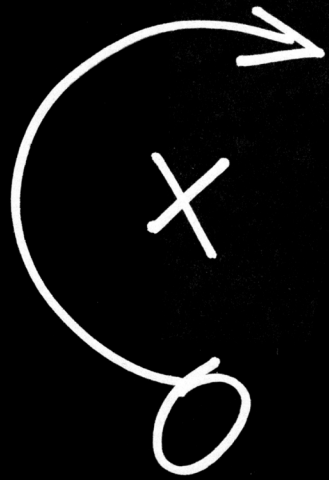
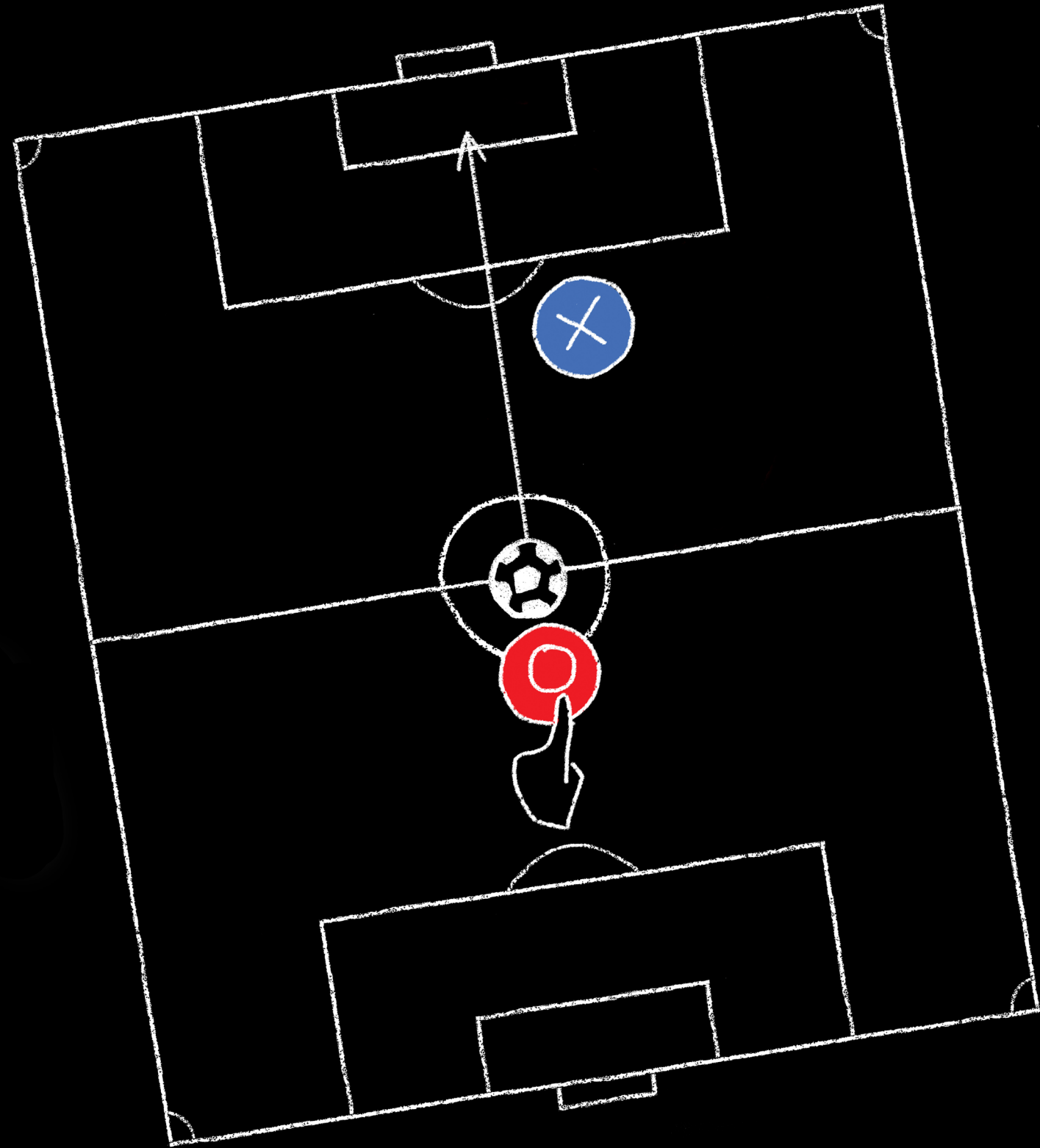
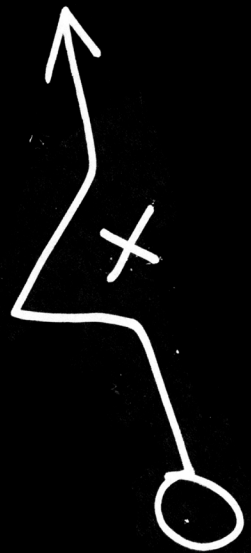
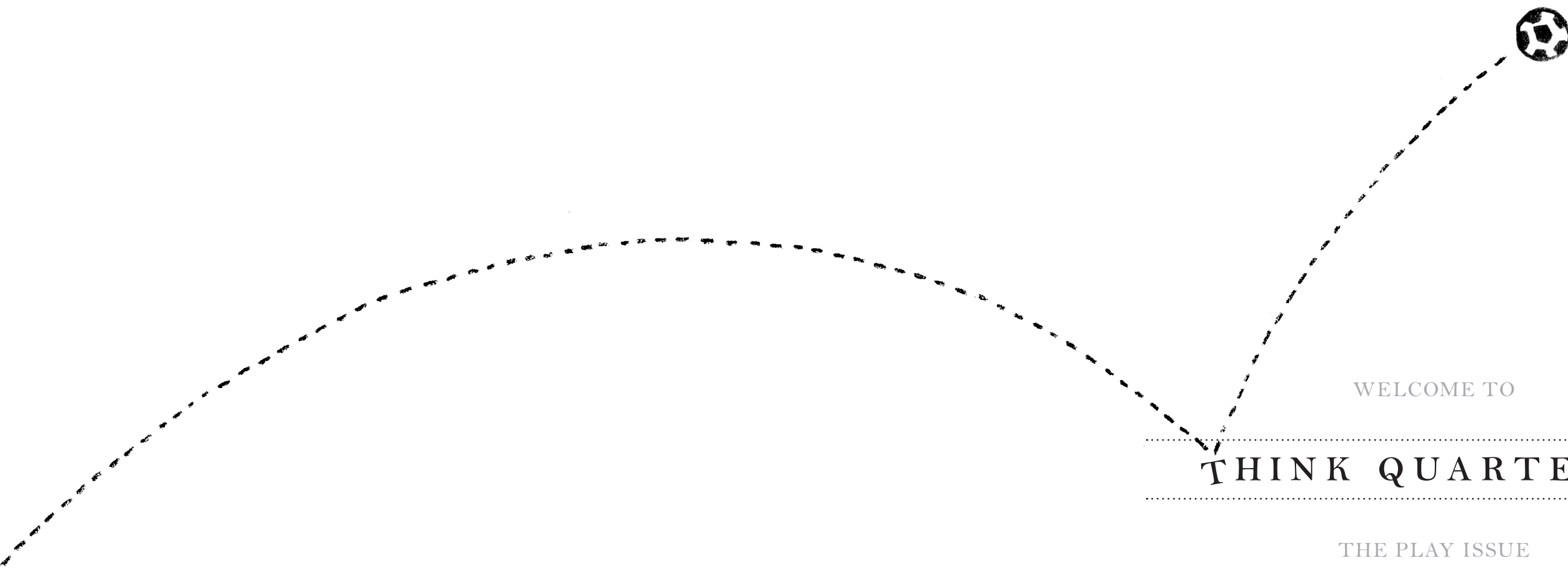


.....
THINK QUARTERLY
.....



It's X's vs O's.
Place your counters
on the board and
battle to score a goal.
First to five wins!





WELCOME TO

THINK QUARTERLY

THE PLAY ISSUE

Play.

We're serious about play. See the ever-changing 'Doodle' logos on our homepage. Read the Google Official Blog entry on April 1. Search for 'do a barrel roll.' You'll see what I mean.

The web gives us infinite ways to play – from games, to videos, to music. Entertainment is becoming more and more central to great experiences online. That's why we launched Google Play, to make it easy to find, enjoy, and share what you love. And there's a lot out there. This summer, about four billion people all over the world will be watching the ultimate games – the 2012 Olympics in London. They don't need a ticket or a television. Every single event, 2,500 hours of competition, is available online in high definition.

But it's not just technology that is evolving; attitudes towards play are changing, too. Researchers and governments are taking a greater interest in gauging happiness. Games are no longer considered a waste of time – they're a savvy business strategy. Companies use game mechanics to attract customers, from stamping loyalty cards to challenges like scavenger hunts. Even jobs are structured like games, with progressively harder challenges and greater rewards for meeting them.

In this issue, we explore the rising importance of play – on the web and in business. 'New industries start with people having fun,' writes Tim O'Reilly on page 43. With that spirit in mind, we hope you have fun reading this issue.

Margo Georgiadis

President, Americas

Google

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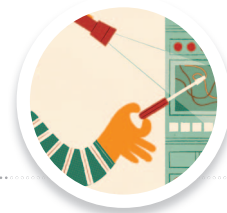


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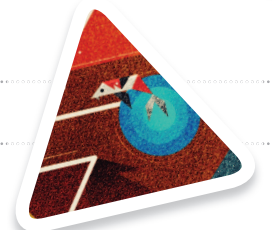
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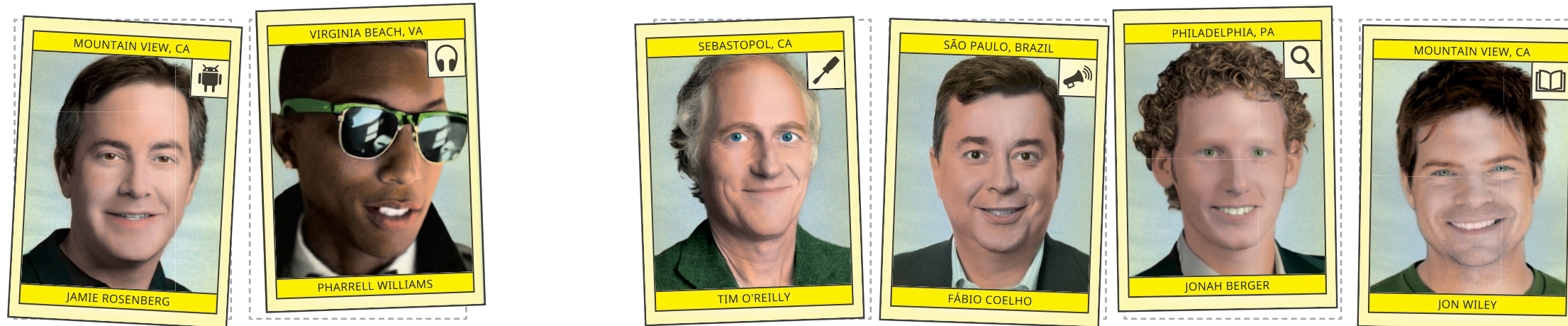
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Pharrell Williams is a multiple Grammy-award winning music producer, best-selling rapper, celebrated fashion designer, and now YouTube creative content partner. Sharing its name with his record label, i am OTHER, Pharrell's channel is an outlet for creativity, featuring original content in the form of documentaries, comedies, music shows, and more. The ultimate multimedia superstar, Pharrell shares his top 10 favorite things to play on page 26.

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*...they are the only
truly honest people
on earth... p.15*

MADS NIPPER

EXECUTIVE INSIGHT

Children are fantastic little creatures,” says Mads Nipper with a conspiratorial gleam in his eyes, “because next to drunk people, they are the only truly honest people on earth.”

The CMO of LEGO is sitting at the far end of a spartan meeting space in the company’s Billund HQ. The world’s third largest toy brand dominates this corner of Denmark, its sprawling factory complex offsetting the primary-colored theme park next door. This room is one of the few in LEGO’s inner sanctum that isn’t decked out in the bright hues of construction sets. Mads Nipper is a man in charge of a \$400m annual marketing budget, and this is where the serious work is done.

There has been much of it to do. Ten years ago, LEGO was floundering. The company was losing the fight for children’s attention, costs were soaring as product lines expanded, and complacency was setting in at a corporate level. Thinking it knew best, LEGO stopped listening to its customers.

In turn, those customers stopped buying

LEGO. As a DKK326m (\$58m) profit in 2002 slumped to a DKK1.9bn (\$339m) loss in 2004, drastic action was taken. Former McKinsey man Jørgen Vig Knudstorp was installed as CEO, and LEGO gradually drew back from the brink. Product lines were slashed and the number of moldable elements (the individual bits that make up each LEGO product, like a minifigure torso, a wheel, or the iconic brick) was reduced by half, cutting manufacturing costs. From 2006 to 2010, LEGO posted 20 percent annual growth. Profits are back at DKK3.7bn (\$660m).

The new LEGO is a hugely admired and innovative brand that has made big bets on digital. But Mads Nipper has no doubt where the focus lies. “We don’t see ourselves either as a technology company or a toy company,” he says. “We see ourselves as being in the business of play.”

Although LEGO continues to manufacture classic construction sets like LEGO City, or best-selling franchises like LEGO Star Wars and Harry Potter, Nipper is equally clear that the business of play has changed with the advent of digital technol-

ogy. “There’s no doubt that digital is revolutionizing everything we do – the way we find information, the way we communicate, the way we engage, and also the way we play,” he says. “But we still believe that even in a highly digital world, physical experiences – what we call ‘hands-on/minds-on’ experiences – are critically important. At the same time, ignoring the digital movement, just saying, ‘We’re going to be about our building bricks and nothing else,’ would be equally wrong.”

That interplay between the physical and digital worlds is the cornerstone of LEGO’s philosophy, and was visible in the marketing for 2012’s ‘big bang’ launch of LEGO Friends, the first LEGO product line aimed exclusively at girls.

The company’s strategy began with traditional consumer insights: “Where boys are about winning and losing, killing and surviving, for girls it’s much more about relationships, friendship, and nurture.” But the key question was how those insights related to the ways in which girls consume media. “We asked ourselves, How do we actually engage girls in a different way, both in our storytelling and in the way ▶

LEGO CMO Mads Nipper explains why the intelligent integration of digital and physical is the next frontier for the business of play.

WORDS BY *Matt Bochenski*

PHOTOGRAPHY BY *Jonathan Bjerg Møller*

they're interacting?" Nipper explains. The result, alongside traditional Saturday morning TV ads, was a LEGO Friends 'dress-up' app, "Which looks nothing like anything you'd have for a boys' app. But it never starts with the technology. It starts with asking, 'What does it take to make a fantastic experience? What does it take to make girls interested in this?' And that is in terms of the product, the hardware, the media landscape, the digital opportunities – how we leverage all that together."

The possibilities of cross-media integration – from search and display advertising to gaming and content creation – are currently making Mads Nipper a very excited marketer. "Sometimes we will use content as a key driver of our strategy, sometimes broadcast content and sometimes digital content only," he says. "Sometimes we use digital gaming as a centerpiece of what we do. Sometimes we could integrate paid gaming as well."

