

PROMISE AND RESPONSIBILITIES IN OUR DIGITAL WORLD

OUR TAKE ON THE USI 2016 CONFERENCE

By Jean-François Bobier, Antoine Gourévitch, and François Stragier

A CORE IDEA OF THE digital era—one commonly treated as a universal truth—is that digital is making life better. And, no doubt, it is. Digital technologies have improved our access to knowledge, simplified transactions, brought people closer together, and given voice, often loud, to views and opinions. New opportunities for companies and individuals are emerging at an astounding pace. What’s the catch? Surely, as technology, business models, and usage continue to evolve and intertwine, there will be ramifications—not always positive—that we need to think about. And address.

Two dimensions of digital—the benefits and the potential side effects—were on the minds of many of the speakers at this year’s USI (Unexpected Sources of Innovation) conference, which took place in Paris on June 6 and 7.¹ Each year, USI brings together some of the world’s foremost thought leaders on digital transformation—transformation as it applies not only to business but also to society as a whole. It’s a forum that is well-known for both insight

and candor, and USI 2016, which featured 40 speakers, did not disappoint. Among the 1,200 who attended was a team from BCG (a sponsoring partner of the event). What follows is their take on some of the conference’s key messages—and caveats.

A Chip off the New Block

Bitcoin, the digital currency, is controversial, but the technology behind it, which is known as the blockchain, is being touted by many as a game changer: a platform with the potential to transform, and even upend, financial and social structures. Among the most ardent of this group is Don Tapscott. Indeed, the title of his USI talk, “Blockchain Revolution: How the Technology Behind Bitcoin Is Changing Money, Business, and the World,” certainly doesn’t hedge. Although some maintain that blockchain is a bit overhyped, there is no denying that it is a technology that warrants attention. As does its potential impact.

In essence, a blockchain is a public ledger of transactions that have been verified,

time-stamped, and linked together across a global network of computers: an internet of value, as Tapscott calls it. Blockchain transactions include the exchange of currency (as with bitcoin) or any other type of asset (such as a title deed or stock certificate). The real key to blockchain, says Tapscott, is that it negates the need for the intermediaries that typically authenticate the parties to a transaction, transfer the value, and—think credit card companies here—take their often-not-inconsequential cut.

Blockchain transactions are authenticated, executed, and stored right on the network. And the combination of distributed architecture and super-strong encryption, proponents contend, makes the record of these transactions virtually unhackable. (A recent theft from a Bitcoin exchange demonstrates that ultimately, security depends on how well the technology is implemented. In this case, the blockchain concept does not seem to be at fault.) Because intermediaries are no longer part of the equation, the value that would otherwise go to them is retained by those using the blockchain.

Tapscott believes that if we use the blockchain right, we can create a fairer world. He notes that the current system of intermediaries excludes 2.5 billion people—those who do not have bank accounts—from the global economy. Creating a platform to exchange assets in a trustworthy, secure way without powerful intermediaries would, he says, “be an incredible thing.”

It would also, Tapscott says, be a disruptive thing, changing not only people’s lives but, potentially, also industries. Banks, for example, now do much of what the blockchain can do. What would banks’ role—indeed, their future—be? Intermediaries between buyer and seller, or user and provider, are everywhere. Uber is an intermediary for car rides; Apple and Spotify are intermediaries for online music. Tapscott says that the disruptors will be disrupted. That remains to be seen. Many intermediaries are powerful indeed. But blockchain technology raises questions and possibilities that must not be ignored.

Building a Better Product

Many companies like to say that failure is not an option, but in many cases, it’s virtually a given. In fact, only some 20% of technology products actually meet their objectives, according to Marty Cagan, the founder of the Silicon Valley Product Group and a veteran of Hewlett-Packard, Netscape, and eBay. The cause of many failures, he says, isn’t a lack of talent. Rather it is the use of preinternet era processes, which not only go about innovation the wrong way but also actively hinder it.

One of the worst offenders, according to Cagan, is the roadmap, and he makes a persuasive case. While it is understandable that companies value roadmaps, which allow them to prioritize features and products and plan ahead, roadmaps actually cause serious, irreversible problems. For one thing, says Cagan, most of the items on a roadmap won’t actually work with customers—the result of design limitations or usability factors or simply because the idea, which was exciting to the executives who came up with it, is not exciting to customers. Then there’s the fact that teams get locked into unrealistic timetables, devised before anyone knows what the ultimate solution needs to look like. In many cases, management, losing patience over what are now seen as delays, pulls the plug on a product that—under other circumstances—might have been successful.

