

10YF

## 2013 MAP OF THE DECADE

### **The future is life in an alternate reality.**

It's a trip across time and place to a new and alien planet, with new economies driven by unexpected forms of wealth and work and new geographies inhabited by unforeseen variations on the human form.

### **This is not a game.**

It's a global maneuver in which we will all participate, in which we will collectively create a new set of ground rules for operating at epic scales to meet epic challenges. You can think of this maneuver as the Second Curve—and you can think of this map as your passport from here to there.

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# The Curve of the Future

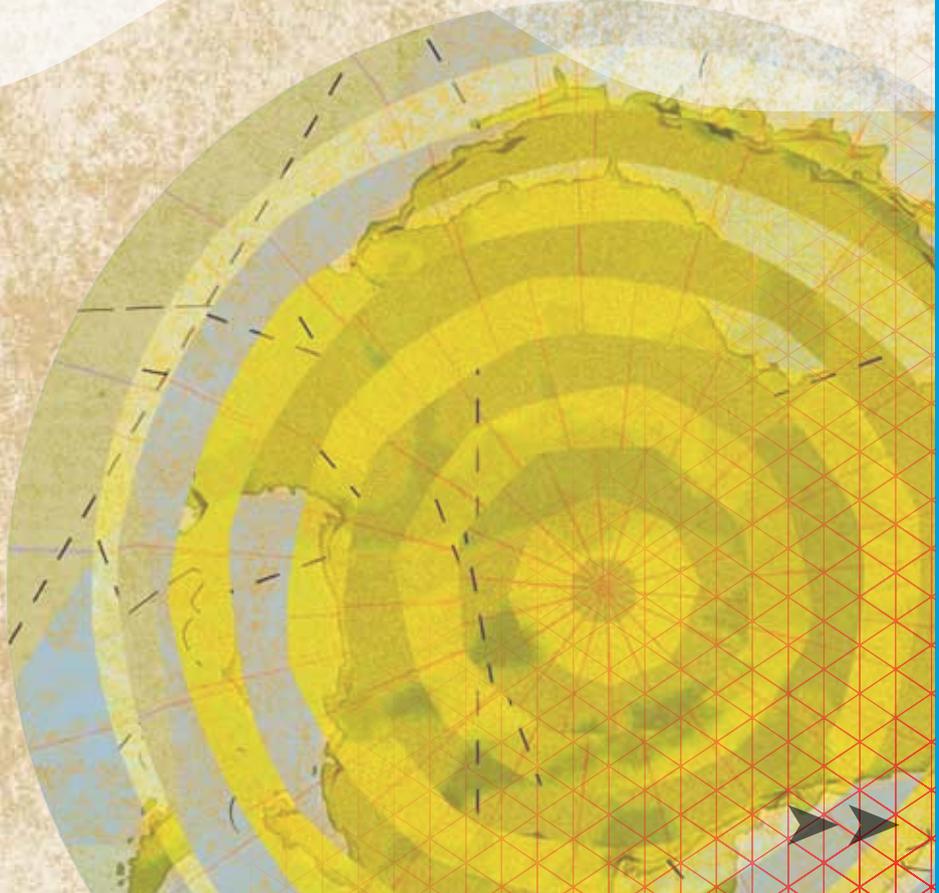
Civilization unfolds in cycles, in curves with modest beginnings, surprising inflection points, seemingly unassailable peaks, and surprising declines.

The past two centuries have seen the rise of an industrial civilization that has brought the world together in ways that the early explorers of the planet could never have imagined. But even as this first curve of globalization is still sweeping the world, a second curve is rising to displace it—to correct its mistakes, extend its lessons, and assure the continued evolution of the human species.

This Second Curve is already visible in unexpected hot spots of innovation around the world. But how will we recognize the transformational innovations? And where will they take us?

## Seven signposts point us in the direction of the Second Curve:

- Second Curve innovations explicitly **solve the critical problems of the next century**—climate, energy, urbanization, population, migration, information overload, surveillance, and crime—by departing from business as usual.
- They **recast the material world**, tapping the emerging bio- and nano-sciences.
- They **leverage global interconnection** to build new kinds of communities and new forms of commerce.
- They **embrace openness** to rapidly evolve our technologies, our institutions, and our economic capacity.
- They **build social value** as an alternative to economic value—or to amplify economic value.
- They **articulate more inclusive futures** that empower those currently excluded from the “mainstream future.”
- They **redefine “human”** in the rapidly shifting fitness landscape of the planet.



# An Unfolding Map of the World

As the Second Curve begins its ascent, it is redrawing the map of the economic, social, and even biological worlds. It is rendering our familiar conceptualizations of geography obsolete. Old map projections fade as new ways of seeing the world show us more clearly what we are becoming: a hyper-social planet.

We give up our familiar north-to-south, east-to-west orientations that suggest a certain hierarchy of geography. Instead, we see long, connected coastlines that plot a new productive frontline. We encounter unexpected vortexes of collapse and catastrophe. We see a rising zone of democratic experimentation just where we least expect it. This cartographic reinvention of our world shows us the new ley lines, connecting the search for human meaning in new human forms.

The Second Curve invites us to set aside our old geographies and look at the planet anew. It invites us to see unexpected allies where before we saw enemies and to work together to avert the crises at the very center of all our lives.



Buckminster Fuller's Dymaxion™ Map shows the actual size of each land mass and the globe's interconnectedness. It is updated here with satellite views of the land masses.





