Given this long history of false starts, any cynicism surrounding the current 3D revival might be forgiven. But as recent box office figures appear to have demonstrated, it looks as though things really will be different this time around. In the last three or four years a steadily building wave of new 3D releases, many of which have been blockbuster titles, culminated in late 2009 with James Cameron's *Avatar*, which has so far grossed more than $2bn worldwide to become the most successful box office movie in history.

Hollywood studios will continue to drive 3D cinema during 2010 and beyond with a steady flow of new releases. Apart from the obvious advantage of higher ticket prices, the less-often mentioned benefit of improved security is also a key factor in the push to 3D. Content owners like the fact that pirates find it much more difficult to capture a 3D movie than its 2D equivalent, and hope that this will offer another useful weapon in the never-ending war on unauthorised distribution.

So, 3D really does seem to be here for good this time, at least in the cinema market. But, as movie studios realise, that alone will not be sufficient to warrant their many of their 3D investments. While early 3D releases (at least in the modern era) will continue to generate significant attention, there is a danger that the novelty factor will begin to wear off as 3D becomes more widespread. At the moment many movie theatres are only able to show one 3D movie at the same time, if at all, so that the distribution opportunity is limited. As capacity increases more 3D films will be competing for the same eyeballs and wallets, inevitably reducing the per-movie financial impact over time.

In fact, the long term relative decline of theatrical distribution has been reversed in recent years. According to Strategy Analytics research, the box office share of global filmed entertainment revenues rose from 28% in 2006 to 32% in 2009. The impact of 3D will boost the share further to 35% by 2013. By contrast, global home video markets in general have reached maturity. In fact, global consumer spending on home video (packaged media retail and rental) fell by 7% between 2006 and 2009. In spite of the growth of Blu-ray, we expect the share of traditional home video (excluding online) to continue to fall, reaching 54% by 2013.

There are many debates in the industry regarding the precise incremental cost of producing 3D relative to a 2D film. It's unlikely a precise number can, or even should, be agreed, since every case is different, but estimates range from 15 to 50%. Certainly, there are additional technical production costs, not least in the cost of 3D cameras and rigs, as well as the various workflow elements, most of which are relatively new to the market. These costs will clearly fall as the technology matures, but it's unclear yet how much of a "creative premium" will remain for 3D production. Content producers are still very much learning the 3D language and will no doubt want to push it to its limits as they become more experienced.

In spite of the revenues revival at the box office, studios will still look to the home market for additional 3D revenue streams order to help pay back the additional 3D investment. Content owners might hope that

First European-produced 3D BD title (by Imagion)

they can still sell 2D versions of films which have been successful in 3D at the cinema. But their ideal solution is clearly to sell 3D equivalents to the home market, which would also, it is assumed, attract price premiums. But, to get to that stage a number of pieces of the home 3D jigsaw need to be put in place.

None of these home 3D elements is particularly more important than any other: we are talking about creating almost a whole new industry value chain, since very little of what has been sold and targeted at the domestic market to date has been developed with 3D in mind. Some elements are backwards-compatible with 3D delivery.

The clearest example of this is the pay TV sector, which has been upgrading its delivery systems to HD for some years. In some, perhaps many, cases, the more recent set-top boxes usually deployed by pay TV providers are compatible with, or upgradeable to, 3D broadcasts. BSkyB has been most aggressive in pioneering this approach, although it is being followed by other major pay TV operators around the world. This is the main reason we are seeing a wave of announcements from broadcasters about plans for 3D channels and services. BSkyB is already "on the air" with 3DTV in the UK. While the service is currently targeted at out-of-home viewers in pubs and clubs, trial transmissions are available to home viewers, and the full home service will be launched later in 2010.

Another sector worth mentioning is games. Many video and PC games are inherently 3D in their design and are therefore well suited to rendition on 3D TVs and monitors. In fact, true 3D games have been available in the PC sector for some time, to gamers serious enough to invest in the right combination of graphics card, 3D-capable monitor and glasses. 3D gaming on consoles is also beginning to arrive. Sony has been software-upgrading PS3 devices already in the field with 3D capability in recent weeks. Microsoft also claims that a handful of titles are currently available in 3D for the Xbox 360.

