Stanford SOCIAL INNOVATION REVIEW

10th Anniversary Essays
Consumer Rising: From Consumption to Production to Design
By Jeff Howe & Joi Ito

Stanford Social Innovation Review
Spring 2013

Connectivity drives change. Ironically, the newest technology can be an antidote to existential threats brought about by modernity: climate change, pandemics, nuclear proliferation, water security, and regional conflicts like the Middle East that can rapidly become global wars. The Skoll Global Threats Fund was created by Jeff Skoll to combat these global threats. These great challenges cannot be met without planet-wide connectivity, participation, and the most effective innovations.

Whether you fight for animal or human rights, work on poor eyesight or mental illness, challenge the government for wrongs local or global, seek to lessen the burden on the poor, or battle to bring water, health care, and education to those who need it, you are a changemaker, part of the warp and weft of social change. Social change is far more than technology and longer than a 50-year story. Trying to improve our children's future is as old as history. We engage in it because we are activists and, deep inside, optimists. The Rev. King wasn't saying that changemakers could sit back and passively observe the arc of history bending toward justice; his life was a call for us, the changemakers, to act, to leap up to that arc, wrap our arms around it, twist it and pull it down, bending it toward justice.

This is the part of "doing" social change that we have signed up for.

Dr. Larry Brilliant is president of the Skoll Global Threats Fund and senior advisor to Jeff Skoll. Before joining Skoll, he was the founding executive director of Google.org.

CONSUMER RISING: FROM CONSUMPTION TO PRODUCTION TO DESIGN

BY JEFF HOWE & JOI ITO

In 1909, Henry Ford famously told his management team, "Any customer can have a car painted any color that he wants so long as it is black." The joke is rich in irony, for the precise reason that it's not at all a joke.

Until recently, the process of product design has followed a similar non-trajectory. Product design changed little over the twentieth century, despite the wealth of choices that now confront consumers. Products are conceived, designed, and tested within a black box of corporate secrecy before being carefully "launched" to the public. Under this model, there is one channel for the consumer's

input: her money. She might vote with her wallet, but she had no opportunity to influence the ticket. But the advent of digital and communications technologies is allowing consumers to encroach on this process. Working backward from marketing to production to design, a few examples will illustrate our meaning:

> The last five years have seen an explosive interest in home fabrication, as everything from beer to electronic hardware to open source software projects is produced by individuals or small teams.
>
> —JEFF HOWE, JOI ITO, MIT Media Lab

● The rise of social media has made marketing a largely collaborative process, in which consumers are enlisted via various platforms not only to promulgate a message, but to tweak it as well. Indeed, some advertising agencies specialize in crowdsourced campaigns, in which consumers actually conceive and execute the campaign itself, with nominal management from the client and agency.

● The last five years have seen an explosive interest in home fabrication, as everything from beer to electronic hardware to

open source software projects is produced by individuals or small teams—a dynamic that harkens back to a pre-industrial economy, in which cottage industries were the norm.

● Consumers are playing an increasingly crucial role in the very design of products. As early as 1986, the MIT economist Eric von Hippel showed that innovations within the integrated circuit board industry were driven not by a firm's engineers but by the consumers of the chips—who were innovating before the firms could respond—as well as by the ability of the firms to customize the standard chips. The firms capitalized on this phenomenon by integrating these innovations into subsequent product releases. Von Hippel calls this "lead user innovation."

It is this final development—in which users design their own products—that could trigger the most disruption. Von Hippel focused on "lead users" for the simple reason that, as of even five years ago, only a small percentage of customers possessed the knowledge and capital (in the form of expensive design software) to design innovations.

This is no longer the case. At 10 percent of the price, Google

SketchUp can perform many of the same functions as a $4,500 AutoCAD system. Prototypes can be made with increasingly affordable 3D printers, then publicized via social media and funded by Kickstarter campaigns. None of this will threaten existing manufacturing or design firms in the near term, but in the long or even medium term, it points to a decentralization and de-capitalization of manufacturing, a de-professionalization of design, and a radical democratization of the way products are created, bought, and sold.