"But it's the integration across different online/offline media – TV, broadcast, whatever – that truly determines how successful any campaign or marketing effort is because any media as a standalone is typically less impactful. From an advertising perspective, it's about how intelligently we integrate digital – be it search marketing or banner ads or whatever it is – into the total campaign context, which in our case, in almost all cases, would be under the heading of a product line."

After 80 years of manufacturing (LEGO began as a wooden toy-making business in 1932), almost all of those product lines are today entrenched in people's lives. That includes online, where lego.com is visited by 20m users a month (they can play games, design models, and sign-up to LEGO's own kid-friendly social network), and offline, where there's a strong legacy interest in the brand.

That interest, a powerful driver of brand diffusion, led to one of the boldest decisions in Nipper's 20-year career at the company. LEGO has always attracted older fans, targeting them with the LEGO Technic range in the late '70s before releasing the revolutionary 'programmable brick' in the first generation of LEGO Mindstorms (a collaboration with the MIT Media Lab) in 1998.

Suddenly, LEGO began appearing in science laboratories and architecture firms. With the growth of the web and smartphone technology, it was all over YouTube, powering record-breaking Rubik's cube machines, *Star Wars* barrel organs, digital cameras, CG fashion shows and dozens of other fan-fueled inventions. LEGO had gone viral, but as an IP business, was that good or bad? Nipper decided it was great and suggested to the board that they should officially open source the brand. After all,

the original patent on the interlocking brick had expired in 1975 – the only way they were going to distinguish themselves from the competition was through pure creativity.

"We found out it was the [creative] experience in its totality that was where we should differentiate ourselves," explains Nipper, "not on this component or that technology or this brick. It was difficult because there were people both from our line management and our legal department who said, 'We can't [open source]. How's that ever going to work?' But we said, 'It's just going to be the best experience for everybody if we do it.'"

Today, LEGO innovations comprise a bewildering array of cutting-edge digital experiences. There's the 'mirror box,' an augmented-reality case that shows its own contents being assembled in real time. There's the Life of George, an app that combines real-world building with a digital play experience. There's *LEGO Universe*, a bespoke massively multiplayer online game. And there's the interactive window in the Water Tower Place store, Chicago, developed with Intel, which transforms shoppers into virtual minifigures.

These experiences, dreamed up by LEGO's in-house innovation department, often in conjunction with technology partners, have demanded a fundamental change in mindset for the marketing and production teams. "We have a certain development time: We mature a concept; we develop a product; we produce; we launch. We're not slow but we're not fast either," explains Nipper. "But applying that same mindset to digital just doesn't work; things move too fast. So we need to be much more iterative, get out with something, learn from it, adjust, move on. Sometimes we just have to accept that what we put out the first time is not to our normal quality standards. It's safe, it's good, but is it perfect from the start? Probably not – but that's just the name of the game in digital."

That iterative approach may mean more mistakes, but as we enter a new era of merging digital and physical experiences, every brand needs to take risks. "I think we are only at the very, very early stages of this and I quite honestly think that four out of five of the products we're going to see launching in the next couple of years are going to be gimmicky and therefore unsuccessful," argues Nipper. "But I have no doubt that the true next frontier in how digital can be revolutionary in our industry is by that intelligent merging."

And how will he judge the gimmicks from the truly revolutionary? "The simple definition to me of whether something is gimmicky or not is whether there's lasting play value," he replies. "The ruthless measure of how successful any concept is in our business is how many hours children play with it." 🍌



"There's no doubt that digital is revolutionizing everything we do – the way we find information, the way we communicate, the way we engage, and also the way we play."



MADS NIPPER

Unvital Statistics

What does success look like to you?
When I feel I am part of making a real and positive difference in people's lives – irrespective of whether it is one person or millions.

What do you see in the mirror?
Someone I actually like to be.

What's your signature dish?
Spaghetti with seafood and Italian tomato sauce.

What are you searching for?
To continue to develop as a person and a professional. And an electric drill I lost last year.

When was your last moment of clarity?
Last Sunday, while running.

What gets you out of bed in the morning?
My alarm clock... And a fantastic job and family I enjoy being with.

Tell us a joke...
Two guys are sitting on a barstool. One starts to insult the other one. He screams, "I slept with your mother!" The bar gets quiet as everyone listens to see what the other weasel will do. The first guys again yells, "I slept with your mother!" The other says, "Go home, dad, you're drunk."

What has been your biggest failure?
When I failed to insist enough when our company made some terrible decisions 10 years ago.

How much is enough?
When all the world's problems are solved.

If you had to stay in one place, where would it be?
Tuscany in Italy.

What do you want that you can't have?
Grandchildren.

Who is your inspiration?
Everyone who is able to handle tough situations with a positive mindset.

What is your earliest memory?
A bicycle crash as a three-year-old.

What is your greatest extravagance?
Several bottles of way too expensive red wine in my cellar.

What was your greatest mistake?
Saying 'yes' to a board position I never had a chance to sufficiently prioritize.

When were you last surprised?
Yesterday.

When did you last feel ashamed?
Last weekend, when I failed to say 'no' to my son when I should have.

Which piece of music alters your state of mind?
ACDC's *For Those About to Rock* ©

What do you want to be when you're older?
Healthy and loved.

When did you last let yourself go?
At a rock concert about a month ago.

*...turn your house
upside down looking
for a wire... p.26*

JAMIE ROSENBERG



HOW WE PLAY TODAY

Imagine a world in which you can access the media you love anytime, anywhere. Well, that world is here. With films, books, and music all migrating to the cloud, technology has turned our lives into a 24/7 playground.

WORDS BY *Jamie Rosenberg*
ILLUSTRATION BY *George Myers*



ure, there's no colony on Mars, we haven't invented faster-than-light travel, and we're still waiting for the jetpacks to arrive – but there's at least one way in which the future has exceeded all the hype: We live in an age in which boredom has been eradicated.

Each of us holds a world of limitless entertainment in the palm of our hand. Want some music to soundtrack your day? Whether it's Bach or Busta Rhymes, your phone will pluck any of your music straight out of the cloud. Feel like watching a film? Buy or rent any movie from *The Girl with the Dragon Tattoo* to *Gone with the Wind* and watch via digital streaming. Got a gaming itch? Scratch it in a supermarket checkout line with *Angry Birds* or *Draw Something*. Glance around any busy train carriage or crowded café today and you'll see small screens glowing as technology turns once idle moments into playtime.

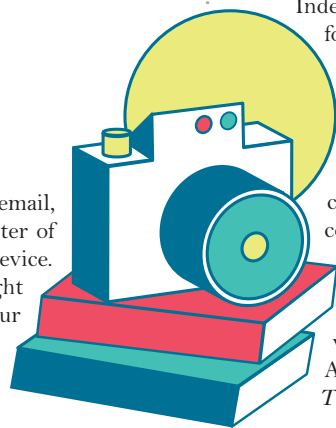
Cloud computing has brought a new twist, one that could be every bit as significant as the leap from vinyl to CD, or CD rack to hard drive. Music, books, films, and games are all moving into the cloud, while faster networks and more powerful smartphones mean that entire digital libraries are available across all our devices without actually being stored on any of them. Never again will you need to turn your house upside down looking for a wire just so you can add new music to your phone. Even waiting for downloads has become a thing

of the past as new purchases can be played immediately from cloud-powered stores. A lifetime of content is now accessible from almost any device, anytime, anywhere.

And with the cloud, the media you love follows you. You might start your day by turning on your tablet computer at the same time as your coffee maker.

“Music, books, films, and games are all moving into the cloud, while faster networks and more powerful smartphones mean that entire digital libraries are available across all our devices without actually being stored on any of them. A lifetime of content is now accessible from almost any device, anytime, anywhere.”

After checking your email, you might read a chapter of a book on the same device. On the train, you might resume reading on your phone from the same page you left off on your tablet. At the



office, you could power through the day listening to your entire music collection on a desktop computer. And on the way home, you might catch up on a TV series on the go. Once in the door, you can curl up on the sofa with your tablet, picking up the show, or your book, exactly where you left off.

Convenience is the cloud's biggest benefit, but it is also an opportunity for people to find new ways of enjoying their digital libraries. At Google Play – our service for apps, music, movies, books, and games – we've introduced 'Instant Mix,' which uses machine hearing to analyze your music in the cloud for things like mood, tempo, and instrumentation. It answers questions like, 'Is it upbeat?' 'Can I jog to it?' 'Is there a Hammond B-3 organ?' The software finds connections between songs to combine your favorites with your library's more neglected tracks. Similarly, as you educate online services about your taste, they can make increasingly personalized recommendations to introduce you to lesser-known music, movies, and books that you might enjoy.

Cloud-enabled tablets are transforming personal entertainment, with users typically spending longer enjoying media on their devices than traditional desktop browsers. According to digital video services provider Ooyala, tablet users watched one minute and 17 seconds for each minute of video viewed on a desktop late last year; a 28 percent increase. People surfing the net on tablets also spent over 50 percent more on average per purchase last year than visitors on smartphones, and outspent desktop or laptop visitors by 20 percent, according to Adobe Digital

Index. Thanks to their ergonomic form, tablets are comfortable for reading, watching videos, or playing games, and as they become both more powerful and more affordable, the speed at which they'll change our patterns of digital consumption – and our expectations of the content we consume – will only increase.

Take the enhanced eBook version of the Muhammad Ali biography *His Life and Times*, in which 'The Greatest'



actually speaks to readers, telling them how he can “float like a butterfly and sting like a bee.” It's an early illustration of how different categories of digital media are merging. Children's books in particular are pioneering this multimedia approach; and soon cookbooks will walk you through recipes with video tutorials.

At the same time, the social web is also letting us engage with media in new ways: eBook readers can share margin notes; music-lovers can DJ sets together; and friends in different cities can watch YouTube videos in a Google+ hangout. These new ways of sharing content are pushing rights holders to consider different options, such as access models supported by subscriptions or advertising, or entirely new models geared around specific social contexts. Google Play, for instance, allows people to share a free listen with their Google+ friends when they buy a song.

As the internet, tablets, and smartphones redefine media experiences, the television in your living room will have to keep up. Soon, televisions and stereo systems will take cues from your smartphone on what music or movie to play when you come home. In addition to streaming all sorts of media on demand, TVs will become new avenues for internet services such as e-commerce, social networking, and interactive ways of catching up on news. This year, analysts IHS iSuppli predict that the market for internet-enabled TVs will grow about 60 percent to 95 million sets, compared to only two percent growth for traditional TVs.

It's natural to wonder if this flood of content will monopolize our time and wreak havoc on our attention span. However, researchers are finding that frequent doses of play are not only crucial to happiness, they can actually increase productivity. Many companies that depend on innovation – Google among them – encourage employees to take time out to play. Setting a problem aside gives the subconscious a chance to work it through and can lead to a flash of creative insight.

We like to imagine that making it easier to find moments of play in increasingly packed days will help spark some magical thinking. One thing we know for sure is that a future inspired by play won't be boring 🍌

The Knowledge

WORDS BY

Pharrell Williams

Hip hop star Pharrell Williams is a pop culture chameleon: A hugely successful producer, rapper, and entrepreneur with ventures in fashion, film, and TV. Pharrell recently launched his latest initiative, I am OTHER, a YouTube channel dedicated to original creative content. But he's not all business. Here, he shares his top 10 favorite things to play.

Mario Kart



I always loved racing games as a child, and this one is the ultimate – it's pure escapism. And I don't like to brag, but I'm kinda good.

GO-KART RACING AT EXTREME

It's hard to describe why I like Go-Karts, but that's actually what I like about it; the part you can't put into words. Trying to explain the magic kind of defeats the sparkle of it all. The truth is, I'm a big kid. I don't remember growing up. I'm not sure I've become an adult yet, actually.

ALWAYS

Again, it's about escapism – a getaway. I have a home theater that I watch it in. The effects are different, but it's still good.

BOOMERANG ERANG

& Cartoon Network

I watch reruns of cartoons on Boomerang and Cartoon Network at night. I love the old ones from the '50s like *Looney Tunes* and *Tom and Jerry*, but also newer stuff like *The Smurfs* and, of course, *The Flintstones* and *The Jetsons*. My absolute favorite show is *Chowder*. (I think I have a couple of T-shirts.) It's about a chubby kid with a funny set of friends. He lives in a very interesting world; the backdrop is like wallpaper, so wherever he goes, it doesn't move.

Bonita Applebum

A TRIBE CALLED QUEST ////////////////

This is the record that hooked me into hip hop. I first heard it in 1989. I was over at my friend Shay Haley's house and his cousin brought over the cassette – he got an early copy when he was in DC. I listened to it on repeat. It was like nothing I'd ever heard before; it was out of this world. It still is.

Angry Birds

iPad

I played this a lot last year but I had to stop. I realized I was playing *Angry Birds* in all my free time. It was an addiction. People would call my name once... twice... three times, and I just didn't hear them. When that's happening a couple times a day, you know it's time to put down the iPad. I like being in control. There are only certain things in life you let go for.

BOWLING AT Lucky Strike

Lucky Strike is a local spot on Miami Beach where my friends and I like to go. It's just good fun recreation, though I'm not a very good bowler.

NATIONAL LAMPOON'S

Vacation

This film is just ingenious, the whole thing, every line. It may be the funniest movie I've ever seen in my life.

LIVE

Benny Hathaway

Donny Hathaway is an incredible Motown artist from the early '70s. I love listening to his album *Live* while driving around my hometown Virginia. It's colorful and vivid, yet calming. His writing was incredible. It was very real and inspiring to me. The women loved him. You can hear them screaming out in the recording.

WAL-TIME

My friends and I share funny videos whenever we stumble across them, and we watch them over and over again. It's addictive. Online video is such a great way for people to express themselves. That's why I really appreciate the opportunity to start a channel on YouTube, I Am OTHER. It's meant to be an outlet for people who are super creative. It has all original content; episodic shows ranging from documentaries to comedy to art and music. My team and I select everything ourselves – we all have to like it. We want to make a serious and significant splash 🌊



Crayola's Colorful Evolution

It may have inspired generations of kids to get creative with color, but when it comes to integrating digital technology into its products, Crayola is doing more than painting-by-numbers.

WORDS BY *Jon Corn*
PHOTOGRAPHY BY *Bryan Derballa*

When is a color more than just a color? When it shows that a brand is in tune with its times. With the Civil Rights movement gathering pace in the early '60s, Crayola realized that not all children could draw pictures of their families using the 'flesh' crayon to color their skin. Soon enough, the shade was quietly renamed 'peach.'

Sixty years later, we're undergoing another cultural shift. It may be technological rather than political, but as kids are bombarded with ever more sophisticated forms of entertainment, the message remains the same: Adapt or get left behind.

As digital products replace the more tangible things in our lives, it's tempting to write off Crayola as a dinosaur from a different era. After all, its core business is over a century old, and involves unsexy industrial processes like pouring hot wax into molds. But in reality, Crayola is making itself more relevant than ever, not just keeping up with the digital age, but helping to set the pace.

