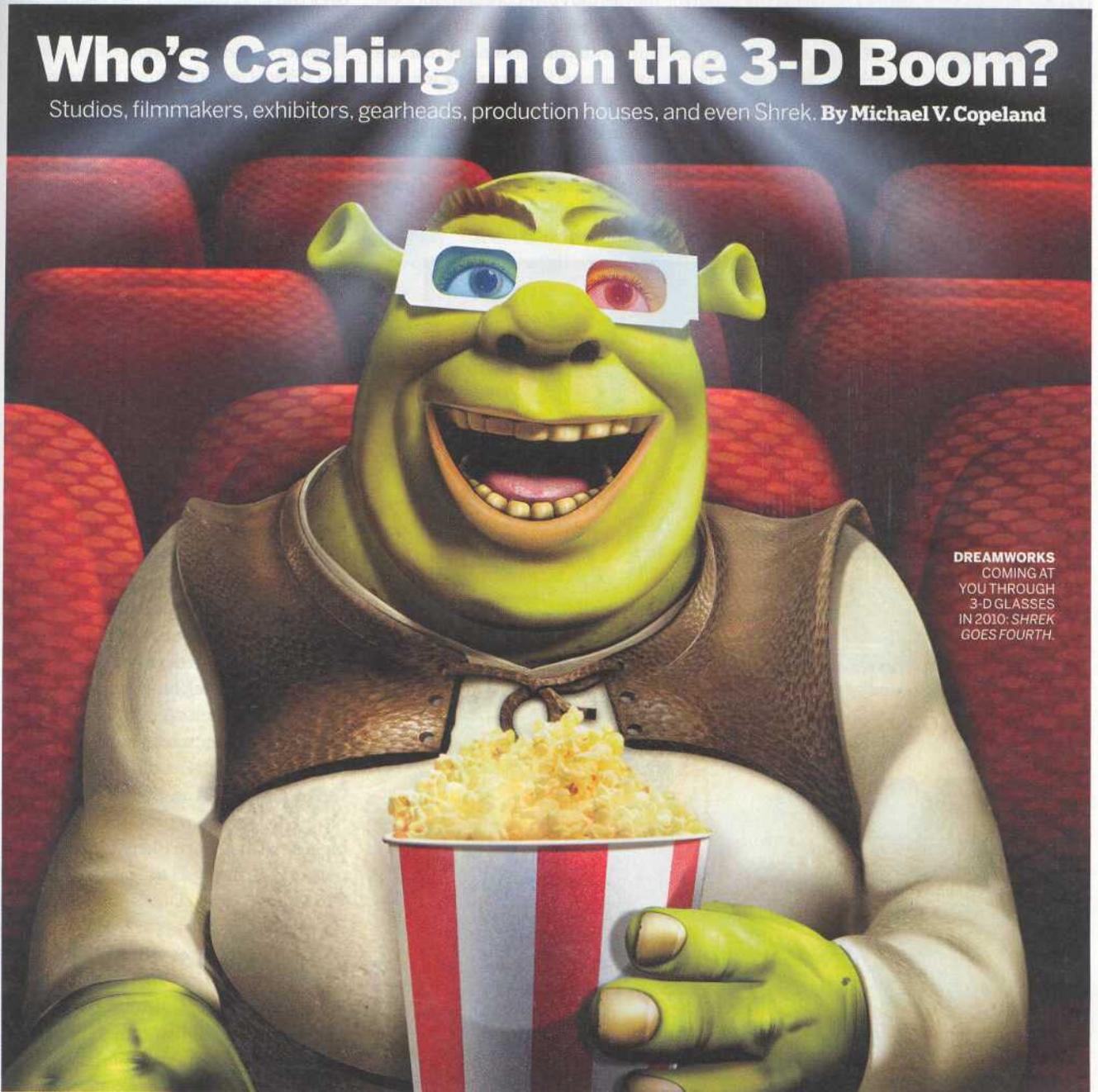


TECHNOLOGY

DISCOVER. DECIPHER. DISRUPT.

Who's Cashing In on the 3-D Boom?