# 2013 MAP OF THE DECADE

## CONNECT ACROSS NEW GEOGRAPHIES

4 7 7 4

## EXPLORE THE FIVE DESTINATIONS



### work

- 1 ROBOT LOCKOUTS
- 2 MICRO-UNIONS
- 3 SUPER-EMPOWERED SMALL BUSINESSES
- 4 CAFÉ PRODUCTION
- 5 A CELEBRITY WORKFORCE
- 6 OCCUPYING WORK SPACES
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- 3 SOCIAL STOCK EXCHANGE
- 4 COOPERATIVES 3.0
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- 2 NETWORKED NON-VIOLENCE
- 3 TLD WARS
- 4 GATED REALITIES
- 5 PRINTED VIOLENCE
- 6 MOBILE REVOLUTIONS
- 7 PREEMPTION OF ONE

## SECOND CURVE STRATEGIES—AMPLIFIED!

The first generation of Second Curve strategies were experiments. They were like a sudden explosion in the gene pool of human organizational possibilities. As First Curve organizations flex their considerable muscle to put those experiments to work within the constraints of traditional organizations, the Second Curve gets serious about transformation. Leveraging the core advantages of the second curve—openness, connectedness, extreme scale, and a digital-physical continuum—they master a path to a very different global society.

- 1 **Master the art of hacking**—fostering rapid innovation and re-innovation by tapping volunteer inventors, designers, social change agents, and open data
- 2 **Master the matterstream**—intervening along the entire continuum from digital to physical to create new products, new services, and new value
- 3 **Master the worstream**—collaborating at global scales to accomplish the biggest projects from the smallest units of work
- 4 **Master the collaborative economy**—creating new kinds of value through peer-to-peer strategies for creating and sharing goods, services, profits, and spaces
- 5 **Master relocation**—superstructing (and disrupting) global platforms to adapt them to local needs and to generate local value
- 6 **Master transparency**—engaging digital citizens in documenting, deciphering, and distributing new kinds of information in support of civic values
- 7 **Master degridding**—scaling from organizations to movements by side-stepping familiar hierarchies and institutional structures to mobilize action

## DESIGNING FOR MOVEMENTS—CHALLENGES AND PRINCIPLES

The frontier of human organization is not the corporation, not the network, but the movement. It takes a movement to organize ourselves at global scales to meet epic challenges. No institution—even our large national governments—can mobilize the kind of global reorientation that will be required to move the world to the Second Curve. Some of the people most expert in starting movements are people at the margins. So here are five principles for designing from the margins for inclusiveness.

- 1 **Build a massively multi-leader world**—empowering people across a diverse spectrum to compose a shared vision
- 2 **Nurture an ecosystem of generosity**—designing more abundance rather than scarcity into the platforms and processes of our global economy
- 3 **Reimagine institutions of inclusiveness**—creating pathways for the edges to move quickly to the core and transform it
- 4 **Design technology to build global citizenship**—deepening engagement in civic choices and civic action at local, regional, and global levels
- 5 **Cultivate an empathic human species**—building on the emerging neuroscience of human emotion to overcome the survival pressures of competition

# Five Destinations for 2023

Over the next decade, our Second Curve maneuver will take us to five key destinations where transformation will be most obvious—and the shape of the future most palpable.



## work REDESIGNED

The work of life—our productive labors—is being re-routed from our large corporate campuses and halls of government into homes, co-working spaces, DIY manufacturing shops, and even our café culture. As automation launches a workforce of robots and a billion new women look for wage jobs, work itself is being reapportioned into micro-tasks performed by millions of ad hoc workers around the world. With this shift will come micro-unions and celebrity workers, super-empowered small businesses and robot lockouts. The challenge is to ensure the well-being of an increasingly fragmented workforce as today's vast corporate fleet of workers joins the exodus from full-time employment, by choice or by chance.



## wealth REBUILT

In a global economy where corporate return on assets is careening toward zero and the natural assets of the planet are themselves diminishing at speed, new forms of wealth and new ways of building it will challenge both haves and have-nots. IP-free zones will invite entrepreneurs around the world to tap the latent value in unsecured patents while new kinds of backers will transform the culture of investment and innovation. Citizens will build communities that make them newly rich, while drug lords find themselves face-to-face with government-sponsored drug economies. Encompassing all of these will be the rise of the social economy—where the social value of human interactions is accounted for in creative and game-changing ways.



## mind/body REINVENTED

At the core of our human experience are the material bodies that give us our seemingly immutable identities. DNA, facial structures, minds mapped onto the neurons of our brains—all seem to be the givens of our individual lives. The commonalities we share define a species that historically has evolved at the speed of epochs, not decades. Yet on the Second Curve, we will challenge this

stability as we adapt to both physical and digital environments that test our health and security: we'll augment our capacities, remodel our faces, and even extend our emotional range. And we'll do much of this by fine-tuning our empathy, rescheduling our biological clocks, and debunking long-standing theories about what makes us fit for life.



## planet REMAINED

Humanity has demonstrated that it has the capacity to terraform the planet and change so many of its visible and less visible features. The Second Curve continues that trajectory but also responds to it aggressively with technology that virtualizes all objects, and then materializes them at the moment of need. It turns the artifacts of global logistics into shelter and social networks into weather fronts. It looks for off-earth solutions to earthbound constraints. Still, already in this decade, we'll have to confront the challenge of an atmospheric methane release that will overshadow the carbon emissions we've yet to come to terms with. And the potential for a biotechnological mistake to push us to—or beyond—the threshold of survival will spawn cults, doomsday movements, and comic book heroes with increasing frequency and fervor.