"We're medium agnostic," says Vicky Lozano, VP of Corporate Strategy. "We never had a debate about whether we should or shouldn't step into digital. It's all about how kids play."

But in a world where digital is overturning so many old habits, how do kids

play today? What has changed in the 125 years since cousins Edwin Binney and C. Harold Smith first made red oxide pigments for barns and carbon black for automobile tires? In the 109 years since Binney's wife, Alice, coined the word 'Crayola' as the brand name for the high quality, affordable colored wax sticks her husband and cousin developed for schools? What has changed? Everything and nothing.

"The fundamental things about kids are still the same," Lozano insists. "They're curious. They want to be engaged. They want to explore." With three children aged six, four, and two herself, Lozano has access to 24/7 market research — "And they're brutally honest," she jokes.

A 2011 survey by Smarty Pants ranked Crayola as the most-loved brand among mothers and put it in the top 20 among kids. (Bonus fact: According to another study by Yale University, the smell of a fresh box of crayons is the eighteenth most recognizable scent in the world.) Crayola didn't achieve that kind of brand penetration by accident; it got there by being laser focused on those consumers above everything else.

"In the world of technology it's very easy to get distracted by the next shiny

object," Lozano says. "So the question was, 'What kind of experiences and technologies do we really want to get behind?'"

"We've spent a lot of time over the last few years making sure we're very clear about what our 'true north' is. We happen to make a lot of great tools, but at the end of the day, we're here to help parents and teachers raise creative and inspired kids. That's our purpose — no matter what kind of products we offer or how we go to market.

"We ask ourselves: 'What are the things that we can do as a company, whether they're products, services, or anything philanthropically, that can help support kids' growth and development?'" she continues. "We have designers who say, 'Wouldn't it be cool if I could do this...?' We are constantly innovating. We have a lot of proprietary technologies now, capabilities around chemical technologies and, especially over the last several years, digital technologies."

Crayola isn't using those technologies to replace its core business of manufacturing and distributing crayons; instead, it's integrating the old and the new. Take, for example, a new range of products like the iMarker, an all-in-one digital pen, crayon, and pencil, designed for use with the Color Studio HD iPad app. It's similar to the traditional coloring

Left: The playful facade of Crayola's corporate HQ in Easton, Pennsylvania

book experience, but with added interactive sounds and motion. Or Lights, Camera, Color!, another HD application that allows kids to turn their favorite photos into digital coloring book pages.

Perhaps the pinnacle of Crayola's ventures into tech toys is the Digital Light Designer, a 360-degree domed drawing surface that allows little imaginations to run wild with colored LED lights. Children can play updated versions of their favorite games or animate and save up to 50 pieces of their own artwork.

And the company has done its homework – understanding child development at different ages, and how digital can play a part. Thus the 'My First Crayola' line is directed specifically at one-year-olds; while 'Crayola Catwalk Creations' targets 'tween' girls interested in expressing themselves through fashion.

Crayola also understands that even the most integrated products are useless if consumers don't know about them. That's why, over the past few years, "We have invested more and more in digital marketing

"Our core 'mom audience' is turning to the web for gift and usage ideas; she's price comparing and reading reviews. That's why we focus heavily on search, social, and digital display, helping mom find the Crayola products she needs."



The hands-on Crayola Experience in Easton includes buckets of purple play sand for big and small kids alike

initiatives," explains Nancy Conrad, Director of Marketing Communications.

These initiatives have taken the form of online advertising, promotions, social media pushes, and other digital activation programs that allow Crayola to connect with parents and educators invested in raising creativity levels among kids.

Perhaps unsurprisingly, that connection has been particularly effective via social media, with Crayola's YouTube channel recently celebrating its fourth birthday. On Facebook, they run a live chat series with experts and creative celebs called 'Inside the Crayon Box.' "We prompt conversations around creativity so parents can learn from each other and understand how they can easily take action to build creativity as a skill in their children," says Conrad.

This kind of digital marketing has a distinct advantage over traditional media advertising because it allows you to go where your consumers are. "Our core 'mom audience' is turning to the web for gift and usage ideas; she's price comparing and reading reviews before she makes purchases," says Conrad. "That's why we focus heavily on search, social, and digital display, helping mom find the Crayola products she needs to fulfill her child's back-to-school list or gift ideas."

Gifts and new school purchases are two of Crayola's core revenue streams. As a result, seasonality and targeting are key. Conrad's team ramps up its paid media and digital activity during the back-to-school and holiday seasons, while keeping a close eye on all of its channels through Google Analytics.

"We continue to test and learn what channels will be most effective in helping mom make informed purchase decisions," Conrad explains. "We test both creative and placement to optimize our display and search campaigns. Our survey and sales data shows a positive impact on our digital buys, and we've mapped out a strategy to continue to grow in channels where mom is looking for product and usage ideas for various occasions and seasons."

This success with new media – particularly in reaching out to educators – wouldn't have been possible if it wasn't for a decision taken in 1948, when Binney & Smith (as the company was still called back then) implemented the first workshops to



Vicky Lozano, Crayola's VP of Corporate Strategy

help art teachers utilize their growing line of products. That training kickstarted a relationship between Crayola and learning institutions that still stands today, and which puts the brand in a privileged place in the lives of its consumers.

"They are in the unique position of being one of the first connections kids have to start building their creative skills – at home, in preschool, and in elementary school," says Tim Magner of The Partnership for 21st Century Skills, a national organization that prepares children in the US to compete in a global economy. It recently voted Crayola to a seat on its executive board. "Through visual arts, Crayola helps kids think critically and creatively, work together, and find ways to communicate their imagination, thoughts, and ideas."

And yet Crayola might not enjoy such success at inspiring creativity if it didn't embrace a creative ethos of its own. "We're not structured like a traditional organization, which would be divided by product lines; our product marketing is structured around consumer insights and needs," Lozano explains.

"They are one of the first connections kids have to start building their creative skills. Through visual arts, Crayola helps kids think critically and creatively, work together, and find ways to communicate their imagination, thoughts, and ideas."

By understanding those needs, Crayola can ideate from a consumer-oriented point of view. "We don't enable anything that doesn't already exist," Lozano says. "Those ideas are already in the minds of children. They're naturally curious and unconstrained. They haven't yet learned all the inhibitions that we've learned as adults. Our goal is to help bring that out."

One way in which Crayola is tapping into kids' creative talents is through 'Doodle 4 Google,' a partnership that challenges school-age artists to come up with an original design for Google's home page, which is visited by millions of users daily. In addition to featuring on Google.com for a day, the winning design will be used on a limited edition Crayola 64 Box.

"We typically don't partner," Lozano explains. "It was a very selective decision for us. Our companies' missions were so incredibly aligned that when we talk about the betterment of kids, there was such a marriage of the two. What's great is giving kids an opportunity to really bring those amazing, original ideas and concepts to visual form. What better kind of reward than to share that with the world?"

The Olympics Unpeeled

In the annals of modern consumer culture, there are good products, there are great products, and there is the banana. The *Musa acuminata*, or Cavendish banana, elegantly encompasses almost everything that people want from food: Great taste, plenty of nutrients, and a colorful, biodegradable package that protects the goods yet peels off like the wrapping on a candy bar.

But when the United Fruit Company first began importing them at the beginning of the twentieth century, many people had no idea how to eat the strange new fruit. It was Edward Bernays, renowned propagandist and nephew of Sigmund Freud, who helped United Fruit launch a series of massive marketing campaigns that educated the masses. Through these campaigns, United Fruit essentially created the banana in the American psyche.

The Olympics are the banana of the broadcasting world – a nearly perfect

product that ticks all the boxes of modern entertainment (drama, struggle, glory, anguish, redemption, and a lot of fit, athletic bodies). But it's all buried deep inside a manic 16 days in which 302 separate events run in multiple venues for a combined 7,000 heats. Television alone, with its linear programming schedule and necessarily limited primetime coverage, can present only a fraction of the personal stories and unlikely triumphs that transform the Games into more than a collection of sports we only watch once every four years.

In other words, it may be 2012 but the majority of people are still consuming the Olympics with the peel on. So it's not surprising that some aren't enjoying the experience: During the Vancouver Winter Olympics in 2010, for instance, Nielsen reported ratings among American teenagers at 57 percent lower than the national average.

The challenge is not to sell the games, but to find a better way to create them in

This summer's Olympics might not be the first digital Games, but they will be available to more people on more screens than ever before. The teams behind one of the most ambitious multimedia events ever explain how the magic will happen.

WORDS BY *Tetsuhiko Endo* | ILLUSTRATION BY *Christian Montenegro*



the minds of viewers; to add context, reference points, and backstories that allow people to get past the tough outer skin and immerse themselves in the content underneath.

For this, the multimedia organizations behind London 2012 turned to some of the brightest minds in the world of digital media and asked them to do a job that even many in the advertising game don't quite understand: Win hearts and minds via digital channels. "It was quite an interesting environment to come into," says Alex Balfour, Head of New Media in the London 2012 Organizing Committee (LOCOG). "A lot of our senior management weren't people with publishing or digital backgrounds so I was asked some quite testing questions about what it is that I do. When I told them, it was: 'Well, what does that result in? What does that mean?'"

The Olympics are the largest logistical exercise in Britain since World War II – a fact repeated like a mantra around LOCOG headquarters in Canary Wharf, East London. The comparison is especially apt for Balfour because he and his handpicked team of 12 have taken a decidedly 'Shock and Awe' approach to their digital campaign. Over the course of five years they have either created or developed 77 different websites, apps, and channels addressing every level of consumer engagement with the Games.

The focal point is the main website, london2012.com, which acts as a sort of nerve center for anything you might want to know about the Olympics; from where to buy tickets to the location of kayak events to the rules of fencing. When the Games start, the Press Association will mainline articles into it, along with roughly 5,000 images a day from Getty. The other 76 sites include volunteer sign-up pages, physical education initiatives, cultural programs, spectator maps, apps that will give up-to-the-minute scores or news feeds for all the events, and even regularly updated Facebook and Twitter accounts for Wenlok, one of the Games' mascots.

Does that mean 2012 will see the first truly digital Games? Balfour smiles wryly. "They say that about every Games," he replies. "Ever since Atlanta had a website in '96. TV is still the biggest player in all this so it's not a digital Games *predominantly*, but I definitely think it's the first social media Games."

Balfour is concentrating a lot of his firepower on the most popular social media networks in the hope of adding an extra dimension to the connection between viewer and spectacle. But he's savvy to the corporate banalities that often accompany the term 'social network.' "It can't just be clever or smart-arsed, as in, 'Aren't we great for being on Twitter?'" We actually want to push these technologies to be meaningful and useful in order to humanize them as far as possible."

That means multiple Twitter feeds for all the sports, alongside 'Easter egg' initiatives like the Olympic Pulse, an app through which people can send comments and photos to be shown online and on screens in athletics venues. Balfour is particularly excited about a program he calls 'Support Your Team,' in which Twitter is made into a competition ground for opposing supporters – with an eventual crowning of an overall 'Twitter Champion of the Games.'

At the time of writing, Balfour and his crew also have initiatives pending with Google, Facebook, Foursquare, and YouTube, among others, but juggling multiple websites and social media platforms over a range of devices wasn't the original plan. Back in the summer of 2005, when London won the Olympic bid, broadband connections only just outnumbered dial-ups in the UK; MySpace and Bebo were the largest social networks; 3G was a novelty and many in the media world still believed that 'convergence' was going to mean a little black box that would meet all television, video, and web-browsing needs.

Around that time, Balfour and his team drew up an ambitious plan to build a platform that would aggregate and lend order to the digital content surrounding the Games coming from stakeholders, sponsors, and LOCOG itself. The proposed Olympic content hub would incorporate elements of Facebook, Foursquare, and AOL's Lifestream, to name a few. It may very well have worked, but then the landscape changed.

First, consumers' social behavior on the web didn't aggregate – it diffused. Instead of centering their activity in one place, web users went to Google to browse, Amazon to buy, Facebook to socialize, Pandora and Spotify for music, and Twitter for news. More recently, web users have adopted mobile devices. In March, Nielsen reported that American smartphone penetration had reached 49 percent – an increase of 38 percent in only a year. This jump, in the US and other developed countries, has added another vigorous organism to a primordial soup that was already seething.

"In the last six to nine months, social networking and mobile technology have essentially merged and made mobiles into an important part of modern marketing," says Simon Andrews, the founder and CEO of Addictive, a mobile advertising and content consultancy firm based in London. "It represents a profound shift in how people interact with brands."

Andrews lists two main ways that people currently use mobile internet devices: "First, they share things, but the more pertinent one is that they use their devices for fact-finding; as a way of contextualizing what they are witnessing. Whenever content is being viewed there are people picking up their phone or tablet and looking for social elements via Twitter, Google, or Wikipedia, so we are seeing a lot of chatter via mobile devices during ➡

“This is the first social media Games. We want to push these technologies to be meaningful and useful in order to humanize them as far as possible”



certain events. For instance, last year, during the Super Bowl, an ad spot for Chrysler featuring Clint Eastwood made their Google searches spike by about 120 percent.”

Andrews predicts that this so-called ‘second-screen’ viewing will be more popular than ever at London 2012, both in homes and in the grandstands. His assertion is backed up by a man who has made it his job to figure out exactly how the internet and television interact. Alan Wurtzel, NBC’s President of Research and Media Development, interprets data that Google and NBC glean from large entertainment spectacles, like *American Idol*, or in this case the Olympics, to try and make sense of the ways people consume them. By comparing the Beijing Olympics in 2008 to the Vancouver Winter Olympics in 2010 he found that online viewership doubled between the two Games.

“In my view, TV is still king,” Wurtzel says, “but that doesn’t mean it won’t be supplemented. Simultaneous experience, that is watching something and interacting with that content on various platforms is only going to increase.”

one branch of what Fearnley describes as an Olympics ‘content nucleus.’ Not a social hub like the scrapped LOCOG platform, but a colossal database of news, video, and information that will be the portal through which remote viewers will consume the games when and how they choose.

“In terms of in-depth coverage, we will deliver a page for every athlete, for every country, for every sport, and for every event. If you add those together, that’s in the tens of thousands of pages of coverage,” he says. “The idea is that whenever you go to one of those pages, whether it’s a British diving star or a German rower or whatever, that page will have the most up-to-date video, text, story of their Games, any news stories about them, all of it delivered in real time, automatically. By the time a race finishes and someone has won, you can click on their page and it will have a video of them crossing the finishing line.”

Consider, for a moment, the possibilities. With the right cable channels and a cell phone, a viewer could spend 16 days watching events that never even get a whiff of

“We want to build a data platform that doesn’t just power the Games but also leaves a legacy that allows us to deliver real-time, automated data irrespective of what the event is. It’s about bringing together video and data in ways that have never been possible before.”

That’s great news for media organizations, which are now able to interact with their customers over more content than ever before. But it’s also a huge challenge, requiring awesome amounts of content. That’s where Phil Fearnley comes in. Fearnley is the General Manager of News & Knowledge at the BBC – it’s his job to oversee a large chunk of the corporation’s Olympics content production.