Studios, filmmakers, exhibitors, gearheads, production houses, and even Shrek. **By Michael V. Copeland**



DREAMWORKS
COMING AT
YOU THROUGH
3-D GLASSES
IN 2010: SHREK
GOES FOURTH.

TECHNOLOGY

UNLESS THEY happened to have adolescent daughters, it's unlikely that many Hollywood executives donned funny glasses the first weekend in February to catch the film debut—in glorious 3-D—of Disney's tween TV and pop star Miley Cyrus, better known to fans as Hannah Montana. But come Monday, there were high-level meetings all over town to deal with its impact. *Hannah Montana & Miley Cyrus: Best of Both Worlds Concert Tour* opened small, on only 683 screens. But thanks to packed theaters and premium ticket prices (\$15 to \$24 each),

it booked \$31 million. That's \$45,000 per screen—a Hollywood record.

It was like firing a starter pistol. Three-dimensional film—a 50-year-old fad that has gussied up more than its share of bad horror movies and soft-core skin flicks—looks like a gimmick whose time may have come. This may be the technology that studio executives have been praying for, one that will finally persuade theater chains to upgrade to digital technology and lure Americans back to the cineplex.

Every major studio now has 3-D proj-

HOLLYWOOD
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ects in the works. You might have missed the 3-D versions of *Chicken Little* and *Polar Express*. But it will be hard to ignore the publicity for the next 3-D wave. No fewer

than 20 movies are slated for 3-D release over the next two years, including high-budget productions by the likes of James (Titanic) Cameron, Steven (ET) Spielberg, and Peter (Lord of the Rings) Jackson. "Six months ago none of the studios would talk to us," says Sandy Climan, CEO of 3Ality Digital, one of the 3-D production houses suddenly in high demand. "Now they all want to talk."

Who else stands to make money from the coming 3-D boom? We surveyed the field and found some eye-popping prospects.

THE STUDIOS

Deploying the new 3-D technology in Hollywood, explains Chuck Viane, head of distribution at Disney, is a chicken-and-egg proposition: Which comes first, the 3-D movies or the theaters equipped to show them? The initiative this time is clearly coming from the content producers—the studios that have to pony up the extra \$15 million or more it costs to make a 3-D film—and so far their investments seem to be paying off. When Disney released *Meet the Robinsons* last year, the 3-D version generated nearly three times as much business per screen as the 2-D. Paramount's *Beowulf* easily grossed twice as much per screen in 3-D.

Lionsgate, 20th Century Fox, New Line Cinema, Summit, and Focus Features all have 3-D movies in production. But the biggest winners are likely to be the studios that pushed 3-D the hardest: Disney and DreamWorks. DreamWorks Animation announced last year that starting in 2009 all its pictures will be shot in 3-D, including *Shrek Goes Fourth*. CEO Jeffrey Katzenberg, meanwhile, has been telling anybody who will listen that digital 3-D is "the single most revolutionary change since color pictures."



REAL D 97% OF THE DIGITAL
3-D THEATERS IN THE U.S.
USE CEO MICHAEL LEWIS'S
HARDWARE AND SOFTWARE.

PACE TECHNOLOGIES
FOUNDER VINCE PACE'S
CAMERAS DOMINATE
THE DIGITAL 3-D MARKET.

THE FILMMAKERS

It's a wise director who makes the movies the studios want to fund, and Katzenberg has been especially energetic in his efforts to convert what he calls the tech-savvy "alpha members of our herd."

Some of them didn't need converting. James Cameron has been working with digital 3-D for seven years and is now wrapping up a big-budget sci-fi thriller called *Avatar*. Peter Jackson and Steven Spielberg are teaming up on a trio of 3-D Tintin films. George Lucas wants to give all six of his Star Wars films the 3-D treatment, and Robert Zemeckis says he's working only in 3-D going forward, starting with a 2009 remake of *A Christmas Carol*.

But the first big 3-D feature out of the gate this year will be Eric Brevig's *Journey to the Center of the Earth 3-D*, which was prescreened last month in Las Vegas. Brevig can't get over the way the audience reacted. "I have some very simple thrills in my movie—a school of piranhas suddenly flying from the water, for example—and people literally leaped from their seats."