The solution involves more than tossing the roadmap, though it is certainly a good first step. You must look more to your engineers for ideas. They, more than anyone else, understand the technology. You must build a team of missionaries instead of mercenaries. If you’re using your engineers only to write code, you’re getting only half their value. You need to have them playing a much more central role in developing technology products. They need to be believers, not simply people doing their jobs.

Another thoughtful look at product creation came from Jon Kolko, the founder and director of the Austin Center for Design. Kolko’s idea is that empathy—real understanding of people’s needs—is crucial

to designing great products. Too often, technology guides the solution: a company has the ability to solve a problem in a new way, so it solves the problem that way. Is that solution what the user really requires? Using the empathetic approach to product development, companies spend meaningful time—not an hour or two but a day or more—with their customers and users. They observe them, talk with them, even accompany them as they go about their lives, learning how people view a problem they need to tackle. With these insights, the companies can move toward the creation of a responsive solution.

Both Kolko and Cagan raise important points. As technologies evolve and market pressures grow, the need to develop the right products in the right way mounts.

Who's Minding the Algorithm?

Sophisticated data modeling is used today to automate all manner of decision making: who gets a loan, who gets hired, what insurance rates should be, how teachers are evaluated. The list goes on. Data modeling is fast, and it's efficient. But are the answers always right or fair? In her talk, the cleverly titled "Weapons of Math Destruction," Cathy O'Neil asks a sobering question about the algorithms that are increasingly affecting our lives: What if they are wrong or, more likely, what if the interpretations of their results are wrong? The problem, she suggests, goes deeper than an algorithm whose code took an erroneous turn. It's the destructive cycle that results when these errors run unchecked: there is no accountability, no notice that things are amiss, and no fix because of blind faith in the data and the algorithm.

Models, O'Neil contends, are built with good intentions, but their workings can be opaque. Requests, such as loan applications, are processed en masse, and because so many of the decisions (say, approvals for those borrowers with strong credit) clearly look right, the harder calls are reinforced. The model looks spot on. Rarely does anyone look deep into the loop to make sure that the answers truly are right, nor is such

feedback integrated into the model. This situation might result in unfair results for individuals, but we see that it is also a lost opportunity for businesses. Consider the bank that keeps refusing loans to solvent people.

The call for algorithmic inspection and governance was also voiced by Alistair Croll in his talk "Big Data, Smart Agents, and Interruption: The Next Ten Years of Human-Computer Interaction." In Croll's view of the just-down-the-road future, it's not only technology that will evolve but also the human species.

Croll sees a trifecta of forces shaping the next decade of technology: big data, smart agents (or artificial intelligence), and so-called interruptive interfaces that tell us, with sensory cues (for example, the Apple Watch's buzzing the wearer's wrist to announce the arrival of new e-mail), what we need to know at the right time. These forces will combine in various ways, some of them extremely beneficial: an artificial intelligence, for example, that can make a diagnosis faster than a human oncologist. Such advances will let us do a better job of managing and supplementing scarce resources.

But at the same time, Croll warns us, we will grow increasingly dependent on tools that "whisper in our ear." These smart agents don't just simplify our lives; they *know* our lives. This Super-Siri isn't hard to imagine, not with the growing array of personal data that can be captured and processed: cell phone data that tracks where we have been, purchasing data that tells what we like to buy, health data, social media data, travel data, e-mail, and so on. Such tools will give us "super powers" like perfect recall (as we can just turn to our devices for information). They'll know what makes us happy. They'll help us optimize our lives.

Croll thinks that we—a society that is excited about these new tools and is actively embracing them—may be missing the big picture: this technology trifecta may lead us to become a kind of human-machine hybrid. He suggests that we start thinking

about the legal, ethical, privacy-related, and societal issues of that brave new world.

If a machine can direct us to the optimal path, and we get used to following it, Croll thinks that creativity may be stifled and that we will be less likely to make discoveries on our own. Thoughtfulness can change, too. If we get a digital reminder of a friend's birthday and we send a card, did we do that because we really cared? Or was it because we have good software?

Perhaps it is only fitting then, that the conference also featured the mathematician-philosopher Luc de Brabandere, a BCG Fellow. In his presentation, "Homo Informativus," he took us through a 4,000-year history of technology, showing how logic and mathematics were created by the major philosophers.² Even today, we can see their influence at work. For example, big data is largely focused on the idea of inferring causes (say, customers' needs) on the basis of effects (their purchases). That's a notion that stems from the work of Thomas Bayes, an English philosopher. But in a world of ever-increasingly capable smart agents, perhaps Brabandere's own notion will prove particularly relevant: if artificial intelligence becomes a reality one day, it is because we have decided not to use ours anymore.