In Beijing, that meant eight streams and roughly 1,200 hours of standard-definition content. Now it means 24 streams and 2,500 hours of high-definition content. In other words, every minute of every sport, plus opening and closing ceremonies, recaps and commentary. As Fearnley says with a smile, “There is a level of scale to this that can freak you out. It’s our job to make some sense of it.”

The BBC will make live coverage and ‘on demand’ recaps of every event available on mobile, tablet, computer, and television through a raft of satellite providers (what the BBC calls their ‘Four Screen Strategy’), but they aren’t stopping there. Video coverage of the actual sports is just

primetime television coverage, basically constructing their own personal viewing experience from a mélange of live, recapped, and in-depth coverage. Most won’t. Most will stick to watching on TV with the odd internet ‘supplement’ to use Wurtzel’s term, but the groundwork has been laid for a completely new, user-generated way to comprehend this type of spectacle as a multimedia experience.

Because for Fearnley, this isn’t just about the Olympics. “We want to build a data platform that doesn’t just power the Games but also leaves a legacy that allows us to deliver real-time, automated data irrespective of what the nature of the event is. Sports events? Yes. But equally for news and other things.”

He’s thinking big, and goes so far as to compare the combined television and digital broadcasts to the 1953 coronation of Queen Elizabeth II, which saw the emergence of television as a mass medium in Britain. “It’s not just about the video,” he says. “It’s about having an experience that brings together video and data in ways that have never been possible before.”



The facade of the Al Garafa Stadium will be made up of the colors of the flags of competing nations in the 2022 soccer World Cup



Modular upper-tier seating in the Al Khor Stadium will temporarily provide an extra 19,830 seats



The Al Shamal Stadium's shape is derived from the traditional 'dhow' fishing boat used in the Gulf

The Future of Play

From next-generation soccer stadiums to fan-focused digital technology and real-time 3D environments, *Think Quarterly* looks to the future of live-action sports.

WORDS BY *Cyrus Shahrad*

The ancient stadium was a grand temple to the gods of competition, built to awe, inspire, and to last. But times have changed.

The motto of this summer's London Olympics is 'Reduce, Reuse, Recycle,' and its environmentally friendly HQ is constructed from repurposed gas pipes, low-carbon concrete, and removable sections.

The stadium of the future will be a fusion of technology and sustainability, radically altering the ways in which we connect to the action in front of us, whether on the football pitch, athletics arena, or baseball diamond.

A glimpse into this future can be seen in Albert Speer & Partner's designs for Qatar's winning 2022 soccer World Cup bid. Every one of the 12 proposed structures is beautifully conceived, from the Doha Port Stadium that looks from above like a one-

eyed sea god surrounded by the Gulf, to the Al-Shamal Stadium's artfully sloping wooden crown that emulates the traditional 'dhow' fishing boats that bob in neighboring waters.

But there's more to them than mere eye candy. AS&P kept social sustainability at the center of its plans: From scrutinizing the proximity of residential areas capable of benefitting from solar power stations used to cool stadiums, to pencilling in new shopping districts and theme parks at several of the sites. Around 70,000 of the proposed seats are set in removable tiers so stadiums can be downsized following the month-long competition. There will be none of the expensive white elephants that blighted the legacy of the last World Cup in South Africa.

The designs reflect certain elements of one of the most successful European stadiums of modern times – the space-

age Allianz Arena in Munich, Germany, which operates at 90 to 100 percent capacity for Bundesliga games thanks to a series of measures that help to bring previously unconsidered soccer fans into the fold, from entertainment complexes and corporate facilities to safety measures separating rival teams.

"These days I go to games with my six-year-old son," says Axel Bienhaus, partner at Albert Speer. "That would have been unthinkable for my own parents – football games were too rough for children back then – but now it's families and corporate clients that are helping revitalize the industry in terms of ticket sales. Not that traditional football fans should feel that their stadiums are being taken away from them: Security measures and VIP facilities, when they're designed effectively, are invisible to the average person in the

stands. And, of course, you still need old-fashioned fans to keep the atmosphere at games alive."

The aim is to offer those fans something they can't get at home, where the viewing experience has been revolutionized by high definition, 3D and multi-angle replay wizardry.

"The challenge is the same as with concert halls," says Bienhaus. "When music-lovers have the sort of systems at home that sound better than a live performance, organizers have to work to make the atmosphere the thing that's worth buying a ticket for. In the same way, when football fans have high-definition games in their living rooms, our job is to persuade them that no amount of technology can replace the atmosphere of being on top of the action in a real football stadium. I think the success of the Allianz Arena proves that it's an argument we're winning." ➔



Sporting Innovations mobile technology is set to transform the traditional in-stadium experience for fans



Fans 'check in' at the LiveStrong Park in Kansas City



EON's Icube promises to unlock the potential of 3D for fans and professional athletes alike



Not everyone in the business is assuming that the undiluted power of live sports is strong enough to withstand the influence of digital media, however. Some, like Asim Pasha of Kansas-based technology company Sporting Innovations, believe that the only way stadiums can survive is by incorporating elements of the digital experience into more traditional ticketed games.

As such, Sporting Innovations is implementing digital upgrades for stadiums around the world that it hopes will foster long-term relationships between fans and teams, upturning the conventional notion of games beginning and ending with the referee's whistle, and transforming fans into more than mere spectators.

"The first step is to help fans develop a persistent connection to their team," says Pasha, "giving them enough data to let them engage with players in a meaningful way and helping them understand why games are important. Once they come into the stadium, we're then able to provide a more personalized experience: We know where they like to sit, what products they bought last time, what social circles they move in.

"Over time, clubs will be able to tailor products or services to individual fans, and before long we'll enter a state of 24/7 connectivity in which fans are fully aware of the relationship in which they are

"When football fans have high-definition games in their living rooms, our job is to persuade them that no amount of technology can replace the atmosphere of being on top of the action in a real football stadium. I think it's an argument we're winning."

actively engaging, and being rewarded for their engagement. It's about helping fans shape the live sports experience of the future, about creating VIP experiences for everyone, no matter where they're sitting."

This final phase, according to Pasha, is three to five years away. The technology being developed by Sporting Innovations is still at a shallow point on the adoption curve in an industry not known for embracing new ideas, but at the LiveStrong Park – home of soccer team Sporting Kansas City – the first stages of implementation have met with notable success. Telecoms company Cisco has installed 30 miles of fiber optic wire and 200 routers, allowing the 20,000 capacity crowd to interact with the game via smartphones at high speeds and without interruption.

That interaction takes many forms: From checking into seats to facilitate meetups or order half-time snacks, to sending out '#sportingKC' tweets that are then displayed on the giant screen at one end of the stadium. Fans can watch personalized replays or play any number of themed games – from predicting what happens next on the field to answering trivia questions about the team, all for redeemable reward points – while Pasha tracks phone signals and foot traffic to help the club predict and encourage behavioral patterns among its fans. And it seems to be working: Ticket sales rose on average from 3,000 to 12,000

per game last year, despite prices going up to pay for the new technology.

Where Sporting Innovations is using digital technology to deepen the connection between fans and team, at 3D tech specialist EON Reality, they're going a step further: Bringing the entire sports arena into the home.

Engineers at EON's HQ in California have developed the Icube: A linked sequence of computers projecting images onto a series of walls, around which users wander wearing stereoscopic glasses, their movements tracked by motion sensors. The result is a total-immersion 3D experience of the type once prophesied by early virtual reality.

For fans, the implications are breathtaking. Soon, they'll be able to plug in at home, don a pair of glasses, and find themselves in the stands of any stadium, anywhere in the world, as a game unfolds live before their eyes, with a field of vision that moves according to the motion of their heads. The technology is still under wraps but could be widely available for home use within three years.

It's already being utilized by sports coaches looking to help perfect their players' techniques. "The power to revolutionize training is already in our hands," says Brendan Reilly, a former Illinois State basketball coach drafted by EON as director

"Fans will be able to plug in at home, don a pair of glasses, and find themselves in any stadium, anywhere in the world, as a game unfolds live before their eyes, with a field of vision that moves with the motion of their heads."

of its sports division. "Right now in our offices we have the ability to stand next to life-sized versions of ourselves swinging golf clubs or throwing footballs, to put ourselves right in the field of play. At elite levels, what separates good players from great players is the ability to slow the game down mentally, to read plays and make critical decisions. And virtual reality allows us to do that while evaluating biomechanical motions and correcting errors, breaking things down to a level we've never seen before."

Asim Pasha is surely correct when he insists that ignoring the digital revolution isn't an option. "We're often asked about the risk of creating fans who sit in stadiums and watch the game progress on their screens, rather than on the field, but it's up to us to creatively influence the technology so that doesn't happen," he says. "We have a gaming app called Live Play, and you can't compete in that game unless you're watching the action unfold, because you have to answer questions based on what's going on in real time. We think it's things like this that will help people follow events more closely and understand the game better, because the fans who are best rewarded will be the ones who literally keep their eye on the ball. That's the sort of model we're aiming to promote: Not to replace the reality of live stadium sport but to enhance it. That's the future, as far as we're concerned." ●



Faire Play

Tim O'Reilly has made it his mission to change the world by spreading the knowledge of innovators. Here he argues that only by having fun with technology can we truly unlock its potential.

WORDS BY *Tim O'Reilly* | ILLUSTRATION BY *Lydia Nichols*

There is a prevailing mythology that new industries start when creative entrepreneurs with ideas for new businesses meet venture capitalists. The reality turns out to be different. New industries start with people having fun.

Most of the people who launched the personal computer industry three decades ago weren't entrepreneurs; they were kids to whom the idea of owning their own computer was absurdly exciting. Programming was like a drug – no, better than a drug, or joining a rock band, and certainly better than any job they could imagine. The Homebrew Computer Club (founded in Silicon Valley in the mid 1970s and with members including Steve Jobs and Steve Wozniak) was just that – a place where enthusiasts shared their projects and grew their knowledge.

The World Wide Web started out just the same. At first, no one took it seriously as a place to make money. It was all about the joy of sharing your work, the rush of clicking on a link and connecting with another computer half the world away, and constructing similar destinations for your peers. We were all enthusiasts, but only some of us were entrepreneurs.

To be sure, it is those entrepreneurs – Bill Gates, Steve Jobs, and Michael Dell in the personal computer era; Jerry Yang, David Filo, Pierre Omidyar, Jeff Bezos, Larry Page, and Sergey Brin in the web

era – who saw that this world driven by a passion for discovery and sharing could become the cradle of a new economy. They found backers, shaped the toy into a tool, and built the businesses that turned a movement into an industry.

This same enthusiast-to-entrepreneur transition is playing out right now in the Maker movement – that sprawling mélange of joyful play with sensors and robots and 3D printers that has been growing unseen under the noses of venture capitalists for years.

When we launched *Make*: magazine in 2005, the first issues featured projects such as James Larsson's programmable cat feeder built from an old VCR, Charles Benton's rig for aerial photography from kites, and a stun gun-triggered, high-powered, see-through potato cannon.

When we launched Maker Faire in 2006, it featured a life-sized version of the Mousetrap game, bamboo bicycles, and a fairground with pedal-powered versions of rides from traditional county fairs, along with DIY projects like the Alameda-Contra Costa Computer Recycling Society's demonstration biodiesel-powered supercomputer running Linux and made out of recycled PCs.

By 2011, when the Faire had grown to more than 100,000 attendees – most of them families celebrating the joy of discovery

and invention – it also featured prominent venture capitalists walking around with business cards, wooing the entrepreneurs who had, seemingly, appeared magically out of this chaotic stew of people having a blast.

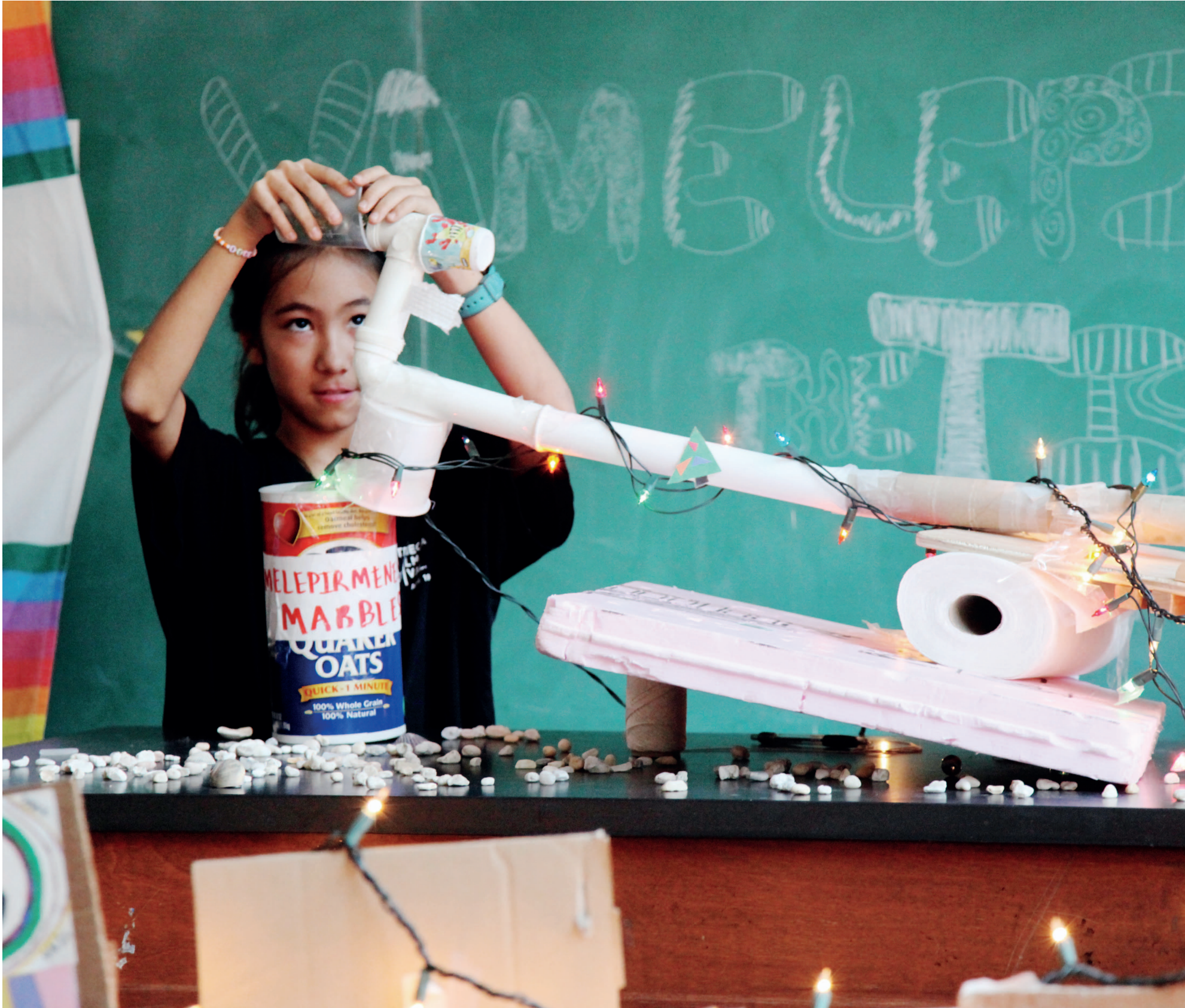
DIY drones (do-it-yourself unmanned aerial vehicles), MakerBot (a 3D printer kit), the Arduino sensor and control platform, parts supplier SparkFun Electronics, Adafruit Industries, Shopbot, and a host of other small companies were suddenly registering millions of dollars in sales and were ready for an infusion of capital to take their homegrown businesses to the next level.