## power REIMAGINED

If the power of the past few centuries has been defined by guns and the printing press, the coming century will merge these dual forces in a world where guns can be printed and information can target our nervous systems with precision. In this context, mobile revolutions will work to stay one step ahead of repressive regimes, and open governance will take on the challenge of re-empowering humanity even as persuasion permeates our information landscape. In the battle for our human destiny, the Second Curve may ultimately offer up the tools of peace—countering networks of violence and creating the underlying structures for global voices to decide in concert.





# work

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## 1 ROBOT LOCKOUTS

The next decade will see the beginnings of a collision between a largely human workforce and a largely machine workforce. While the technological upheaval will be far from complete by 2023, the political struggle that accompanies it will come sharply into focus. As smart digital systems continue to work their way up the employment food chain, special interests will build lobbies to block them—taxi drivers fighting self-driving cars, for example. These robot lockouts will not be staged at the factory door but rather in courtrooms and legislative chambers as people test these systems with questions like: Does a machine have to get its own license to practice? Who owns the output of creative digital systems? Who do you sue if something goes wrong? And while the debates will initially focus on the lost employment, they will quickly grow to encompass education, gender roles, and what it means to be a “contributing member of society.”

## 2 MICRO-UNIONS

As the world of work is reorganized around micro-tasks and task-routing on the fly, companies may look more like cities: open, creative, dynamic networks that draw on all the human (and robot) resources around them. As they do so, the burden of work management—and of income security—shifts to the individual worker. While this new model of production creates abundant opportunities for portfolio careers, global freelance careers, and even a blend of for-hire and for-benefit work, new kinds of worker protections will also be essential. Enter the micro-union. A micro-union may simply serve a small niche group of the labor force, or it may build a network of millions of micro-workers in what has been called the “New Mutualism.” In either case, micro-unions will increasingly give a unified voice to micro-workers and specialized laborers around the world.

### **3 SUPER-EMPOWERED SMALL BUSINESSES**

A new kind of small business is taking shape, super-charged by connective technologies, global learning communities, user-friendly manufacturing spaces, and crowdfunding. Often run by people with little formal institutional training but with novel forms of community support powering them every step of the way, these super-empowered businesses will convince their customers to pre-fund their products. They will use web forums to document what the incumbent institutions have protected as proprietary business processes. They will leverage online payment and shopping portals to reach a global customer base and take advantage of hacker spaces for widespread skill-sharing. In the end, they may well change our minds about our career and education pathways, focusing on the “return on adventure.”

### **4 CAFÉ PRODUCTION**

Over the next ten years, a new culture of collaborative production spaces will turn community centers, libraries, museums, and coffee shops into open production spaces where people get together not just to create new things but to repair old things. Participatory repair clubs are already offering a chance to share personal expertise and learn new skills as well as “upcycling” broken or found objects. Three broad social shifts are driving this trend: the pursuit of more frugal lifestyles, improved design of products to make user tinkering more inviting, and a desire for a more active relationship with the material world around us—perhaps in response to increasingly digital lives. As these drivers converge, households will see a cracked teapot or a spiky umbrella as an opportunity to get to know new people in their neighborhood, learn practical new skills, and give new meaning to the physical objects in their lives.

### **5 A CELEBRITY WORKFORCE**

Increased network connectivity and a fleet of real-time mobile reporting and mapping tools—alongside headline-grabbing public labor scandals and worker riots—are feeding a growing consumer demand to know, and know intimately, those who produce their goods. The demands may begin as a

call for transparency, but consumer experiences with new crowdfunding platforms that highlight vivid stories from individual employees are also creating a new culture of intimacy between producer and consumer, not unlike the local marketplaces of the past. As this culture spreads, positive and robust worker narratives will become as requisite to a brand’s success as good reviews on Amazon or Yelp, and companies may find themselves vying to find “celebrity workers” amongst their employees whose stories and charisma can rocket them to Internet stardom.

### **6 OCCUPYING WORK SPACES**

In a marketplace where workers vie for micro-tasks around the world, where one- or two-person businesses can run their entire operation from one room, where even traditional corporations are designing their workplaces for people not to be there, working from home might look like the wave of the future. But while the number of people working from home in the United States increased 41% in the past decade, those working in co-working spaces increased by 67% for the private sector and 133% for government workers. As we occupy a wider range of workspaces—from co-working facilities to achieve serendipity by design, to digital factories for specialized work, to anti-isolation spaces—we will create new social as well as physical infrastructures.

### **7 WOMEN’S WORK**

In the next decade, a billion new women will reach working age, creating a potential workforce on the scale of India’s or China’s workforce of today. Mostly from the world’s poorest countries, these women will have three potential paths to livelihood: compete for the most menial jobs in traditional job markets, join the global micro-work movement, or invent entirely new forms of local and global social economies to address the pressing needs of dislocated populations. All three of these paths will require educational end-runs and, perhaps even more important, new visions of women’s work and their role in our diverse societies. The next decade will likely see a rash of new experiments in organizing (and self-organizing) women for a world that doesn’t yet exist.