The PS3 in fact may be a critical early driver of demand for 3D content. More than 34 million PS3s have been sold to date around the world, creating a ready-made installed base of 3D-compatible devices. Sony will also begin up-grading these devices for 3D Blu-ray capability during the coming months. If the process goes well (and these things can never be guaranteed) this should create a global population of tens of millions of homes with the ability to play 3D Blu-ray movies and other video titles.

Panasonic, Sony, Samsung and other manufacturers are also beginning to market 3D Blu-ray players. These are inevitably priced at the premium end of the Blu-ray market in the early days, but we expect prices to fall steadily. Strategy Analytics projects that 10% of global Blu-ray Disc player sales in 2010 will be 3D-ready, including those which are upgradeable via software download.

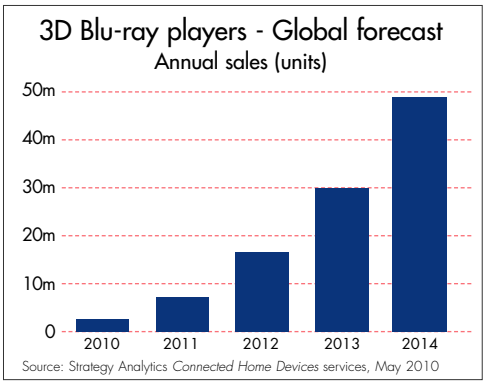
The other critical component in the home 3D system is, of course, the TV display, and 3D-ready TVs are now coming onto the market from most major CE brands. This is not the moment to go into depth on the various approaches to 3D display technology, but the main point is that questions over compatibility with various source devices have largely been resolved. As far as we can tell at this stage (and inevitably there may be teething problems with certain device and software combinations), 3D content from a set-top box, Blu-ray player or games console should be successfully displayed on any of the new generation of 3DTVs, whether they use plasma or LCD, and whether passive or active shutter glasses are required.

Bundling will be a key strategy to drive early sales of 3D BD players, both in terms of TVs and content. Retailers such as John Lewis in the UK are already offering packages of 3DTVs with 3D Blu-ray players. Samsung is bundling sales of the *Monsters v. Aliens* 3D BD with its BD-C6900 3D BD player as a 3D "starter kit". When two pairs of active shutter glasses are included, this bundle retails at nearly £500 at retailer Currys, which seems an expensive way to watch one movie in 3D.

If Hollywood really is serious about home 3D it needs to start ramping up the release of 3D Blu-ray movies. A few more are planned for the coming months, including *Cloudy With a Chance of Meatballs*, *Monster House*, and *Open Season*. Other titles may appear in player bundles initially before becoming available for separate purchase. But major 3D hits such as *Avatar* and *Alice in Wonderland* are unlikely to be released on 3D BD until 2011. This illustrates the main challenge for any new content platform: creating enough content to persuade buyers that the format is here to stay, and offers choice and variety to suit all tastes. This will inevitably take time, given that the number of new movies created in 3D each year is still limited.

Partly for this reason we believe that 3D broadcasting may play just as important a role in kickstarting the home 3D market. Ambitious plans for live 3D sports coverage at BSkyB, ESPN and elsewhere suggest that pay TV companies see 3D as an important vehicle for customer growth and retention. Free-to-air 3D broadcasting will also play a role: TF1 in France will broadcast five World Cup football games in 3D this summer. Even with just a handful of 3D events or weekly programmes, broadcasters will soon be offering a wider range of 3D content than is available on BD.

One possible spanner in the works of the 3D content industry is format conversion. There is enough debate amongst content producers over the relative merits of original 3D production and 2D conversion. But there should be greater concern about in-set conversion chips which some manufacturers are including in 3DTVs. While these processors cannot produce the same quality and experience as the best original 3D productions, their performance is reasonably good, depending on the type of content being viewed. As the power of these technologies continues to improve, some viewers may decide to forgo paying for 3D-originated content in favour of flicking a switch on their TV set to get a similar effect.



The outcome to these and many other questions will not become clear for some time. In spite of its long history, the 3D industry in many ways is in its infancy, and many technology and business model issues still remain. Nevertheless, 3D now seems unlikely to go away, and many opportunities exist for players across the value chain to exploit the potential and appeal of this long-emerging technology.

BIOGRAPHY

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