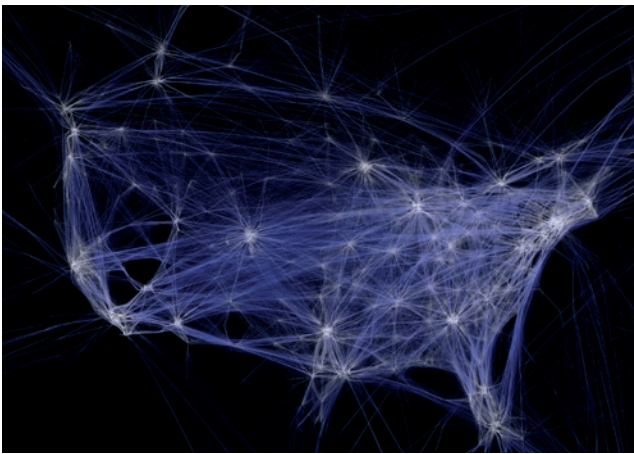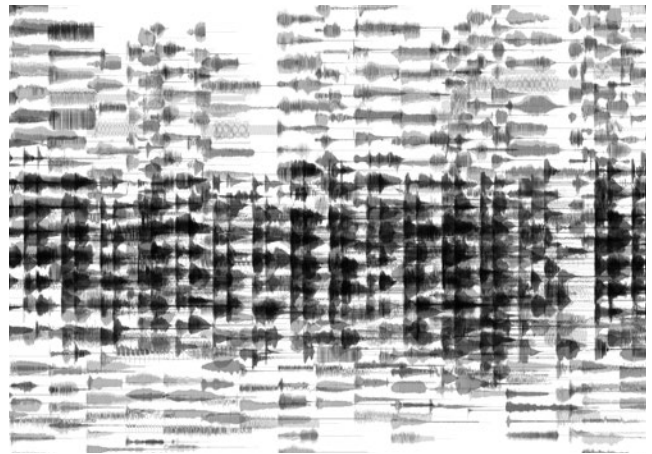# Data Visions

Data provided by new technologies isn't just good for marketers; it's inspiring a new generation of digital artists determined to reshape the way we see the world.

WORDS AND IMAGES BY *Aaron Koblin*

Flight Patterns, 2005

Bicycle Built for Two Thousand, 2009

Points of light illuminate a dark screen, erupting like digital fireworks. A clock counts down the night-time hours towards dawn. At 6am, the darkness erupts into streaks of light chasing each other across the screen. At first, they seem chaotic but gradually the familiar outline of America's coasts reveal themselves. The country has awoken, the day has begun, and thousands of planes have taken to the skies, carrying their passengers in complex traceries represented by an ever-multiplying spiderweb of light.

This is *Flight Patterns*, a visualization based on airplane location data. It's visually stunning, but it also tells us something interesting about our working life as a country.

Data analysis and visualization have become indispensable tools in science and business, but in the hands of a new generation of digital artists, data is undergoing a metamorphosis – from a unit of information into a fascinating, beautiful, and expressive medium.

Artists like Ben Fry, who used US Census data to create *All Streets*, a visualization of every road in the continental United States. Like

Robert Hodgin, who created the 'Magnetosphere' visualizer in iTunes, which uses music as its data source. Or David Bowen, who has created kinetic sculptures using wave data. And Nicholas Felton, who tracks the data generated by his everyday activities – what he eats, who he meets, where he goes – to create beautiful annual reports of his life. These artists are at the forefront of data-driven digital art, yet most of us would agree we've barely scratched the surface of what's possible.

Technology is key. Sophisticated sensors allow us to collect more data than ever before, while faster ➡

Ten Thousand Cents, 2008
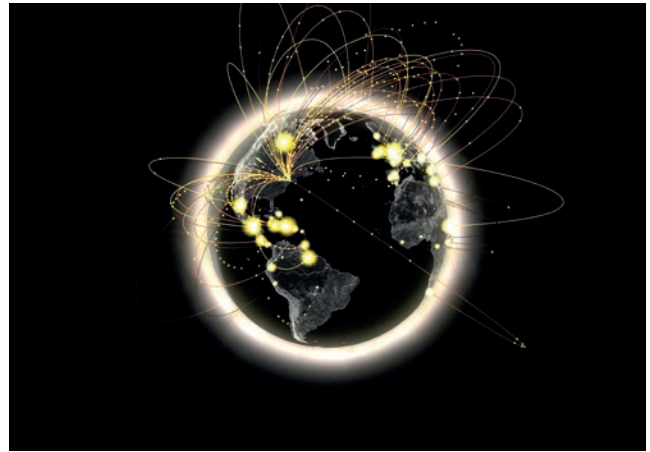
New York Talk Exchange, 2008

computers make it easier to process, and new software and programming languages give artists seemingly unlimited options for visualizing their work. Projects that were simply inconceivable a few years ago are now being realized, and while you might find the end result in a gallery, digital artists are actually more interested in the web, not just as a forum to display their art, but as a collaborative medium in itself.

Since graduating from UCLA's Design Media Arts program in 2006, I've worked on a number of projects that use data as a medium for artistic expression. I've worked with real-world data, not just flight information, but phone calls (*New York Talk Exchange*) and laser scanners (*House of Cards*). I've also worked with crowdsourced data, including drawings (*The Johnny Cash Project*) and sound clips (*Bicycle Built for 2000*).

As the head of Google's Data Arts Team, I also use the web to showcase Google technologies from the perspective of a digital artist. Together with director Chris Milk [see p.26], my team and our agency collaborators have created two interactive music videos built specifically for the Google Chrome browser. The first one, *The*

Wilderness Downtown, uses Google Street View to put the experience in front of any address inputted by the user. The second, *Three Dreams of Black*, uses a browser technology called WebGL to render interactive 3D worlds for the user to explore while watching the story.

This is a 'magic first, logo second' approach to marketing: We strive to build amazing experiences that belong in a museum more than a marketing presentation. *The Wilderness Downtown*, for example, won the Interactive Grand Prix at Cannes in 2011, and later that year was showcased in an exhibit at the Museum of Modern Art in New York. Every marketing executive should ask themselves whether they're genuinely excited by the work their brand has a hand in creating; if not, how can you expect your audience, who has far less affinity for your brand than you do, to be excited as well?

I became a data artist because I was interested in using computer simulation in creative ways. When I was in school, artists like Casey Reas and Marius Watz were making works of generative art using code and mathematics

to build artificial systems filled with beauty and complexity. Their creations inspired me to work with real-world data, information that's recognizable to all of us but tells a story that we may not have seen before or gives us a different perspective on the world around us. At its best, data art tells the viewer something new about our culture, how we live our lives, and how we see the world.

Now we're set to see an explosion in data art. In the future, everything will share data – our heartbeats will be recordable; everyday appliances like cars and refrigerators will stream data online; if a device processes information of any kind, it will soon have the ability to share it. New types of creativity are waiting to be uncovered by anyone who takes this new technology and uses it to re-think old rules.

To become a data artist, all you need is a little bit of practical knowledge and a whole heap of imagination. Look around you: What data is available? Try representing it, somehow, any way you can, even if it's with pencil and paper. If you're interested in learning computer programming, download Processing and try some of the tutorials. You'll be surprised at what you can create, and the new things you'll see ⓖ