# wealth

In a global economy where corporate return on assets is careening toward zero and the natural assets of the planet are themselves diminishing at speed, new forms of wealth and new ways of building it will challenge both haves and have-nots. IP-free zones will invite entrepreneurs around the world to tap the latent value in unsecured patents while new kinds of backers will transform the culture of investment and innovation.

## 1 CITIZEN RICHES

After a half century of a flourishing consumer society, in which individual households privately accumulated the goods, services, and skills they needed to assure their day-to-day comfort and a lifetime of social success, a new model of “having the means” is emerging on the Second Curve. This new model is built as much on our roles as citizens as on our role as consumers. As collaborative strangers, we will blur the lines between public and private and between commercial and civic to create new kinds of public spaces and services, to remake our urban landscape from the molecule up, and to build a new infrastructure of trust. Over the next decade, the emerging collaborative economy will intersect with engaged citizenship to define a new culture of civic luxury.

## 2 THE NEW BACKERS

As online networks and convenient digital payment systems continue to reinvent the way we purchase products and services, the boundaries between consuming and investing will blur and shopping will be reinvented as an opportunity to become financial backers of the products and services we care about. New legislation and the growth of secure yet open crowdfunding platforms will democratize investment in early-stage business ventures of all shapes and sizes creating a new class of investors. We’ll see the rise of a new way of thinking about what our money can do for us: it will become not just a transferable medium between provider and consumer, but a tool that supports social belonging to a larger process of “getting things done” in the world.

3

### SOCIAL STOCK EXCHANGE

As the stock exchange meets the social economy, their intersection will change the way markets operate and perhaps the way policy is made. Around the world, from Brazil to Singapore, from South Africa to the United Kingdom, so-called social stock exchanges are already disrupting both traditional corporations and philanthropies while bringing financial vigor to new kinds of enterprises that focus on social and environmental impact. But social stock exchanges will also take other forms, including ways for people to monetize the value of their own social profiles in an ongoing public exchange. And as social media signals become a source of “market intelligence” for algorithmic trading, they could catalyze an accidental—or *intentional*—market crash.

4

### COOPERATIVES 3.0

While living in the shadow of shareholder-owned companies, cooperatives (where members or workers are the owners) have been quietly outperforming many of their large publically traded and privately held cousins for the past 200 years. Their weaknesses have been poor capitalization, cumbersome management, and slow innovation, but now the lessons of crowdfunding and the tools of social media are infusing these original leaders of social structuring with new vitality and resilience—especially in the face of economic turmoil and environmental challenges. And experiments in non-hierarchical management, as outlined in the *Valve Manifesto*, for example, may provide the blueprint for a high-performing version 3.0 of the cooperative.

5

### IP-FREE ZONES

As battles over intellectual property rage, IP-free zones will change the face of the economic landscape. Even as trade agreements are attempting to lock in intellectual property protections for decades to come, Sweden’s representative to the European Union is fighting to make Europe an IP-free zone. Meanwhile, much of the world is already a patent-free zone, because companies have declined to spend the time and money to secure local patents in many parts of the world. Over the next decade, these

zones will become hotbeds of hacker culture and rapid innovation as the technology of making scales down, skills scale up, and social entrepreneurs take advantage of the knowledge in patent-free zones to build local innovation economies.

6

### THE DRUG ECONOMY

Decades-old drug policies are undergoing a wave of radical revisions around the world, overturning many of the more stable economic patterns of the illicit drug trade. Even as Uruguay is proposing to nationalize the cultivation and distribution of marijuana, economists estimate that legalization in the United States alone could result in a \$13.7 billion savings to the U.S. government. At the same time, pharmaceutical companies are gearing up to produce cannabis-based compounds that have been demonstrated to be powerful anti-cancer and anti-inflammatory agents. With the global illicit drug trade estimated between \$350-\$400 billion annually, massive resources are up for grabs. Meanwhile, the search for illegal drug networks is spurring powerful innovations in datamining, analysis of networks, and search patterns that could move out of the shadows of protected government research and into the mainstream economy with legalization.

7

### INCLUSIVE FUTURES

Even as some so-called developing nations are growing in economic clout, income inequality continues to grow not only in those nations but also in nations that have led the world in wealth, health, and education. Many innovations on the Second Curve will seek to reverse this trend by building an infrastructure of inclusion—ways for those who are surviving at the margins of mainstream economies to participate in shaping their own more prosperous and participatory futures. Inclusive design will lead to experiments ranging from open-source learning resources to microloans for traditional education, from community-based information systems to platforms for people all over the world to envision and advocate for their own futures. These experiments will not only address access to global resources, they will also build new kinds of local wealth.



# mind/body

At the core of our human experience are the material bodies that give us our seemingly immutable identities. DNA, facial structures, minds mapped onto the neurons of our brains—all seem to be the givens of our individual lives. The commonalities we share define a species that historically has evolved at the speed of epochs, not decades. But all that is changing now.

## 1 HOMO SAPIENS AUGMENTUS

Obvious alterations of our physical and mental abilities, from contact lenses to artificial limbs to ADHD drugs, have historically been solely the province of therapy. But we've reached a turning point, a phase change in the nature of augmentation where physical enhancements that once served only to bring people with disabilities closer to the perceived norm can now push these same people—and others—*past* the norm. From high-tech prosthetics to biochemical drug augmentations, and even gene doping, we'll increasingly see choices that reconstruct the human body. Augmentation wars will rage as organizations like the World Anti-Doping Agency advance their agenda of "no performance enhancements" while illicit recreational drugs are replaced by illicit augmentation protocols—not only for athletes but for ordinary citizens seeking to increase their biological fit in an increasingly hostile environment.