You can even argue that the first 'wow' moment for multi-touch computing wasn't the iPhone, but Jeff Han's homebrew large-screen multi-touch display, which amazed attendees at TED and O'Reilly's Emerging Technology Conference in 2006. (Jeff went on to sell these devices to media outlets like CNN.)

At the Open Hardware Summit, held in conjunction with Maker Faire New York in 2011, one attendee lamented the lack of coverage from Silicon Valley tech media. It turns out that they were all at TechCrunch Disrupt, covering (among a bunch of other interesting stuff) too many me-too start-ups funded by entrepreneurs chasing dollars rather than passion, or venture capitalists with more money than sense.

The lesson is clear: If you want to get out front as an investor or as an entrepreneur, treat joy and passion as your guide.





The Job's a Game

By combining digital tools and the principles of play, these entrepreneurs are adding elements of fun to the previously boring bits of our lives.

WORDS BY *Allison Mooney*

"In every job that must be done, there is an element of fun. You find the fun and – SNAP! – the job's a game!"

MARY POPPINS

In recent years, 'gamification' has fast become an overused buzzword. But turning chores into a game is as old as, well, spoonfuls of sugar. It's just that technology is making it easier than ever to make the mundane – from finance to fitness – a bit more magical. These companies are combining digital tools and the principles of play to make our medicine go down in a most delightful way. ➡

Left: A future engineering genius at the Institute of Play

MAKING HEALTH FUN

SuperBetter

In July 2009, Jane McGonigal hit her head – hard. The resulting concussion sidelined her for months. She became depressed, which made matters worse. Doctors told her she needed to keep her spirits high, so the world-renowned game designer turned to what made her happiest: Playing games. “There is a sense of agency that you get from gaming,” she says. “It makes you optimistic. You feel like you can do extraordinary things.” But rather than turning to her console, she turned the fight for her life into a real-life game. She was on an epic quest to get better, battling bad guys (things that hurt her) and collecting power-ups (things that helped her) on the way.

McGonigal won – she is now completely recovered – and she built a gaming platform so others can do the same. SuperBetter, which launched in March, is an online social game that helps people achieve their health goals by building up ‘personal resilience.’ The most popular ‘challenges’ are depression and losing weight, followed by stress reduction and sleeping better. It’s built on scientific principles you can find in psychological research or self-help books, but the game puts them into a fun framework. The point is to actually do what doctors say you should do.

While about half of SuperBetter’s users are regular gamers, you don’t need to be a Guild Master (or even know what that means) to play. It was inspired by an idea McGonigal credits to Paul Tahini, Director of the Robert Wood Johnson Foundation. “He said, ‘We need a *Super Mario Bros.* for health,’” she recalls. But of course, real life isn’t a game and not every health problem can be vanquished. “You have to change your notion of what ‘winning’ means,” she adds, giving the example of a player with a terminal motor neurone disease. “He doesn’t expect to beat it; he expects to increase his quality of life, to be happier every day.”



MAKING ENERGY FUN

Opower

We all cheat. When we don’t know what’s correct, we look for answers around us. Psychologists call this ‘social proof,’ and we rely on it in any number of situations – from a fancy dinner party to the scene of an accident – when deciding how to act.

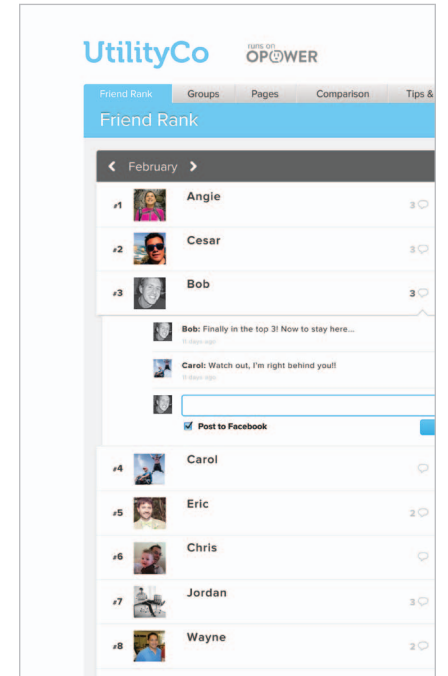
Alex Lasky, founder and president of Opower, thinks it can also induce us to save energy. Right now, 20 percent of all household energy is wasted, but most people are pretty clueless about how much they use. “The average person spends six minutes a year thinking about [it],” Lasky says. “It’s not that people don’t care, it’s just boring and confusing, and no one knows what a ‘kilowatt hour’ is.”

To focus attention on it, Lasky decided that energy needed to be more appealing. So he turned to the principle of social proof,

as explained in Robert Cialdini’s best-selling book *Influence*. (Cialdini has since become an advisor and investor.)

Opower shares your personal energy data alongside that of your neighbors. So it doesn’t just tell you the norm, it gives you a score to beat, while also making you feel like part of something larger – it’s massively multiplayer planet saving.

The company has energy data for 50 million households in the US now, and is able to identify patterns, show usage trends, and give tips or incentives for improvement. So far, it seems to be working. People with access to their service save about three percent in energy usage. With 14 million users, that adds up. In April, Opower passed the one terrawatt hour mark; the typical amount 100,000 homes use in a year.



MAKING LEARNING FUN

Institute of Play

With a name that sounds more like an amusement park than a non-profit, the Institute of Play sits at the intersection of games and education. “We are designing experiences that make learning irresistible,” says Katie Salen, the Institute’s Executive Director. Their first charter school, Quest to Learn, opened in New York City in September 2009, and a second one opened in Chicago last Fall. Both middle schools have about 230 students enrolled.

So how do the schools make learning more fun? “It’s not about incentive structures and points systems; those are surface features,” she says. “We reframe the experience so that learning happens by doing. It’s hands-on problem-solving. And pupils are motivated to solve because it’s interesting.”

Every piece of the curriculum is set up as a mission, a 10-week challenge involving game strategies like role-playing,

simulation, and collaboration. For example, one class teaches the American Revolution by pretending that ghost soldiers were locked in the basement of the American History Museum. The students write memoirs of the ghosts and create digital portraits, helping them to understand varying motivations and perspectives. In an integrated science and math class called ‘The Way Things Work,’ sixth-graders help a shrunken mad scientist lost inside the human body navigate its internal systems and report back to his research lab.

Students learn to be tech-savvy, but they’re just as likely to be using a pencil as an iPad. “It’s about the purposeful integration of technology,” says Kalen, “when being connected really matters.” That’s not just at school, but at home too, where, she says, online environments and tools can give kids the ongoing support they’re often missing. ➔

MAKING WRITING FUN

The Written World

If to hold a pen is to be at war (as Voltaire once said), then The Written World is a peace treaty. This story-writing game aims to make the writing process less painful and more collaborative.

The idea came to Simon Fox five years ago when he was running a writing group. Members worked together to overcome writer's block – the point was to inspire and motivate one another. However, “I noticed that it was something people found profoundly difficult to do,” Fox recalls. “It’s not easy to share a creative moment.” So Fox and a friend, Toby Green, built game software to battle the blank page.

Their platform follows literary principles established by greats like Goethe and Joseph Campbell. One player is established as a narrator, another as a protagonist. Together, they work their way through chapters, complete objectives, and add encounters. If they disagree, one can use ‘force’ to change something. (Romeo

kills himself? No way!) For Fox, the whole point is that language itself is a force. “Words are powerful,” he says. “They play a big role in defining the reality around us and in helping us imagine what’s possible.”

The project was piloted on crowdfunding site Kickstarter, where investors ranged from young teens to middle-aged moms. “It’s a disparate community of people around the world who have an interest in writing, but they need inspiration to get something done,” says Green. The game component is an “arrow in the quiver,” just one way to give a nudge. “Designers have been using game dynamics for a long, long time,” Green continues, “but they called it ‘choice architecture.’”

The Written World is designed to guide players towards great pieces of prose, while improving their writing and collaboration skills, and, of course, having fun along the way. As Green concludes: “If the game isn’t its own reward, it’s not a very good game.”



MAKING FINANCES FUN

Payoff

There’s a reason its called ‘playing’ the stock market. High-stakes investing can be thrilling. Investing in a 401k? Less so.

It’s much easier to get into debt than out of it, and personal financial responsibility has traditionally been as fun as, well, paying taxes. Payoff.com is hoping to change that.

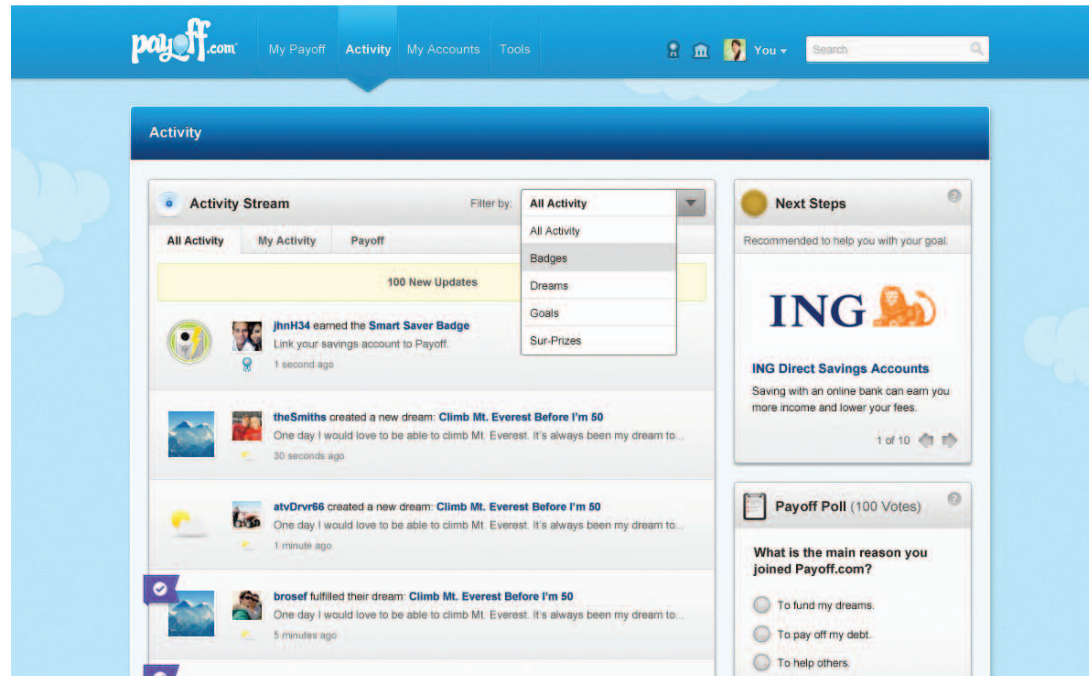
“People thought I was crazy,” says founder and CEO Scott Saunders. “They told me, ‘Finance is a very serious thing; people don’t want fun with their finance!’ I think people want it to be fun because it is so serious. We want to make it more light-hearted, engaging, and palatable to make those tough decisions.”

On Payoff, users link up their financial accounts and share their goals – like buying a new house or a cruise to the Caribbean. The system helps break these ambitions

into baby steps and tracks progress, offering incentives and social support along the way. You might get a badge for saving, say, \$1,000 that brings some social value. It may also lead to monetary prizes from brands. If you’re saving for home improvement, Home Depot might kick in a coupon.

“Right now, you only hear from a financial institution if you do something wrong,” says Saunders. “This is about positive reinforcement.” It’s also about financial education. The site features quizzes based on personal spending with questions like, ‘What is the balance on your Capital One card right now?’ or, ‘Did you spend more at Starbucks or McDonalds over the last 30 days?’

“It’s contextual and relevant,” says Saunders. “Financial literacy in a box just isn’t effective.”



MAKING FITNESS FUN

Fitocracy

They were a cliché. As kids, Brian Wang and Richard Talens were “those video game-playing geeks of the world” who preferred Xbox to exercise. And it showed. Talens was a 230-pound teen. Wang was skinny and weak. But in college, they both started getting into exercise and eating right. Talens dropped 70lbs. Wang got buff.

As it turns out, their gamer roots served them well. Once out of college, they made the connection between working out and playing games. “There are lots of parallels,” says Wang, noting that both are goal-based and achievement-oriented, involving competition, collaboration, and encouragement. They saw fitness regimes as “levelling up your character in real life.”

The pair built an online game, *Fitocracy*, to help people visualize a better version

of themselves. “We want the game to hit those dopamine receptors and make people feel like they can actually take care of it themselves,” says Wang.

When they launched last year, there were plenty of fitness apps on the market, “Mostly workout trackers and journals,” according to Wang, “nothing sticky or motivating.” *Fitocracy* aims to get you “addicted to your fitness” by reimagining it as a video game. It’s deceptively simple. After players set goals, the game tracks their progress so they can see results, and offers motivating incentives.

Naturally, there is a strong competitive element; players often check the site multiple times a day to see how they’re stacking up against friends. Don’t people ever fudge the truth to look good? Wang is doubtful: “If you cheat, you’re missing the point.”

*...a stain-squirting
robot in a Stockholm
shopping center.. p.55*

CAROLYN WEI, DAVID HUFFAKER

Game Your Campaign

New research from Google shows how the dynamics of social gaming can help marketers level up their digital campaigns. Google's User Experience researchers Carolyn Wei and David Huffaker explain how.

WORDS BY *Carolyn Wei, David Huffaker* | ILLUSTRATION BY *Kolchoz*

Once upon a time, video games were for kids. In their earliest days, they occupied seaside arcades, basements, and bedrooms – the natural habitats of teenagers. But as the audience grew up, the games, too, became more sophisticated, gradually spreading from bedroom to family room, drawing in an older generation. And yet, for the most part, these gaming adults were the same kids that had grown up in the 8-bit era – they were an interesting niche, but a relatively small one. Then Facebook happened.

The phenomenal success of so-called 'social gaming' has turned middle-aged women into the gaming world's fastest-growing market. These days, a 'gamer' could be a kid in their bedroom, but it could equally be their mom on her way home from work. In this sweet spot of the web, people discovering gaming for the first time are becoming highly engaged players who coalesce around a shared goal. But what can brands and marketers learn from this powerful, sociable behavior and the complex game dynamics that drive it?

On social networking sites, games serve the same purpose they do at, say, a birthday party or family gathering – they're something to do with other people, an excuse to connect and have fun. Our research set out to understand those interactions in social games, surveying 438 gamers from the US,

UK, and Australia as well as conducting video interviews with 14 US gamers.