JEFF HOWE is the author of *Crowdsourcing: How the Power of the Crowd is Driving the Future of Business,* a professor at Northeastern University, and a visiting scholar at the MIT Media Lab.

JOI ITO is director of the MIT Media Lab; he is a leading thinker and writer on innovation and global technology policy.

• • • • • • • • • • •

THE MOBILE CONTINENT

BY ERIK HERSMAN

Africa today is a continent that evokes a collective sigh at the inefficiencies and idiosyncrasies of its past and present while it offers a glimpse of an astounding future.

Everything changes, or so goes the truism. But Africa is changing faster and more furiously than anyone imagined. Africans are acting like equals in business, government, and culture. They deserve a place at the table, and increasingly they are getting one. Some North Americans and Europeans feel unsettled when they realize that Africa isn't just getting better; it's getting better at certain things.

What happened? Mobile happened. That's the one new input that has disrupted much of African culture, business, and politics. The one meaningful change in the algorithm of Africa that no one expected is the cellular telephone.

Context is important. In the 1980s and '90s, computer and communications technology took hold in the West. But in Africa, if you ran a business, say in Kenya's cities or up-country, you were hard pressed to communicate efficiently with your suppliers. Lag time between customer demand and inventory levels was legendary. You could show up at one auto store to find that the owner had a mountain of supplies that would sit gathering dust for the next 10 years. Or you could show up at another auto store just 10 miles away and find that all its inventory had been snapped up and nothing was coming in for another two months.

In the 1980s and '90s, Africa didn't have the copper lines to support mass telephone communication. In 1993, my family had moved from Sudan to a middle-class neighborhood in Nairobi. It took three years for my dad to get a working telephone line in the house. If the line was cut, weeks would pass before someone came to fix it. But we were the lucky ones. In the early 1990s, there were only a couple of hundred thousand phone lines in all of Kenya.

In 1999, the first mobile operator license was granted to Safaricom and Kencell by the Kenyan government. Outsiders thought this was a crazy idea; no one believed that Africans could afford to pay for either phones or phone service. People in the United States and Europe could barely afford mobile. Little did we realize that the revolution had begun, although it would be five or six years before the tsunami arrived.

Today: In Ghana, Bright Simons runs mPedigree, a breakout business that verifies medicine and prevents counterfeits via SMS. In Kenya, Nivi Mukerjee has created an Android tablet called eLimu that helps primary school students prepare for crucial exams. In South Africa, Fundamo pioneered mobile money solutions for millions of people before being acquired by Visa.

Today: A small kiosk owner who sells soda in a Nairobi slum sends an SMS to a supplier, who in turn uses both mobile and web-based apps to talk to the bottler. This improved supply chain has shortened delivery time from five days to two.

Today: A man in Dar es Salaam, Tanzania, who used to take a bus up-country to bring cash to his mother and father now sends money over his mobile phone. He joins the millions of other mobile money users in Tanzania, the second-fastest-growing mobile money market in the world, behind Kenya and ahead of Uganda. Africa now leads the world in mobile money transfer.

Today: A female college student calls to confirm an interview before she leaves her dorm for the hour-long commute across the city. Previously, she might have wasted two hours traveling across the city only to find that her meeting had been cancelled.

> It's hard to overstate how much mobile phones have changed the shape and form of life in Africa. every stratum, every fiber of the fabric of life here has changed because of mobile phones.
>
> —ERIK HERSMAN, Ushahidi

It's a small change, something that most people in the West take for granted, but this kind of increased efficiency means a great deal for people across the African continent.

The pace of innovation and efficiency continues to accelerate, much to the discomfort of those who find comfort in the way things used to be. African politics, media, business, and society are feeling the effects of a digitally connected populace in which the ability to create and disseminate information is no longer just for the elite.

Now more than 35 tech hubs in Africa provide homes to bright-eyed and optimistic startup entrepreneurs, who are incubating, mentoring, and driving a new narrative of Africa. We started the