## 2 BEYOND EMPATHY

In a world of ever-increasing connectivity—and conflict—it is not surprising that empathy has emerged as the buzzword of the decade, with programs designed to teach empathy alongside research designed to understand its underlying mechanisms. The most important mechanism to emerge to date is the mirror neuron: a subset of motor neurons that enables us to sense what others sense and feel effectively. Over the coming decade, these mirror neurons will be at the core of new strategies to improve our empathy and reduce problems ranging from bullying to bigotry. But they may also take us beyond acts of mutual understanding. Researchers today postulate that motor neurons may be the key to reducing the prevalence of autism, responding now to the needs of future generations, and even cultivating ourselves as superheroes in neurologically augmented bodies. In short, they may become instruments of our intentional evolution.

3

### PLASTIC FACES

Over the next decade, facial recognition tools will track people everywhere. Not just in airports and big box stores, but in online photos, videos, and even the archives of Google Hangouts. And if they manage to escape these massive databases, computers will use the bits of DNA they leave behind to construct identity sketches of them. Faced with this level of surveillance, people may decide to go beyond dark glasses and online avatars to protect their privacy. They may turn to variations on Botox to change their facial musculature for a few months at a time. They will take their cues not only from celebrities and fashion magazines but from imaginary anime characters, Barbie dolls, and TV versions of alien species. In short, the human face may evolve as rapidly as the technology for tracking it.

4

### RESCHEDULED BODIES

Research on our (many!) body clocks is underway in extreme environments as DARPA's Biochronicity program aims to identify the "clock signatures" of biological organisms that may play a role in combat performance. In less extreme environments, Virgin Airlines has created the Jet Lag Fighter app for frequent travelers that combines trip details and chosen therapy type to provide a personal activity calendar with jet lag adjustment predictions. The emerging scientific discoveries of chronobiology will suggest increasingly specific guidelines for when to do everything from eating and sleeping to working on math problems. There will be a spectrum of approaches to tune one's inner body clock to external conditions, and we will begin to reorganize our days and environments around these options.

5

### THE VIVID HUMAN

Spurred by the needs of veterans with PTSD and children on the autism spectrum, new affective technologies are turning our attention to our emotions to better track how we're feeling and even adjust our environments to respond to us. We will use these tools to optimize our emotional interactions for more vivid, meaningful, and healthy experiences, creating new categories of emotional personalities. Affective technologies will be embedded into objects, starting with our smartphones, but eventually augmenting our environments. New literacies

around emotional choicemaking will follow, resulting in novel social mores for emotional connecting. Brands that target aspirational consumers will fine-tune their marketing to new emotion-based segments, such as the *Ultra Reals*, the *Authenticity Apostles*, and the *StressLess*. Like physical augmentations, emotional augmentations will move beyond therapy to create new human capacities.

6

### END OF CALORIES

The health movements of the early 19th century introduced a simple equation for fitness: to maintain a stable, healthy weight, calories in must equal calories out. This equation has been the basis of massive global weight-loss networks, professional medical advice, and preventive health practices. The problem, however, is that there is no scientific evidence to support it: like other oft-repeated "truisms," it has never been proven true. Meanwhile, new molecular-scale science is providing hints about places to look for solutions to the obesity pandemic: gut bacteria, body clocks, and chronic environmental stress that impact insulin and cortisol levels in the body are all being linked to obesity in animal and human studies. As this high-resolution lens on obesity is refined, we may find that the prescriptions for fitness have less to do with how much we eat and exercise and much more to do with redesigning our environments.

7

### THE PERSUADED SELF

As humans augment their senses, minds, and communities, they will underwrite the biggest advertising sector the world has ever seen. From simple heart monitors to whole-system monitors like Scanadu's tricorder-style medical monitor, we are creating feedback systems between our bodies and a cloudful of data. We are outsourcing our cognitive responsibilities, inviting devices to deliver prompts, reminders, data, and tweets to keep us up to date. We use these tools to persuade and cajole ourselves. And in the process we are creating new surfaces for advertisers to speak to us, for gurus to motivate us, for organizers to mobilize us, and for just about anyone to try to persuade us to do just about anything. Advertising will expand over the coming decades into a pervasive economy of persuasion, but we ourselves will design our individual experiences of this economy.



# planet

Humanity has demonstrated that it has the capacity to terraform the planet and change so many of its visible and less visible features. The Second Curve continues that trajectory but also responds to it aggressively with technology that virtualizes all objects, and then materializes them at the moment of need. It turns the artifacts of global logistics into shelter and social networks into weather fronts.

## 1 THE MATTERSTREAM

In a world of open fabrication, where manufacturing takes place at multiple scales and material objects take form as close as possible to the time and place of use, the choices we make about when to move from digital to tangible will shape the new landscape of production and consumption that is emerging. From getting our mail digitally via services like Outbox to shopping in 3D printing marketplaces like Shapeways to making-it-ourselves, we'll need to decide what is worth converting from digital to tangible as well as when and how. The next decade will be the one in which we begin to see "what matters" to a generation that has grown up digital and how their priorities and practices create a new literacy of managing the matterstream.