As you might expect, communicating with friends and family is a major motivation for game play, with friends acting as a quality control for new experiences based on trust and shared taste. We found that 64 percent of gamers surveyed play via a social network site at least three times a week, and one quarter play several times a day. Nearly 29 percent stated that they played with close friends, compared to only 16.7 percent who play with strangers – a ringing endorsement for sociability.

So what is it about certain games that makes them social? What dynamics are most effective at driving engagement? We found that even those casual games that have achieved huge popularity through social networking sites often lack truly social elements. The Pictionary-style game *Draw Something* reached 35 million downloads in its first six weeks, yet lacked basic social chat features until it was acquired by Zynga in March. In comparison, successful MMORPG *Order & Chaos* supports simultaneous play for thousands of gamers, and has also inspired fans to create their own how-to quest videos and community sites outside the game.

When it comes to rich social features, there is much to learn from traditional

immersive game communities. These games are often synchronous, engaging players in real-time interactions. *World of Warcraft* gamers typically form close connections with others in their 'guild' through voice chat, often meeting in person eventually. Real-time communication allows players to talk, create, and collaborate more meaningfully than through crude mechanisms such as notifications or leaderboards. Of course, the best *type* of chat – video, text, or voice – is context dependent. Video chat might be great for poker with strangers, but a *World of Warcraft* player may not want to be seen in their pajamas.

Virtual goods are another important part of the social toolkit; their success popularized by games like *Farmville*. They allow players to express their personality, and we know from previous research that even indirect communication through the giving of virtual gifts is seen by players as a way of enhancing their relationships. This simple activity entangles the player in what has been described as 'a web of social obligations' – a tangible representation of effort and magnanimity that demands a response.

Similarly, we found a backlash against the 'noisy' notifications that provide a constant drip of activity and promotion designed to lure a player back to the game. One player told us that *Social Sims* gushes ▶





with notifications about friends baking pies, riding bikes, or mowing grass – when the most important updates about levelling up would have been enough.

But we know from some classic campaigns that complexity is no barrier to success. Goal-based social games are extremely compelling for players, who can work collaboratively to solve a problem and complete a mission. The *Halo* franchise motivated this kind of out-of-game immersion, with users creating a dedicated wiki, Halo Nation, as well as posting hundreds of ‘machinima’ videos (short films created from in-game assets) on YouTube. *Halo 2* was also promoted with the viral campaign ‘I Love Bees,’ which started with a URL planted in a trailer and set a series of real-world missions for fans. Created by 42 Entertainment, the game saw players across the US collaborate to solve problems, being rewarded with an installment of a radio-style drama that wove a backstory to the world of *Halo 2*. One player said at the time that the game was so gratifying, and designed with such cliffhangers, that he had lost sight of the fact that it was a marketing campaign.

New York retailer Daffy’s developed a bold collaboration for their 2010 ‘Underground Puzzle’ campaign. Created

“We know from classic campaigns that complexity is no barrier to success. Goal-based social games are extremely compelling for players, who can work collaboratively to solve a problem and complete a mission.”

by the agency Johannes Leonardo, 40 sections of one large image were scattered on posters across the city. Players posted photos of the pieces to Twitter, tagged ‘#undergroundpuzzle,’ and two weeks later the full image was revealed along with details of price reductions.

The challenge for digital marketers is to identify and employ social tools that are relevant, and to exploit consumers’ interest in a meaningful and engaging way. Poorly implemented ‘gamification’ can undermine the credibility of a brand or project. The game might offer points and then badges, but to what end? Conversely, social entrepreneurial site Kickstarter, which has crowdsourced more than \$130m in creative project funding, provides a model for using collaborative technologies to mobilize people around one concerted effort.

We know, then, that consumers like to express and share their values and interests publicly; the ubiquity of brands’ Facebook Pages demonstrates this. We also know that even massively popular games are not fulfilling players’ appetites for engagement and social features. That creates an exciting and powerful opportunity to create branded games or simply inject social gaming elements into digital campaigns. Add the

possibilities created by mobile – location, movement, third-party apps – and the opportunity is vast.

And there is plenty of innovation. Marketing for the movie *The Hunger Games* was social media heavy (including Twitter and Facebook accounts for specific characters, as well as a YouTube channel), but it also featured a social game on Facebook. The whole campaign was built around fan-based communication, creating games and opportunities for interaction around existing fan communities.

PlayStation clearly knew its audience when it promoted *Twisted Metal*, inviting players to shoot a military-grade gun at a real-world truck via Facebook and Twitter. The shoot-up was live-streamed for two days in February – and burnt through 100,000 bullets.

Ariel used a similar – if less lethal – social installation last September with the ‘Fashion Shoot’ Facebook app, inviting players to control a stain-squirting robot installed in a Stockholm shopping center. And another real-time game, Friji’s *You LOL You Lose*, pitched Facebook friends against each other via video, challenging them to keep a straight face while watching some of YouTube’s finest weirdness.

“The challenge for digital marketers is to identify and employ social tools that are relevant, and to exploit consumers’ interest in a meaningful and engaging way. But poorly implemented ‘gamification’ can undermine the credibility of a brand or project.”

All these games cleverly combine novelty with the prestige of discovery, encouraging players to share with their network, while exploring the possibilities of web-based technology. But there is far more potential in social games and the power of the web to connect and inspire people.

Celebrated game designer Jane McGonigal evangelizes about the transformative power of gaming, a behavior that she says can help solve real-world problems. The skillset built up by dedicated gamers, she says, includes the trust and cooperation of collaborating with others, and shows that the structure of games motivates people to be productive and to achieve their goals. McGonigal’s own games include *Evoke*, developed with the World Bank Institute, which introduced players to major world problems such as water security and poverty, and encourages them to collaborate on solutions.

A stain-squirting robot is a long way from an initiative to tackle water security, but by understanding the key features of sociability in games, marketers are finding themselves able to communicate with a growing audience in totally new ways. We have a mass technology of collaboration and connection at our fingertips – all we need to do is level-up to the challenge 🎮



Branding Brazil

As Brazil prepares to host the 2014 soccer World Cup, with the Olympic Games to follow two years later, marketers can no longer afford to ignore this country of 80 million internet users. Let Fábio Coelho, Country Director of Google in Brazil, give you the guided tour.

WORDS BY *Fábio Coelho* | ILLUSTRATION BY *Vesa Sammalisto*

A lot of colleagues tell me these days that Brazil is a 'marketer's dream.' They're right. Who wouldn't leap at the chance to work with the Brazilian 'brand?' It's not difficult to convince people that there's appeal in the beaches of Bahia, the lush forests of the Amazon, and a proud, playful culture that expresses itself everywhere from the sound of *bossa nova* to the energy of São Paulo soccer fans thronging the streets on game day. When the rest of the world's perception of your country is one of outgoing and sun-soaked people who love life, you're starting in a good place.

But there are other reasons behind this sudden interest in the country. Despite a

global recession, its economy is booming – Brazilians have newly acquired buying power and they're taking to digital media with unprecedented enthusiasm. Add to that the fact that the country will soon step into the international spotlight in a big way when it hosts the 2014 soccer World Cup and 2016 Olympic Games in Rio de Janeiro, and marketers in charge of 'emerging' regions who had heretofore focused on China and India have been forced to make room – and a lot of it – for Brazil.

"Brazil has always been an important emerging market, but as it's coming into its own it's become a jewel for us," says Arturo Nunez, Director of Emerging Markets at Nike, who oversees the brand in a diverse set of countries from Kenya to Korea. "It's center stage for what we call a 'decade of sport.'" ➔

Knowing this, where does a curious, internationally minded marketer start (aside from picking up a few basic phrases of Portuguese)? Running Brazilian operations for a company as big as Google, I find I'm asked this question a lot. My first piece of advice is to keep in mind that what's more important than Brazil's growth is its *transformation*. The way that people are consuming media and entertainment is changing dramatically, and Brazil is the place to watch it happen.

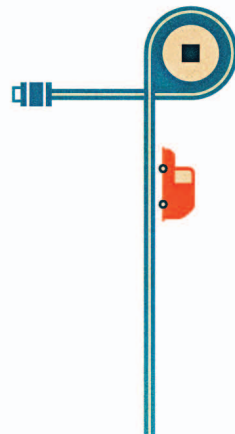
One reason for this is that Brazilians have an affinity for digital and social media like few other cultures in the world. There are more cell phones here than people. It's the world's fifth-biggest online market, with 78.5 million people reported to have access to the internet, and 47.5 million of them accessing it actively, according to numbers released in February by market research group IBOPE and Nielsen Online. That's an 11 percent increase from just a year ago.

At Google, we've seen this enthusiasm firsthand. In early 2004, Orkut (a side project developed by one of our engineers) launched quietly at a time when most of the world thought that social media was a fad. But unlike much of the planet, Brazilians were ready to use social technologies day-to-day, and Orkut spread like wildfire. It's such a cultural fixture that we now run Orkut out of Brazil, where it remains one of the top players in the social space.

What this shows is that Brazil is a nation of early adopters – and not just in terms of technology. Political and economic stability are new to the country, which is only now beginning to experience a culture with an empowered middle class rather than a strict divide between the 'haves' and 'have nots.' This is a population for which so much is new that adaptability has become second nature. Change is something we all accept now and, for the most part, we've come to welcome it – particularly among the younger generation leading the nation onto a global stage.

Adaptability and creativity have also been key in Brazil's homegrown

“Brazil is a nation of early adopters. This is a population for which so much is new that adaptability has become second nature. Change is something we all accept now – particularly the younger generation leading the nation onto a global stage.”



advertising market. It's a \$20bn market that's home to award-winning, world-class agencies, although online ads still represent less than 15 percent of total ad revenues. Brazilian agencies have had to grow used to creative thinking recently, because about five years ago the mayor of São Paulo – our largest city, and the seventh most populous in the world – passed the Clean City Law, which banned outdoor advertising. That means no billboards by the road, no advertisements on the side of buses, and no posters around town.

Brazilian marketers have had to seek out new points of entry in São Paulo, including, in many cases, social media and mobile channels. The 'guerrilla marketing' that so many agencies across the world try to capture in order to create a unique momentum for their clients is something that's been less of an ideal and more of a necessity in Brazil.

But smart marketers here know where to look: Online. Brazil is among the top five international users for nearly all our services at Google, from Search to YouTube to Maps. YouTube in particular is a key asset because Brazilians are absolutely addicted to online video. Even though our broadband connections still aren't on par with many countries (though a government-subsidized broadband plan announced last year may change this), we're still YouTube's fourth biggest audience worldwide. In February, we live-streamed six days of Carnaval on YouTube, Orkut, and Google+, letting our remote viewers identify themselves on a map to show just how global this Brazilian cultural touchstone was becoming.

The confluence of digital media with a rising middle class has led to a particularly disruptive effect on marketers. Brazilians know what products are hot in other markets, and they want them, too. "Because they're so connected they want the same things they're seeing in other marketplaces," says Nike's Arturo Nunez. "Before, we'd do staged approaches to launching products. Today, Brazilian consumers are up there with everyone else in terms of their knowledge of these initiatives and their hunger and desire to have them in the marketplace."

Right now in Brazil, we're excited. The 2016 Olympics will be the first time that the Games have ever been held in South America, and the 2014 World Cup will be the first time that the tournament has come to our continent since Argentina in 1978. But we have a lot of work to do in the next few years, and much of this involves things that marketers can't control. We still have economic policies that can deter outside investment, and when you see some of the legacy infrastructure here (like Guarulhos airport in São Paulo) you might wonder how it can possibly sustain the crowds for a major sporting event.

But what we Brazilian marketers can do is welcome everyone who's interested in our culture, our digitally savvy population, and our exciting future, and properly educate them so that they keep their eyes on Brazil long after the World Cup and the Olympic Games are over.

Part of that education means understanding some of the dangers inherent in the Brazilian market – and especially what sort of messaging to avoid. According to Cristiano Dias, a technologist with JWT Brazil, "The number one mistake is that people still look at us as one big Latin America, and Brazilians feel almost offended by that. We are so proud of our culture and the fact that this culture is different from the rest of the continent. We were colonized by Portugal, not Spain, and we have way more African influence, Italian immigration, Japanese immigration, and all that. We pretty much don't consume what is called 'Hispanic' culture, like music and TV."

For Nunez, the whole of Latin America is important – Mexico is big; so is Argentina – but Brazil is in its own league, both in terms of growth and global relevance, and it has brand power. He likes to say that, when picking favorites, people often rank Brazil's soccer team as a close second to their home nation's. "Brazil was always said to be the market of the future," Nunez says. "But to me, that future has arrived." ☺



Crafting Contagious

In an exclusive insight from his upcoming book, Jonah Berger, Assistant Professor of Marketing at the Wharton School of the University of Pennsylvania, considers what makes us press 'play' on viral videos.

WORDS BY *Jonah Berger*
ILLUSTRATION BY *Brent Couchman*

Everyone from Fortune 500 companies to the corner coffee shop has realized that word-of-mouth helps things become popular – in fact, it's up to 30 times more effective than traditional advertising. It impacts the products consumers buy, the behaviors they engage in, the candidates they vote for, and the ideas they discuss.

The question, though, is how do you get it. What makes people talk about some things rather than others? What makes online content viral? The answer lies in understanding the psychology of social transmission.

In the past five years, my colleagues and I at Wharton have examined hundreds of brands, thousands of news articles, and millions of purchases. All to understand why people talk about and share certain things more than others. By applying this knowledge to their own products and ideas, marketers no longer need to rely on getting lucky online; they can craft contagious content that is more likely to diffuse.

We've found that there are six key steps to making contagious content, and we'll be

analyzing them in detail in a book published next year. Here, I want to give you an early insight into one of the most important.

On its website, the *New York Times* lists its 'most emailed' articles over the past 24 hours, week, and month. By coding 7,000 articles over a three-month period on various dimensions, backed by rigorous statistical analyses, we gained an insight into what drives people to share.

Our results found that articles, ads, or information that evoke emotion in the reader are around 20 percent more likely to be highly shared. Take the success of Coca-Cola's 'Happiness Machine' advertisement (in which a Coke machine on a college campus starts dispensing 'happiness' in the form of extra bottles of Coke or bunches of flowers), or British singer Susan Boyle, who emerged from nowhere to become a viral sensation. What we see in these cases, and many more, is that feeling drives sharing.

But our results also showed that not all emotions drive sharing equally. Certain emotions increase sharing while others may actually decrease it.

You might imagine that positive emotions increase sharing while negative emotions decrease it. But it's not that simple. People often actually share things that make them feel bad rather than good. The gruesome story of Joseph Kony (the Ugandan guerrilla leader who 'starred' in a video that became the fastest ever to reach 100 million views online) makes people angry, yet a few months ago you couldn't go anywhere on the web without seeing it discussed.

The difference between emotions that increase and decrease sharing is something psychologists call 'physiological arousal.' Some emotions, like excitement, are arousing or activating: When your pulse is racing and your blood is pumping, you're ready for action. Other emotions are deactivating. Contentment is a positive emotion but it doesn't make you want to do very much. You might feel great after a massage, but in that relaxed state you just want to pause and soak the world in.

