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The 3D Revolution Is Coming

Melissa J. Perenson, PC World

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3D is back. And this time, it's making a big statement. The concept isn't new, of course--the first 3D motion picture dates back to the turn of the twentieth century. But a growing string of recent Hollywood releases, cemented by the runaway success of *Avatar*, has returned 3D to our cultural consciousness.

For the first time, though, 3D is being positioned not just for theatrical and professional venues but also for homes. Few observers expect this sea change to happen overnight--but it is coming.

The consumer electronics industry has been putting the elements for a **3D revolution** into place surprisingly quickly. Every major manufacturer has **revealed its 3D plans** for 2010, with most companies setting a summer launch for their **3D-enabled televisions**. Summer will also see 3D-enabled Blu-ray players. For filmmakers, a **3D camera** will arrive in the fall: Panasonic's \$21,000, professional-grade Full HD camcorder will be able to record video from each of its twin lenses to SDHC cards.

Broadcasters are getting into the act, too. BSkyB is among the **networks working on 3D channels**. ESPN's channel, launching in June, will show 85 sporting events in 3D. And Sony is partnering with Discovery and Imax to have a 3D channel by 2011.

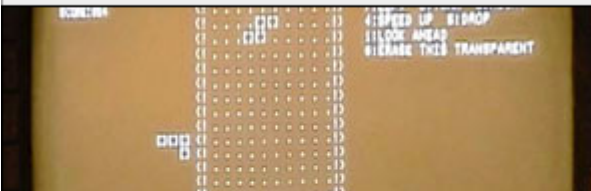
Film content is already available, and will be growing thanks to the *Avatar* effect. Last year 17 3D films came out; more than a dozen such titles are scheduled for 2010. And 2011 will likely be a banner year for 3D movies as Hollywood rushes to replicate *Avatar*'s success.

3D's Growing Appeal

Since 3D theatrical releases routinely earn more revenue than their 2D counterparts, it's no shock that Hollywood and the consumer electronics industry are eager to bring 3D into the home. And the focus isn't just on movies: 80 percent of **PC games** are currently available in 3D.

"Consumers are willing to pay more money to watch a movie in 3D than to watch it in 2D," notes Jennifer Colegrove, director of display technologies at DisplaySearch, citing 3D's immersiveness. "So [manufacturers] are naturally thinking about 3D for the home--on a computer, a notebook, a TV, a mobile phone."

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Research into what consumers want has begun in earnest. Sony is partnering with CBS to study what audiences expect from home 3D. Last year the Consumer Electronics Association and the Entertainment Technology Center released a study in which 50 percent of surveyed consumers said they would pay more for a 3D TV; 40 percent of the respondents preferred 3D to 2D.

We don't know how much companies will charge for 3D TVs (or content). Clearly, 3D represents a new revenue stream, and consumer electronics makers will put some premium on it (simply because they'll have 3D on their top-tier products). But industry executives have told me that they are aware of the risk of stifling 3D's prospects if they price it into the stratosphere.

Another factor that might hold back 3D's potential is the "dorky" image of 3D glasses. Special glasses are a requirement for all variations of the [active-shutter technology](#) that television makers are using. RealD is providing glass technology to a number of TV manufacturers, but the eyepiece design may vary dramatically. Right now, there's no guarantee that glasses will be compatible across manufacturers (though the Consumer Electronics Association is trying to get companies to agree on this point). The glasses won't be cheap, either--and 3D-enabled TVs may not ship with them by default. So far, only Sony's top-of-line Bravia LX900 HDTV will come packaged with two pairs of glasses.

Few experts see 3D claiming a big chunk of the market. According to DisplaySearch, just over 1 million 3D-ready TVs will ship in 2010 (representing 0.1 percent of total shipments); by 2018, the number will be 64 million (20 percent of the market). That's less than the CEA's estimate of 4.3 million 3D-capable TV sets shipping in 2010. DisplaySearch expects 3D-ready monitors to grow to 10 million by 2018 (3.6 percent penetration), and it foresees a similar trajectory for 3D laptop systems. Mobile phones will be the largest 3D-display shipment by 2018, with 71 million units, DisplaySearch predicts.

The challenge will be to get hardware into homes. "It's about presenting enough of a compelling story to get people excited about buying new equipment," says Rick Dean, chairman of the 3D@Home Consortium and VP of strategic development for THX. "New Blu-ray players are required. New displays are required. But it's not just about how we're going to deliver 3D content; it's about the user experience."

Not Just New Movies

Blu-ray Disc will play a big role in the 3D revolution. In December, the Blu-ray Disc Association [finalized its spec for Blu-ray MVC](#), a 3D "multiview" codec extension to the existing AVC H.264. Though Blu-ray players seem to have dropped enough in price to start replacing DVD players by default, the arrival of 3D models could extend the disc format's relevance.

Hollywood studios have been a bit quiet about their 3D Blu-ray plans, but a few deals have been announced. Disney says it will have a 3D version of A Christmas Carol out by the fourth quarter of

2010. And DreamWorks and Samsung have announced a deal with Technicolor to replicate content in 3D.

Blu-ray Disc Association president Andy Parsons notes that not everything will get the 3D treatment. He says that he expects 2D to coexist with 3D. "We're positioning 3D not as a replacement for but a complement to 2D," he says.

While Parsons expects studios to search their archives for classics that they can transcode as 3D, the conversion may not be possible across the board. "It remains to be seen if a way can be found to convert 2D content into 3D in a way that comes close to what's being done in the theaters today."

Big-Name 3D HDTVs and Disc Players Coming Soon

The following 3D products are headed to stores this year. Companies haven't set pricing, and some have yet to discuss plans for bundling glasses.

Due in Summer 2010

Panasonic

- Viera TC-P50VT20 and Viera TC-P50VT25 (50 inches)
- Viera TC-P54VT25 (54 inches)
- Viera TC-P58VT25 (58 inches)
- Viera TC-P65VT25 (65 inches)
- DMP-BDT350 Blu-ray player

Sony

- Bravia XBR-LX900 series (40, 46, 52, and 60 inches)
- Bravia XBR-HX900 series (46 and 52 inches)
- Bravia HX800 series (40, 46, and 55 inches)
- BDP-S770 Blu-ray player
- BDV-HZ970W home theater unit
- PlayStation 3 (firmware upgrade)

Release Date Unannounced

LG

- Infinia LE9500 (47 and 55 inches)

Samsung

- UNxxC9000, UNxxC800, UNxxC700, and PNxxC7000 (TV sizes not yet announced)
- BD-C6900 Blu-ray player