## 2 SOCIAL WEATHER MAPS

Since Twitter-based mood mapping of the United States hit the news a few years back, the intersection between social networks, social media, well-being, and geography has spurred a growing field of sentiment mapping designed to let us—and those who would like to influence us—keep track of our "social weather." Mapping tools are rapidly evolving from text-based analysis to sensor-based tools that will help us track our moods around the world in real time on our smartphones. Not limited to emotion mapping, these tools will help us see how our smartphone behavior is creating new communities that don't conform to familiar administrative boundaries like counties and states. We'll watch the "currents" of memes as we follow search behaviors across geographies. Like our atmospheric weather, these weather maps will shape our lives day-to-day, as we decide what to wear, where to go, who to meet, and how to spend our time, our attention, and our money.

### 3 BACTERIAL NETWORKS

In a world where massively big data meets the tiniest bits of microbial life, bacterial networks will tell us about the state of our bodies, our social networks, and our planet. At the tiny scale of microbial life we find some of the biggest patterns we have ever seen, connecting colonies of diverse bacteria across vast swaths of ocean and defining the very foundations of marine life. Other patterns show us how networks of gene swapping across thousands of bacterial genomes could help us foresee the evolution of drug-resistant strains of bacteria. Scientists have even demonstrated that they can use bacterial DNA analysis to infer the structure of a host's social network. Over next decade, we will discover not only the geography of these networks, but also the mechanisms that create them, change them, and ultimately alter everything from our food supply to macro patterns of carbon release and sequestration.

### 4 CONTAINER CITIES

One of the most important transformations of the global landscape over the past 50 years has been a logistics infrastructure built on standardized shipping containers. Over the next 10 years, these same shipping containers—widely available, easy to transport, and with an urban-chic edge—may also become the building blocks of vast new cities, growing too rapidly to wait for more traditional infrastructure to catch up. Already, shipping containers are being repurposed for everything from pop-up factories to disaster shelters to high-style architectural solutions. Equipped with 3D printers and the latest in compact medical, agricultural, and energy technologies, shipping containers will be able to deliver the basics of civilization in a self-replicating format, ironically eliminating the need for long-distance shipping of all but the most essential non-printables.

### 5 OFF-EARTH ELEMENTS

Over the next decade, the commercial space industry will test new business strategies for everything from satellite lift to space tourism. But the economic impact of these ventures will pale in comparison to the potential of off-earth mining. While scientists, engineers, and hobbyists work on the tools to mine the

lunar surface, at least one commercial venture is already finding creative ways to tap crowdfunding and citizen science to help them build the know-how and know-where for mining asteroids—with potential returns in trillions of dollars. Lunar mining will almost certainly begin within this decade, and while asteroid mining is likely further out, the long-term potential for off-earth mining to wreak havoc on earthbound mineral markets is substantial: return on investment will need to be high enough to pay for the mining but not so high as to cause an “asteroid rush.”

### 6 METHANE!

Methane,  $\text{CH}_4$ , is a powerful greenhouse gas with a potential greenhouse effect that could be 70 to 100 times as great as that of carbon dioxide over the course of a decade. Because of this extreme impact, actions to reduce the amount of methane in the atmosphere can have a disproportionate benefit, and over the coming decade we'll look at new ways of doing everything from cultivating rice to producing natural gas as ways to boost production while reducing harm. At the same time, a new methane threat from melting Siberian glaciers will likely drive the development of new strains of *methanotrophs*—bacteria that consume methane and break it down into  $\text{CO}_2$  and water. While processes to convert Siberian methane to fuel will likely proliferate, engineered methanotrophs may end up being a key weapon against the methane threat.

### 7 OOPS...

A panoply of processes, technologies, and events—ranging from atmospheric warming to nano-bioweapons to collision with a large asteroid—put our human existence and the survival of the planetary biosphere at risk. Over the next decade, these threats will almost certainly grow, and the management of these risks will require an increasingly nuanced understanding of eight so-called end of world scenarios: regional catastrophe, human die-back, civilization extinction, engineered human extinction, natural human extinction, biosphere extinction, planetary extinction, and planetary elimination. Each of these scenarios produces different scales of devastation and different probabilities of recovery, which in turn, suggest different imperatives for both risk reduction and worst-case strategies.



# power

If the power of the past few centuries has been defined by guns and the printing press, the coming century will merge these dual forces in a world where guns can be printed and information can target our nervous systems with precision. In this context, mobile revolutions will work to stay one step ahead of repressive regimes, and open governance will take on the challenge of re-empowering humanity even as persuasion permeates our information landscape.

## 1 OPEN-SOURCE GOVERNANCE

Over the course of a few generations, successive, resonating waves of change have altered how information is shared between citizens and their governments—and as a result, how governments offer the services they are constituted to provide. These waves originate in cultural, technological, and legal shifts that have made government data a shared resource with new tools for using it to innovate services while mandating growing transparency and openness. Most recently, we've seen the move toward completely open raw data and growing innovations in visualization and dashboards, many coming from the bottom up. The future of open-source government is thus likely to be defined not only by sense-making tools on the backend of available data, but also co-creation and instant sharing of information and code between citizens and their civil servants.