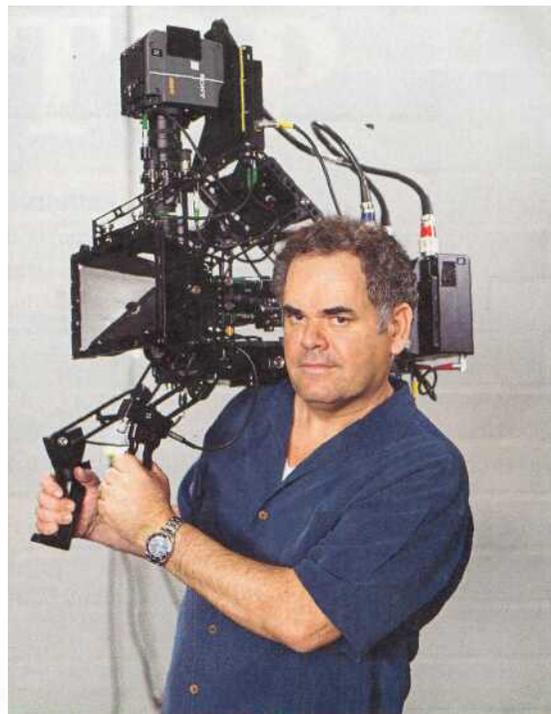
THE EXHIBITORS

Theater owners have been reluctant to spend the \$75,000 it costs to convert an analog theater to digital, never mind the extra \$25,000 or so it costs to make it 3-D. Today only 4,600 of the 37,000 U.S. movie screens are digital, and only 1,030 of those

are 3-D-ready. But 3-D, with its new tween cachet and higher ticket prices, has sweetened the deal for theater chains, according to Mike Campbell, CEO of Regal Entertainment, the nation's largest. Another sweetener is the \$1.1 billion financing plan that Regal, along with No. 2 chain Cinemark and No. 3 AMC, is trying to arrange to help pay for the new digital technology. "Once that happens it will be pedal to the metal for 3-D," says Barton Crockett, an equity analyst with J.P. Morgan. He estimates that 3-D could someday represent as much as one-fifth of box office receipts, adding \$300 million to \$400 million a year to studios' and theaters' bottom line.

THE PRODUCTION HOUSES

Shooting 3-D films used to be a nightmare; you needed a pair of perfectly synced cameras for every scene. Shooting digital 3-D is easier, but you still need a two-camera setup that captures images fast enough to play back at 144 frames a second (rather than 24). The leader in the field is Pace Technologies, based in Burbank, Calif. Founder Vince Pace, best known for the underwater rigs



he built to shoot *Abyss* and *Titanic*, has now shifted his entire production business to 3-D. His equipment has been used to make every major 3-D feature film so far, including *Hannah Montana*, *Avatar*, and *Journey*.

Pace's main competitor is 3Ality Digital, also in Burbank. It got a piece of the action making *U2 3D*, a documentary about U2's Vertigo tour. Both firms are privately held.

THE 3-D GEARMAKERS

There are three main competing systems for projecting and viewing 3-D movies, but Beverly Hills-based (and privately held)

How Those Funny Glasses Work

The principle is always the same: Create the illusion of depth by presenting a slightly different image to each eye.



1900

Photographs in early **stereoscopes** were shot with special cameras whose twin lenses were mounted an eye-width apart.



1952

The **anaglyphic** glasses popular in the 1950s had red and cyan lenses to selectively filter the left- and right-eye views.



1986

These glasses for viewing **IMAX's** 3-D films have LCD shutters that rapidly open and close, alternating between left and right eyes.



2005

The **Real D** system mounts an LCD shutter on the projector; circular polarized lenses combine the images for the viewer.



2007

Dolby replaced the shutter with a spinning color wheel; lenses tuned to those colors alternately block one eye and the other.



2007

Samsung's 3-D-ready TVs are wirelessly synced to **DDD** TriDef glasses with LCD shutters that flip from one view to another.