Emotional arousal drives sharing. Activating emotions leads people to share while deactivating emotions reduces sharing. The same thing is true for negative emotions as well. Ever wonder why people are more likely to share an angry customer service experience than something that makes them sad? Anger is activating while sadness is deactivating.

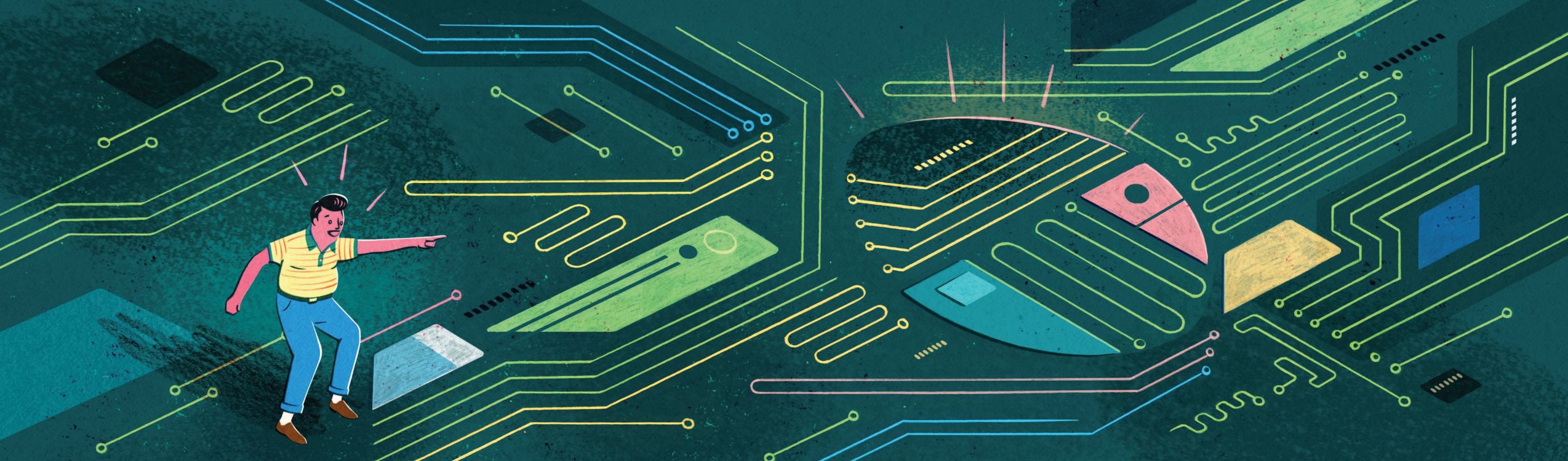
This is only one of the insights our research has uncovered, but it has clear and important implications. Whether you're selling soda, car insurance, or a presidential candidate, evoking emotion increases word-of-mouth. But when thinking about how to evoke emotion, make sure you use activating rather than deactivating ones. You want to make people excited rather than content. Even negative emotions can drive sharing if harnessed correctly. If something makes people feel angry, or anxious, they'll be more likely to pass it along.

So next time you're thinking about how to make people share your online content, think beyond cats and hype. By understanding why people talk about and share things, you can make your own content more contagious.

Jonah Berger's *Contagious: How to make products, ideas, and behaviors catch on* will be published by Simon & Schuster in March 2013.

*...I made this
and I love it... p.65*

JON WILEY



Hidden Meaning

From lovable droids to spinning web pages, Easter eggs are the playful bits of buried treasure that can forge a more emotional connection between brands and consumers.

WORDS BY *Jon Wiley* | ILLUSTRATION BY *Owen Gatley*

Close Encounters of the Third Kind is Steven Spielberg's classic sci-fi film about a journey into the extraordinary. In the climactic scene, everything becomes eerily quiet as our protagonist (played by Richard Dreyfuss) is left awestruck when the vast alien mothership is revealed. We see the curved exterior, festooned with lights and protrusions of unknown technology, as well as a small, upside-down R2-D2 clinging to the bottom.

Wait... what? Yup, there it is. If you blink, you'll miss it, but there's a small model of the lovable droid from *Star Wars* glued to the underside of the ship. The person who built the model used for filming shots of the mothership was clearly a *Star Wars* fan. Perhaps it was Spielberg himself, in a nod to his colleague George Lucas.

This is an Easter egg – a hidden message, image, or figure that usually represents an in-joke, cultural reference, or personal connection. It's something that creators intentionally insert into their work, but it isn't the focus of the work itself. The best Easter eggs are clever or delightful in a manner that is special to both the people who put them there and

those in-the-know users who find them, creating a bond between creators and fans.

The name is derived from the traditional hunt for painted eggs at Easter. The nature of software development – particularly the creation of video games – has provided ample opportunity for software engineers and designers to include Easter eggs in their creations. Software is complex and games are a natural place to leave puzzles behind. Hiding away a little message is relatively easy to do and can often go unnoticed.

Classic Easter eggs include pictures of the development team locked away in the memory of the early Apple Macintosh, or the 3D text screensaver on many versions of Microsoft Windows, which would cycle through names of the world's volcanoes if you typed 'volcano' as the text to display.

Google prides itself on being a playful company, and the engineering and design teams have a long history of inserting Easter eggs here and there. Perhaps you've tried to get directions from Google Maps for traveling between New York and Tokyo. Or maybe you were curious to see what happens when searching Google for

'do a barrel roll.' You may have wanted to know more about 'recursion.'

The very first Google Easter egg is believed to be 'the answer to life, the universe, and everything.' If you type that phrase into the search bar, Google will tell you it's '42' – a reference to Douglas Adams' *The Hitchhiker's Guide to the Galaxy*. Some Easter eggs are targeted at a specific locale. In the UK, if you search for 'jason isaacs' you'll be greeted with the message 'Hello to Jason Isaacs,' a reference to an in-joke popularized by BBC Radio Five Live's *Film Review*.

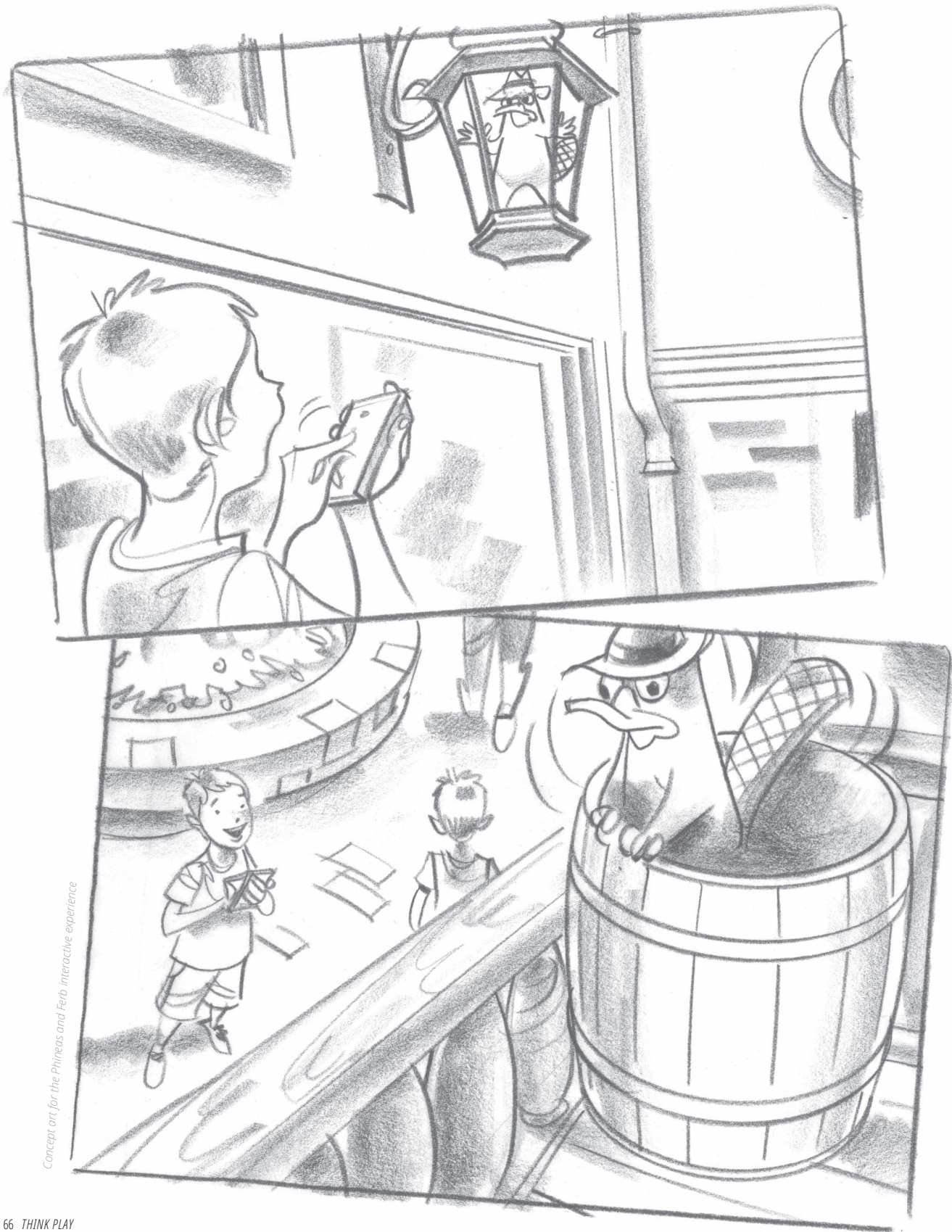
There isn't any single rule at Google governing the insertion of Easter eggs, but it's important that they don't negatively impact search. According to Google veteran Matt Cutts, "We were worried that Easter eggs would send the signal that we didn't take our 'duty toward search' seriously, so we've always been selective in using them."

Easter eggs can be a way for software engineers and designers to put a bit of their own personality into the product through humor and wit. They're a way of saying, 'I made this and I love it.' Their hidden nature means that those who discover them are likely to be people who spend a lot of time using the product.

This act of discovery is great for building an emotional connection between the people who create software products and the people who use them. Finding an Easter egg is a great experience – like finding buried treasure – and sharing that experience can be fun, too. It's a little gift for true fans that goes a long way towards making people feel like they're part of the club.

Easter eggs are a way to strengthen brands and build customer loyalty, particularly for software applications. They show personality, they delight and they can turn everyday users into passionate fans. That said, Easter eggs can be overused. Successful Easter eggs are genuine. They're the product of a creative/inquiring mind, for people who'll appreciate the joke. Veer towards too many and they seem manufactured. Zero-in on them too easily and there's no opportunity to create that sense of secret knowledge. But a well-placed Easter egg can have a large and lasting positive impact.

And as the *Close Encounters* example shows, Easter eggs can show up anywhere. Even in articles about Easter eggs 🍳



Concept art for the Phineas and Ferb interactive experience

A World of Pure Imagineering

From mobile apps to fortune-telling robots, Disney's Imagineers are using digital technology to create unique, but very human, experiences across its theme parks.

WORDS BY *Cyrus Shahrads*

If you ever came face-to-face with Lucky, an eight-foot-tall animatronic dinosaur first spotted in Disney theme parks in 2005, you're unlikely to have forgotten the experience. Lumbering into view with thunderous feet and a friendly bellow, Lucky was able to enact a complex series of interactions with both his human handler and individual audience members. The high-tech gadgetry that made this magic happen was hidden in the flower cart he dragged behind him.

Though now retired, Lucky was the first freestanding character of its kind built by Imagineering – the arm of Disney responsible for creating and maintaining the worlds within its parks. He represented an evolutionary leap from the tentative experiments in animatronics conducted by Uncle Walt himself, which culminated in a flustered Julie Andrews being forced to sing 'A Spoonful of Sugar' with a robotic robin perched on her fingers, an abundance of wires concealed about her person to keep it tweeting and twitching.

And yet for all the progress made in the half century since *Mary Poppins*, Lucky is a character entirely in keeping with the Disney ethos of employing new

technologies to engage one of our oldest instincts: The imagination.

Walt created the Imagineering department in 1952 to oversee the design and construction of Disneyland. Its history of innovations includes the development of Audio-Animatronics (most famously in the Pirates of the Caribbean ride), the FastPass virtual line system, and a total-immersion filmmaking technique known as 'Circle-Vision 360.' Today, it acts as an R&D center of excellence, working across areas including ride systems, special effects, interactive technology, live entertainment, fiber optics, and advanced audio systems.

But it's not just a high-tech hub: Imagineering is Disney's right brain, the place where technology and creativity combine for a singular, higher purpose – to tell stories. It is these stories that bring Walt Disney's world to life across 11 theme parks, one town, three cruise ships, and dozens of hotels, water parks, shopping malls, and sports complexes.

And yet animatronic characters like Lucky are already considered relics from an earlier age. For Imagineers, the emphasis now

is on creating entirely autonomous agents that blend free-roaming robotic bodies with artificial intelligence, giving birth to characters that are able to wander the parks telling stories, answering questions, and generally ingratiating themselves with awe-struck audience members.

It may sound far-fetched, but the first steps have already been taken. Otto, an 'automatronic' robot, was first aired at Disney's annual expo in 2009, where he confounded audiences with his lifelike mannerisms. A year later, an autonomous fortune-telling robot called Destini proved capable of chatting and joking with visitors while reading their futures – all without a human handler in sight.

"The test stage is essential with characters like Otto and Destini," says Scott Trowbridge, Vice President of Research & Development at Imagineering. "Bringing them out to engage with guests is a way of measuring how convincing they are as personalities, and it helps develop those personalities through engagement with human visitors. We were amazed by the results: With Destini, we had people peering under the booth, refusing to believe there wasn't a human somewhere behind the scenes making him act the way he did. It got to the point where we had to ➤

show people the computer screens that were actually displaying these characters' decision-making processes to prove that they really were acting of their own accord."

But what seems amazing today will look mundane tomorrow. As advances in technology progress exponentially, the Imagineers are having to work harder and faster than ever to keep up.

"That famous Arthur C. Clarke quote about any sufficiently advanced technology being indistinguishable from magic, that's a mantra we live by," says Trowbridge. "Our guests are looking for us to deliver experiences that they can't find anywhere else, and we use a lot of technology to make that happen. But as the curve of technology and the speed of its advance increases, so do our audience's expectations, and we have to keep one step ahead of that curve, otherwise it's no longer magical.

"The benefit is that as those expectations rise and accelerate, so do the opportunities, and we're unique in the level of advanced research and development that we put specifically into the entertainment space. But the speed with which we implement that research and get the results out there in front of audiences is increasing, and increasing dramatically."

One of the recent challenges facing Imagineering has been rising to the expectations of a generation raised on immer-

"Our guests are looking for experiences that they can't find anywhere else, and we use a lot of technology to make that happen. But as the curve of technology increases, so do expectations. We have to keep one step ahead of that curve, otherwise it's no longer magical."

sive computer gaming. For many young people today, a story isn't unfolding satisfactorily unless they feel individually involved. Disney has long championed the personal experience at its parks: Visitors return again and again to brush up against believable embodiments of characters they've known and loved for years. Yet transforming those visitors from mere spectators into characters in their own right is a step the Imagineers are only now finding themselves able to realize.