Technology to Drive the Future

Among our favorite talks of the conference was Brad Templeton's presentation, "Robocars: The Coming Revolution of Cars That Drive Themselves." One reason for its appeal might be that it simply offered relief: here's a coming paradigm shift with seemingly little, if any, downside. And it's coming fast. Every major automotive company is working on autonomous-driving technology, as are major technology companies such as Google, whose test vehicles have already clocked some 3.6 million kilometers of driverless driving. Some of the technology is already in consumers' vehicles. Tesla, for instance, recently pushed out a software update to its cars (itself an action that would have seemed science fiction a decade ago) that enables semiautonomous driving.

Automated driving promises extensive benefits. Some are fairly obvious. Automotive safety, for instance, is expected to improve dramatically. Right now, some 40% of car accidents involve alcohol, which is not a concern for robot drivers. (A Tesla vehicle involved in a recent fatal accident employed sophisticated driver assistance—not true autonomous driving. Still, the event raises an important point: in robo-car software design and testing, there is little, if any, margin for error.) Productivity would increase, too, not because commutes would necessarily be shorter but because people can make better use of the time they would have spent driving. And it's a lot of time. One fascinating statistic Templeton offered: each year in the US, people spend 50 billion hours driving. By contrast, the annual labor output in the US totals 240 billion hours.

Then there are benefits that are not so obvious. Energy consumption and carbon emissions would be reduced because of the shift from buying cars to buying rides: some of the biggest names in auto manufacturing are pursuing a mobility-on-demand business model. Today, car buyers may buy an SUV because they go skiing twice a year. But every other day, they'd be fine using a compact car. If consumers stop buying cars that meet all of their needs for the next five years and start buying the rides they need today, fewer large cars will be needed, and smaller, lighter-weight, and greener cars will dominate the roadways. And because automated cars will be able to fuel themselves, the inconveniences of electric and biofuel-powered cars will no longer be relevant, making driving greener still.

Driverless cars don't care where they park, either, so after dropping us off at our center city offices, they can find somewhere a bit more remote and less inexpensive to wait for us. This means that fewer parking garages will be needed in the heart of the city, and land will be freed for other purposes. Property values, which are closely linked to travel times to employment hubs, are likely to be affected as well. If commuting becomes more convenient, there will be less reason to pay a premium to live

close to work. Real estate is just one of a long list of industries that will see changes due to automated driving.

Change is coming faster than we think, Templeton says, because this technology will be moving not at the speed of the conventional automotive industry but at the digital speed of the computer industry. It's Moore's Law on four wheels.

NOTES

1. For more information on USI 2016, including a full list of speakers and videos of selected presentations, please visit <http://www.usievents.com/en/>.

2. A visual representation of this history, created by cartoonbase.com, can be downloaded at <http://cartoonbase.com/en/informaticus/>.

About the Authors

Jean-François Bobier is a principal in the Paris office of The Boston Consulting Group and a core member of the Technology Advantage practice. He has worked for more than 15 years on IT, technology, and digital topics. You may reach him by e-mail at bobier.jean-francois@bcg.com.

Antoine Gourévitch is a senior partner and managing director in the firm's Paris office and leads the digital transformation and big data and analytics business in the Technology Advantage practice globally. He has more than 20 years' experience working with automotive companies and financial services firms on issues related to digital and IT. You may reach him by e-mail at gourevitch.antoine@bcg.com.

François Stragier is an associate director in BCG's Paris office and a core member of the Technology Advantage, Financial Institutions, and Operations practices. He has experience advising companies on projects related to digital and IT strategy, transformation, and sourcing. You may reach him by e-mail at stragier.francois@bcg.com.

The Boston Consulting Group (BCG) is a global management consulting firm and the world's leading advisor on business strategy. We partner with clients from the private, public, and not-for-profit sectors in all regions to identify their highest-value opportunities, address their most critical challenges, and transform their enterprises. Our customized approach combines deep insight into the dynamics of companies and markets with close collaboration at all levels of the client organization. This ensures that our clients achieve sustainable competitive advantage, build more capable organizations, and secure lasting results. Founded in 1963, BCG is a private company with 85 offices in 48 countries. For more information, please visit bcg.com.

© The Boston Consulting Group, Inc. 2016.
All rights reserved.
8/16