TECHNOLOGY

Real D—with a 97% share of the domestic market—has a commanding lead. It makes the software to calibrate the images, an LCD-based shutter attachment, and polarized glasses that fuse the two images. The newest entry comes from Dolby Labs, maker of those high-end cinema sound systems. Dolby's 3-D technology is based on a spinning color wheel and color-filtering glasses. Unlike Real D, it doesn't require a special screen, which has helped it get a foothold in a handful of theaters since it was unveiled last year.

The other player to watch in 3-D technology is Toronto-based IMAX, which has been distributing 3-D films on its network of jumbo-sized screens since 1986. IMAX still relies on film-based projection for its

3-D but will move to a digital system next year.

BRINGING IT HOME

It won't be too long before the new 3-D movies come home in DVD and Blu-ray, and the big electronics makers are prepared. Samsung already sells a 42-inch plasma TV with a "3-D-ready" label for \$1,199 at Best Buy, and Mitsubishi and Philips are close behind. Meanwhile, DDD Group makes the \$199 TriDef glasses needed to see 3-D on Samsung's new screens.

To experience the full three-dimensional sensation, however, you'll still want to go to a big theater, where the split between left- and right-eye images is wider and the feel-

A SCHOOL OF
PIRANHAS SWIM-
MING AT THEM
HAD VIEWERS
LEAPING FROM
THEIR SEATS.

ing of depth more intense. The effect, even for moviegoers outside the Hannah Montana demographic, can be mesmerizing. Vince

Pace remembers setting up a mobile trailer in Las Vegas last year to film and screen the NBA All-Star Game in 3-D for a private party hosted by commissioner David Stern. The show kicked off after the game ended. "We figured the guests might come in, watch for a few minutes, and go on to the party," Pace says. They didn't. Though most had just seen the game live, they watched it all over again in 3-D.

That's the kind of reaction Hollywood is banking on.

PERIPHERALS

Beyond Qwerty

THE FANCIEST KEYBOARD on the market today is the **Optimus Maximus**, a fully programmable peripheral with an LED beneath each key that changes depending on the context. Want to create mathematical formulas? Or type in Russian? Or in Zapf Dingbats? The displays on the keys respond on the fly.



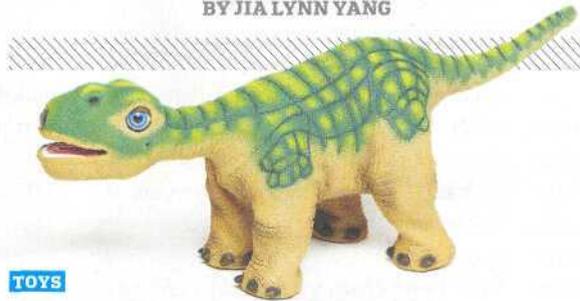
WEBSITES Wikileaks.org

IT SURVIVED a threatened shutdown; now the muckraking activity is picking up again at Wikileaks, the year-old site that allows whistleblowers to publish sensitive documents anonymously on the web. In March, Wikileaks posted more than 120 censored photos and videos of Tibetan protests and the Chinese crackdown.

COOL STUFF ON OUR RADAR SCREEN

Need to Know

BY JIA LYNN YANG



TOYS

Baby's New Brain

THE NICE THING about being a robot is that brain transplants are painless. With its latest update (version 1.0.2), **Pleo**, the baby dinosaur, can rouse himself from sleep if he hears a noise, explore his surroundings, and comfort himself with cooing dino songs. He's a bit sluggish afterward, but with some TLC he soon perks up.



ONLINE VIDEOS

TED, for Free

YOU COULD PAY \$6,000 to attend the annual TED conference—or watch the proceedings free online. Don't miss the hit of this year's gathering: neuro-anatomist **Jill Bolte Taylor's** amazing account of her own massive stroke.

➔ Watch more presentations at www.ted.com/talks.

SELF-PROTECTION

Stunning Ease



THE NEW RUNT stun gun delivers a jolt of up to **950,000 volts** and is rechargeable. The manu-

facturer claims you get up to 500 zaps when the battery is full. But it can take 12 hours to recharge, so make sure you keep your weapon topped off.