## 2 NETWORKED NON-VIOLENCE

From cyber wars to illegal arms brokers and 21st century terrorism, the world is facing new forms of violence—and violent organizations—that transcend national boundaries. Over the next decade these global networks of violence will spur a corresponding growth in networks of *non-violence* as citizens fill the gap left open by failed international agreements and the high costs of traditional military and policing solutions. They will simultaneously amplify the ability of traditional legal systems to rein in criminal violence, develop novel strategies for undermining the “brand” of terrorist organizations, and create new strategies for engaging intimately with enemies. Ultimately, these strategies will rewrite the rules of diplomacy, creating a more open and pervasive platform for conflict resolution.

3

### TLD WARS

The next decade will see the clash of state, corporate, and community visions of the Internet in the form of new treaties, namespaces, and political activism. ICANN, the organization responsible for coordination of the global Internet's systems of unique identifiers, will be a key actor. It is currently in the process of opening nearly 1,000 new top-level domains (TLDs), compared to the 22 that are open today. Organizations that apply and win these TLDs will “own” virtual territories. From *.movie* to *.islam* to *.cocacola*, these spaces will seek to organize new and often branded content communities. Powerful religious groups will vie for the right to administer their respective dot domains, while some religious states will try to block them. Since the application and annual fees are steep, wealthy, technically savvy groups will have the advantage, enclosing new spaces for profits, brand representation, and ultimately opportunities for self-expression on the Internet.

4

### GATED REALITIES

Over the next decade, people will experience a version of reality more readily shaped by political, social, and economic preferences. As our personal networking technologies evolve from handheld devices that require our focused attention to wearable and environmental systems that allow more passive awareness, the ability to place invisible ideological and commercial fences around our experience of reality will mushroom. As the Internet of Things spreads and our physical environment develops a substantial digital shadow, it will be easier for commercial and governmental institutions to own or regulate the digital information streams that shape our experience of objects in our environment. From basic filtering to subtle barriers to visibility of certain information and experiences, our augmented reality systems will increasingly be controlled, tracked, and readily denied.

5

### PRINTED VIOLENCE

Like computers and the Internet, 3D printing is a general-purpose technology: the same capabilities that make it possible to carry out beneficial or innocuous tasks also enable dangerous or hostile acts. Likewise, efforts to restrict the uses of 3D printing will encounter the same kinds of difficulties that

plague efforts to control digital computing and content. As a result, by 2023, 3D printing systems will be critical components of any military campaign, whether insurgent or conventional. The arms race between official controls and 3D printing guerillas will play out over a variety of battlefields with ever-greater privacy intrusions as bioprinters begin printing potentially harmful microbes.

6

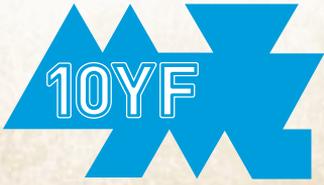
### MOBILE REVOLUTIONS

Revolutions are never enacted unilaterally; they always engage opponents, and over the coming decade, the opponents in micro- and perhaps macro-revolutions worldwide will find ways to bend new mobile, sensory, and location-based tools to their ends. Even as trade agreements criminalize more kinds of information sharing, information freedom fighters will take their servers into low-space orbit. Even as the aggrieved draw inspiration from the Arab Spring's use of mobile phone connectivity, their adversaries will map phone and text messaging patterns to spot the earliest formations of community that could ultimately give rise to rebels. Online facial recognition and other tracking tools will meet a growing darknet that creates strange but historically familiar alliances of criminals, rebels, and those charged with enforcing the law. The bonds of social networks will ultimately raise the stakes for both sides as they build a strategic cohesiveness that creates a much wider threat of reprisals.

7

### PREEMPTION OF ONE

With unprecedented access to digital networks, rapid fabrication, and vast stores of information, the power of single individuals to execute massively destructive acts has never been greater in human history. In response, pre-crime policies will increasingly focus on individuals, with new modes of threat detection and increasing breadth and depth of surveillance. The doctrine of preemption, employed over the last decade to justify invasions, occupations, and other acts of war, will increasingly be applied not only to nations but also to individuals. New technologies that can “read the minds” of potential sociopaths and preempt catastrophic violence may quickly lead to surveillance of thoughts, emotions, affects, and other internal “evidence,” taking aim at the privacy of even our most intimate inner lives.



# Strategic Toolkit

## From Organizations to Platforms to Movements

The next decade will unfold as a series of first-, second-, and third-order consequences of challenges set in motion by our changing global environment. Even as we see the early intimations of a new curve of cultural evolution, we see first curve strategies build on these innovations. These efforts will only clarify and strengthen the Second Curve innovations, many of which will take root outside of mainstream culture, in the margins. And as they do, we will find ourselves designing both from and for these margins. Here's a toolkit of strategies that will take us from corporations to networks to movements.

### FIRST CURVE STRATEGIES—ON THE SECOND CURVE



First Curve strategies on the Second Curve are all about expanding the organization's reach by tapping into the power of platforms: Creating the winning platform. Locking vast networks of engaged consumers into market spaces, sometimes branded by top-level domains like *.music* or *.baby*. Creating a standout product on open-source specifications. Tapping the hidden patterns in social networks. These are strategies that First Curve organizations can quickly master, blending their knowledge of traditional market strategies with a new understanding of networked platforms.