"We will always be excellent storytellers, and there will always be people who want stories told to them really well," Trowbridge explains. "But by using new technologies, we also want to give visitors the opportunity to become active participants."

Sorcerers of the Magic Kingdom at Disneyworld is a case in point. Designed by Jonathan Ackley – whose previous work at LucasArts saw him build innovative roleplay environments in computer games such as *The Curse of Monkey Island* – the experience begins at the Secret Sorcerers training center on Main Street, where participants are told that a host of Disney villains are threatening to take over the Magic Kingdom. Those brave enough to volunteer their services are given a map of mystic portals and five collectible spell cards before being dispatched on one or more 15–25-minute missions that combine elements of statistical role-play, problem-solving, and treasure-hunting while exploring the park itself.

It's a clear instance of the Imagineers reacting to changed expectations, and an example of how the company's own definition of 'storytelling' has been forced to evolve. Yet the real challenge, says Trowbridge, is creating a system of stories in which no two visitors have the same experience, and in which there are no fixed outcomes: Stories that are written in real time through the actions of the participants themselves.

"Our ability to involve guests in more detailed, personalized stories has been limited, because there really hasn't been a way to manage and effectively deliver a thousand different stories at the same time. Now, through a combination of new technology and creative innovations, we're starting to offer our guests opportunities



Concept art and spell card for Sorcerers of the Magic Kingdom



to go deeper into the stories, and to play a more active part in the way they unfold, which is interesting, because in doing so we become less didactic storytellers and more story predictors, and we find ourselves authoring story systems rather than individual narratives."

The technology involved remains largely under wraps, but early play tests of an experience called 'Fortuna' offered some idea of what may be in store. Fortuna saw visitors racing around the park in a real-time search for lost pirate gold, following clues and solving riddles as they went. At certain points during the day, characters played by actors became involved – some trying to help guests; others trying to mislead them – and participants began to work together, sharing information and solving problems in groups. What differentiates this from, say, Sorcerers of the Magic Kingdom is that Fortuna was only partially scripted. Aided by story-generating computer software, the plot unfolded based on the decisions that players made as they went.

"Fortuna was an experiment in understanding how we might write a new form of emergent fiction," Trowbridge explains. "What we needed was a computer

"Through a combination of new technology and creative innovations, we're starting to offer our guests opportunities to go deeper into the stories, and to play a more active part in the way they unfold."

system to make the next step in anybody's story feel natural and organic, with all the right pacing and dramatic arc to make it seem like it's been expertly authored, even though it's actually emerging in real time. That's not that difficult if you're doing it for one story, but it becomes really interesting – which is code for 'hard' – when you try to make it happen for hundreds of thousands of stories that all interact."

And yet for all the futuristic promises of new technology, Trowbridge argues that the psychology of play as a shared experience hasn't changed very much since Disneyland first opened its gates over half a century ago. To that end, Disney is committed to developing mobile and social networking for use at its parks, but only insofar as they enhance, rather than eclipse, the human aspects of the experience.

The Mobile Magic app allows smartphone users to navigate the parks, track down shows and appearances by their favourite characters, secure places for FASTPASS attractions, and book meals in restaurants. But it stops short of giving visitors an excuse to spend more time staring at a screen instead of soaking up their surroundings or engaging with family and friends.

By the same token, the company continues to develop cutting-edge animatronic characters to entertain visitors – from free-roaming creatures like Otto to the audio-animatronic Mr Potato Head bantering with audience members as they queue for Toy Story Midway Mania – but never at the expense of its human cast members, who Trowbridge insists remain at the heart of the Disney experience.

"The world of Disney is all about delivering stories and creating connections – between you and the characters in our world, and between you and your friends or family visiting the parks. There's no better way to create those connections than through another human being. Our live characters are the most important part of our parks and resorts; they're the enablers and the core of the guest experience that we deliver. So we're going to have to get really, really good at our robotics programs before we're in a position to start replacing our human staff. We'll probably replace our Imagineers with robots before we replace our cast members." ©



Otto the automaton robot wowed audiences at Disney's annual expo in 2009 with his convincing personality

Brain Games

Whether in the office, on the sports field, or simply relaxing at home, brain training will soon be an integral part of your daily routine. That's the bold promise of San Francisco-based Lumos Labs.

WORDS BY *Ian Wylie* | ILLUSTRATION BY *Dan Matutina*

In the US, patients with neurological conditions, professional athletes, and anyone interested in improving the way their brain works are increasingly being given a prescription to play. Welcome to the contentious field of cognitive training.

Proponents claim that a daily dose of computer games can make you more focused, boost memory and processing speed, quicken your decision-making, and improve your problem-solving ability. "Outrageous hyperbole," say cynics for whom the notion that brain performance can be altered through play is a frivolous misreading of the facts.

One thing we do know for sure is that more than 20 million people regularly play Lumosity, a web- and mobile-based suite of 35 brain training games developed by San Francisco's Lumos Labs. These \$10-a-month subscribers hope that by chasing virtual birds and forming words from letters in bubbles they can arrest decline in brain performance.

Aptly described by online magazine *Health Guidance* as a kind of 'social networking site for the brain,' Lumosity is a uniquely digital creation. With its funky interface (mobile-friendly buttons, colorful graphs) and comprehensive personalization options, it marries cutting-edge neuroscience with forward-thinking UX design for a seamless online experience.

Once users have created a profile, they can track their training regime across ar-

reas including speed, attention, memory, problem-solving, and flexibility. Lumosity's central claim is that it can improve intelligence by 'challenging cognitive faculties using exercises in which the difficulty level constantly adapts to each person's individual development.' By pitting itself against increasingly difficult problems, they say, the brain can actually reshape itself to become more efficient, improving cognitive power.

It's something that, until recently, scientists believed was impossible in adults, so it's only natural that this young discipline has encountered skepticism, says Joe Hardy, VP of Research and Development at Lumos Labs. "When I graduated in 2002, we were taught that the brain was relatively fixed. Now we know it is very adaptable," he says, referring to the science of neuroplasticity, the brain's lifelong ability to reshape neural connections when faced with new experiences. "And with functional MRI technology, you can actually see the changes to brains that take place during training."

Scientists used to think that a dip in brain performance was caused by loss of cells as we get older. In fact, it's a problem of retrieval, not storage, as aging decreases the level of chemical messengers in our brains. But cognitive training, claim advocates, can lead to the release of dopamine – a neurotransmitter. Thus, given the right challenge, the brain can actually become faster and more efficient.

Hardy tells many stories of subscribers who believe cognitive training has benefited them: A 23-year-old entrepreneur



who struggled with name recognition when networking; a 34-year-old financial trader who uses Lumosity to quicken his deal-making reflexes; a 28-year-old boxer recovering from concussion; a 45-year-old writer battling aphasia following a traumatic brain injury.

In an effort to confound detractors, Lumos Labs has rolled out what it calls an 'open science model,' providing relevant clinicians – including psychologists, occupational therapists, speech pathologists, and neuropsychologists – with access to free trials of Lumosity in exchange for feedback on how it impacts patients. Hardy says the company has collaborations with research institutions on most continents. ("We're still looking for that Antarctic connection," he jokes.)

their brain. The goal is to train the brain into finding that sweet spot where the athlete is focused but relaxed.

In North Carolina, the RCR NASCAR pit crew, who need to be able to remove five lug nuts in a single second, have been learning how to focus better using BodyWave – an iPod-sized tool strapped to their arms that measures neurotransmissions flowing through the central nervous system to determine concentration peaks. A similar tool is being developed for golfers: Before making a putt, a player wearing BodyWave would wait for the green light indicating full concentration.

And in the workplace, too, companies are beginning to see merit in using cognitive training to help employees become

"We used to be taught that the brain was relatively fixed. Now we know it is very adaptable. With functional MRI technology, you can actually see the changes to brains that take place during training."

In sports, professional athletes are discovering that the brain is essentially a muscle, like our legs and arms, and like any muscle, it needs to be exercised. Cognitive areas such as memory, reaction time, and coordination can all be trained.

Santa Monica-based research organization Neurotopia runs a laboratory for Red Bull's extreme sports athletes in which training begins with 'neurofeedback' and 'EEG brain-mapping' to check levels of focus, endurance, stress recovery, and reaction speed. From this baseline test, a bespoke interactive video game is developed for each athlete (such as flying a spaceship through an obstacle course) controlled by

'executive athletes.' At SAP in Melbourne, Australia, for example, workers have undergone a range of cognitive tests and training, learning how to deal with stress and manage conflict. Similar training has been trialled by executives at National Australia Bank, Cisco, and Accenture.

"As the world becomes more information-rich and complex, cognitive training will become integrated in all kinds of processes, from healthcare and education to workplace performance," promises Joe Hardy. "In five or 10 years, everyone will be engaged in cognitive training." Whatever its detractors may think, brain training clearly isn't done with bold claims yet.

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The Play Issue

The iconic Brazilian-flag flip-flops were originally created by Havaianas to support Brazil in the 1998 World Cup soccer tournament (they lost in the final).

Havaianas

The 1984 Olympics in Los Angeles was the first Olympic Games to rely on corporate sponsorships to defray costs.

LA Times,
October 2001



There will be 1,854 wireless access points at the London Olympics.

LOCOG



The tallest LEGO structure ever built was unveiled at Legoland Windsor, UK, in 2008. It reached nearly 100-feet.

Daily Mail,
May 2008

The last time London hosted the Olympic Games was in 1948, when it was still recovering from World War II.

International Olympic Committee Historical Archives

The 'Sprite Intensity Meter' measures the force of a slam dunk on a scale of zero to 100 'slam force' 6s, which is the equivalent of a .22 caliber round being fired.

Wired, February 2012

Six gigabytes of data will be generated every second during the Olympics.

LOCOG



During his winning streak in February 2012, searches for New York Knicks point guard Jeremy Lin skyrocketed 2,000 percent.

Google Insights for Search

The Olympics will be covered by 21,000 accredited broadcasters - almost double the number of actual competitors.

LOCOG

The official site for this year's summer Olympics, London2012.com, is expected to receive 300 million unique visitors during the Games.

LOCOG

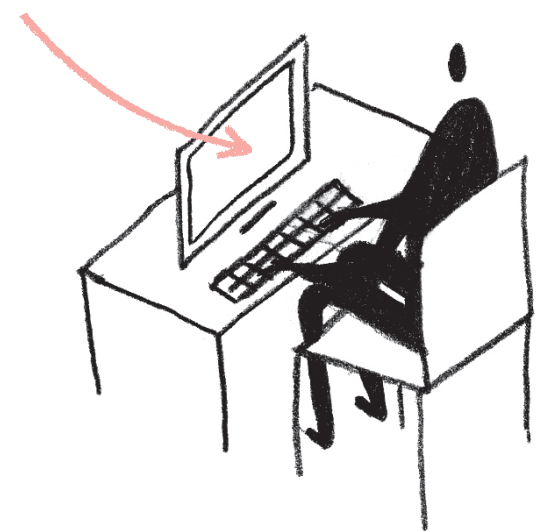
'Keyboard Cat,' a viral video with over 23 million views on YouTube, was originally filmed in 1984.

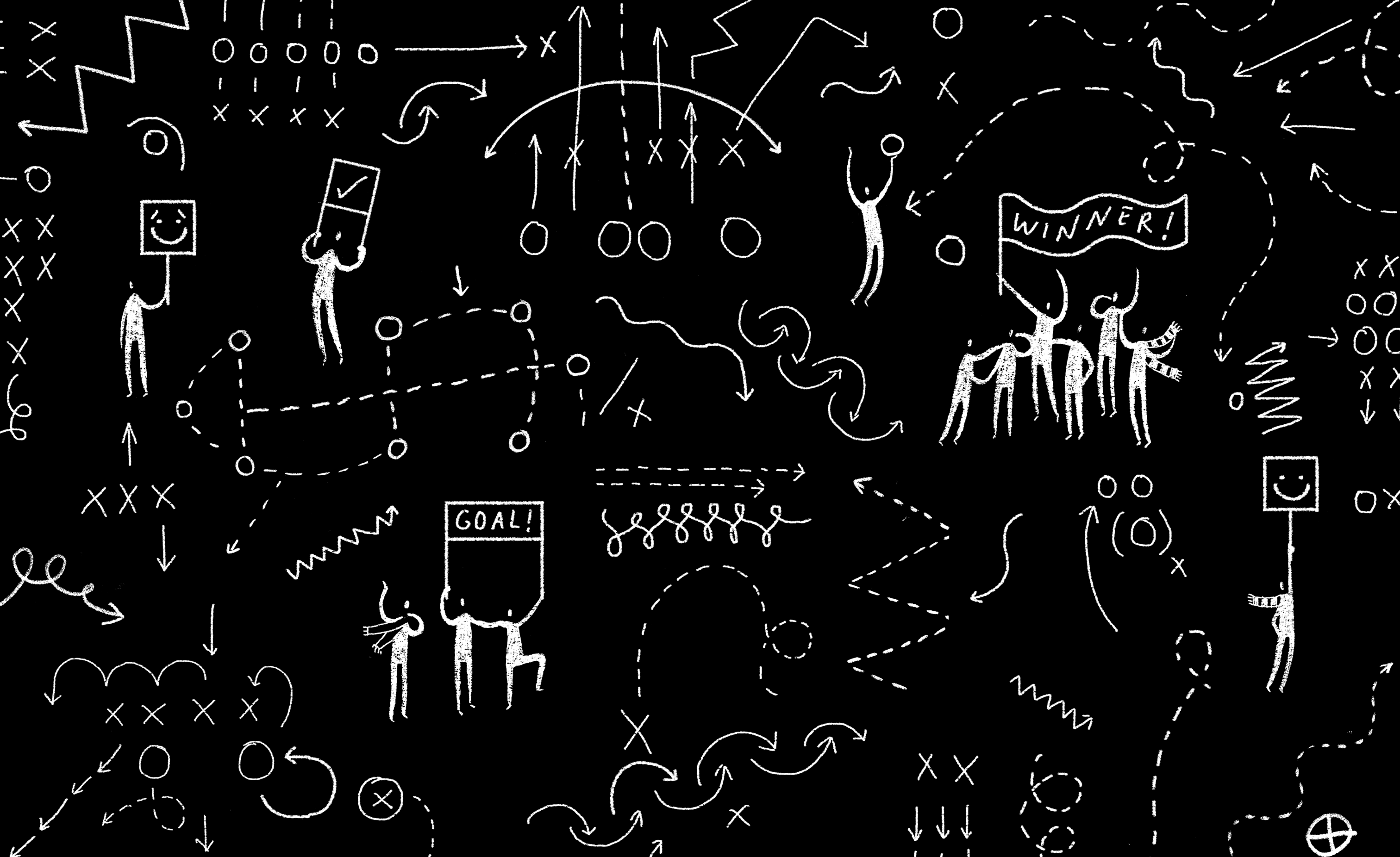
YouTube views via the Guardian, May 2009

Sports that have been part of the Olympic Games at one point but were discontinued include cricket, polo, lacrosse, and tug-of-war.

The Economist,
August 2008

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let's play hangman!



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