- 1 Commercialize a peer-to-peer platform**—locking in a vast market of users by empowering their peer-to-peer interactions

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- 2 Acquire and enclose an existing platform**—reducing competition to an existing enterprise or creating a complementary market

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- 3 Create proprietary offerings on an open platform**—tapping an instant market, building brand, and generating new value

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- 4 Create open offerings on a proprietary platform**—inspiring innovations that extend your core value and build a user community

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- 5 Add network value to a product, service, or environment**—blending the physical and digital worlds to create new value

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- 6 Mine social networks for mission-critical data**—inspiring new business models based on new kinds of information

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- 7 Mine the open spaces in platforms**—creating new resources, seemingly from thin air

## SECOND CURVE STRATEGIES—AMPLIFIED!



The first generation of Second Curve strategies were experiments. They were like a sudden explosion in the gene pool of human organizational possibilities. As First Curve organizations flex their considerable muscle to put those experiments to work within the constraints of traditional organizations, the Second Curve gets serious about transformation. Leveraging the core advantages of the second curve—openness, connectedness, extreme scale, and a digital–physical continuum—they master a path to a very different global society.

- 1 Master the art of hacking**—fostering rapid innovation and re-innovation by tapping volunteer inventors, designers, social change agents, and open data

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- 2 Master the matterstream**—intervening along the entire continuum from digital to physical to create new products, new services, and new value

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- 3 Master the worstream**—collaborating at global scales to accomplish the biggest projects from the smallest units of work

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- 4 Master the collaborative economy**—creating new kinds of value through peer-to-peer strategies for creating and sharing goods, services, profits, and spaces

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- 5 Master relocation**—superstructuring (and disrupting) global platforms to adapt them to local needs and to generate local value

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- 6 Master transparency**—engaging digital citizens in documenting, deciphering, and distributing new kinds of information in support of civic values

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- 7 Master degriding**—scaling from organizations to movements by side-stepping familiar hierarchies and institutional structures to mobilize action

## DESIGNING FOR MOVEMENTS—CHALLENGES AND PRINCIPLES

The frontier of human organization is not the corporation, not the network, but the movement. It takes a movement to organize ourselves at global scales to meet epic challenges. No institution—even our large national governments—can mobilize the kind of global reorientation that will be required to move the world to the Second Curve. Some of the people most expert in starting movements are people at the margins. So here are five principles for designing from the margins for inclusiveness.

- 1 Build a massively multi-leader world**—empowering people across a diverse spectrum to compose a shared vision

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- 2 Nurture an ecosystem of generosity**—designing more abundance rather than scarcity into the platforms and processes of our global economy

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- 3 Reimagine institutions of inclusiveness**—creating pathways for the edges to move quickly to the core and transform it

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- 4 Design technology to build global citizenship**—deepening engagement in civic choices and civic action at local, regional, and global levels

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- 5 Cultivate an empathic human species**—building on the emerging neuroscience of human emotion to overcome the survival pressures of competition

# How to Navigate the Second Curve

The 2013 *Map of the Decade* is a guide to a new planet where we will build new kinds of cities using unfamiliar materials, where we will craft new ways of working together to turn those materials into the building blocks of our daily lives. The map gives us first glimpses of who we are becoming as a human species with new capacities for both violence and empathy, and it previews the social structures that will mediate those tendencies.

In times of rapid transformation, we are all called on to play new roles, to rethink the patterns of work and play, and most important, to reimagine the landscapes of life. Use this map to anticipate the bold steps from our past to our collective future for yourself, your organization, and your communities, both local and global.



## CONNECT ACROSS NEW GEOGRAPHIES

Use this map to look at the world in new ways, to see the connections between zones of innovation in new configurations. **Try this:**

- **Pick three stories** from the map that could have the biggest impact on your work or life. Draw lines between them. Examine the territory that is captured by your lines. Imagine this is a new virtual nation. What kind of nation is it? Who lives there and how do they connect and cooperate to achieve their goals? What new patterns does it bring to the planet? And how do those outside its borders respond?
- **Start anywhere and begin to draw flow lines** between the stories on the map. What does one story produce that another story needs? What kinds of human movements will connect any given pair of stories? Name the flows. Draw as many as you can across the map. Then stand back and ask: How is my organization uniquely positioned to participate in these flows? How am I?

## EXPLORE THE FIVE DESTINATIONS



Destinations are not always geographic. Sometimes they are worlds that we conjure in our minds to motivate and organize ourselves. This collective conjuring is one way we make the future. **Try this:**

- **Mash up the forecast videos**—found at [10YF13.org](http://10YF13.org)—from each of the five destinations: Work, Wealth, Mind/Body, Planet, and Power. Choose the pieces that are most important to your own future and add a little commentary. Share them with your network.
- **Write future job descriptions** for yourself, your co-workers, or your friends and family. Highlight the new roles, the new capacities, and the new experiences that will be required for them across all five destinations on the Second Curve.
- **Search the online signals** for each story at [10YF13.org](http://10YF13.org). Collect a few of the signals that are most provocative for you, share them with your network, and ask your friends and colleagues to help you tell your own Second Curve stories based on the signals you've collected.

## MAKE YOUR MOVE TO THE SECOND CURVE



The coming decades is a time for strategic mold-breaking, using innovations on the First and Second Curves, as well as innovations from the margins, to spur bold moves. **Try this:**

- **Plot your path from organization to platform to movement** with strategies that span the two curves of transformation. Outline scenarios that employ each of the First Curve and Second Curve, as well as the principles for designing movements.
- **Identify one catalyzing project** that could attract new flows of resources and inspire a global network of new leaders to build a movement that will change your future.