



WHITE PAPER SUMMARIES

W P



INTRO

Once a quarter, we prepare for our Whiteboard clients six new trend-based White Papers. These papers have covered hundreds of emerging issues and trends – and their implications – the great majority of which have come to pass. Below you'll find brief synopses of past White Papers (original papers range between three and six pages apiece), dating back to 2010, as a way to highlight how we have picked up on critical issues and trends, and helped our clients understand what they mean to them and the businesses they are in. This downloadable compendium includes eight White Paper summaries per year – for a total of 80 summaries. It represents only one-third of the body of white papers that we have generated during that time.

2019

March 2019 FRACTIONALIZED SELF-IDENTITY

We live in a world today punctuated by identity politics, political correctness, heightened marginalization and polarization, widespread inequality, shifting cultural norms, fake news, and social media echo-chambers. The rapid pace of change – and its sociocultural ripple effects – is evident almost everywhere. Technological development is not only leading to the disintermediation of human-based labor but is creating more fear about our role in (and relationship to) this evolving future. Around the world, mental disorders are on the rise, as is a pervasive sense of societal loneliness, alienation, isolation and disconnection. While we are more connected than ever before, we are also more ostracized. This is raising profound, existential questions about the future of self-identity. Who are we? How do we define ourselves? What defines the human condition/experience? And, ultimately, what is the impact on our psychology and mental health? Technology is eliminating many boundaries of self-identity, but new boundaries are emerging in their place. A greater emphasis on hyper-individualism and personal freedom is rising alongside a culture of distrust, tribalism, and political fragmentation.

June 2019 NEOLESCENCE REVISITED

The modern life cycle – as segmented by educators, marketers and parents alike – has come to include multiple phases of youth. One of these phases is adolescence – an important life stage that marks the transition years between childhood and adulthood. But beginning in the early 2000s, we began to see a blending of these phases, and an extension of youth into what we might have considered full adulthood. In 2006, we saw a tidal wave of demographic and technological forces that were rapidly transforming the workforce and reshaping the boundaries of communication and entertainment. In a Working Paper titled *Neolescence* (March 2006), we identified 13 years ago that adolescence may not only extend to age 32 and beyond, but fundamental economic shifts were taking a toll on children's maturation. Fast-forward, and this trend has only magnified in scope and scale. Children seem to be getting "older" more quickly, and young adults seem to be remaining "children" longer. Traditional markers of development need to be rethought and redefined.

June 2019 FLUENSEE: THE RISE OF VISUAL LITERACY

Textured by digital images, ideograms, videos, emojis, GIFs and memes, communication has become increasingly short-handed and truncated. Much of this is a time-based value proposition. People are communicating in abridged bursts. But interpretation is often inconsistent and can create the potential for misunderstanding. So, how do we train for



the deciphering of semiotic ambiguity? Cultural context? Nuance? And, more importantly, how do we instill a sense of visual “*fluensee*?” Being well-versed in the conceptual understanding of visual messaging will become a growing imperative, as will knowing how to appropriately and effectively leverage it. For organizations, a growing issue will be image-based protocol. Appropriate use and context will have to be clearly outlined, particularly to younger employees who may view them as time-saving shortcuts. And *fluensee*-based education – which will be a necessary part of both contemporary literacy and critical thinking skills – will take on a new imperative across the entire age spectrum.

June 2019
1984 THROUGH THE
LOOKING GLASS

Public concern about government surveillance remains very real. And Chinese society is a striking example of surveillance on a large scale. While the potential threats of Big Brother government remain very real, the threats of *corporate* Big Brother – in the form of the world’s digital tech giants – are perhaps even more salient right now. Concerns about concentration of market power, aggregation and misuse of citizen data, proliferation of false information and invasions of privacy, among other things, are leading to the world’s next major ideological (and, in some cases, geopolitical) battlefield – big tech vs. big government. Strangely, if we were viewing 1984 through the looking glass (i.e., the opposite of conventional wisdom), big government may come to be viewed as one possible solution for checking the disproportional influence and negative externalities of big tech. Government will always lag behind the technology innovation curve – the pace of innovation combined with government bureaucracy guarantee that. However, we may increasingly see pressure for national governments (or consortia, e.g., the E.U.) to serve as a primary check on big tech. And this is not partisan. There are indications that many on both the political left and right may stand on common ground when it comes to this issue.

September 2019
BETTING ON
THE DICES

We are seeing the emergence of companies and networks that disintermediate transactions and businesses by hiring dispersed populations to perform work or offer goods or services in new ways. More workers, buyers and sellers are reconfiguring the income-generating landscape. The threats of huge unemployed populations have left many wondering what will fill the employment/income gap. In addition to Universal Basic Income, we are also seeing the rise of what we call *DICES: Distributed Income Compensation Enterprises*. While many of these that will emerge in the future are not even conceived of yet, many organizations should be thinking about how they might become, in part if not in whole, an innovative DICE. Crowdsourcing solutions, creating a network of service providers, mining databases for information, and leveraging existing clients, members or customers in new ways are a few of the opportunities for income distribution. Many current DICES are faulted for short-changing the people they contract. But organizations that have found profitable ways to do it fairly will find they are making money from their new initiatives, and they have public good will on their side.

December 2019
INTERGENERATIONAL
CAULDRON

Generations of people have long struggled to understand each other. Today, two things are happening globally which are destabilizing intergenerational dynamics to a greater degree, and in real time: 1) The rapid increase in human life expectancy; 2) The exponential pace of technological innovation. These are the two primary ingredients in what we might call an *intergenerational cauldron* – a situation characterized by instability and strong emotions. More generations are simultaneously alive than at any point in history. Older generations are more vital – life is generally being extended in the middle of life, versus the end. This



creates major challenges for social, labor and health systems. Somewhat counterintuitively, many world leaders are getting older, even in the face of major and rapid technological change. And this is not limited to developed economies – it is a global phenomenon. This dynamic can lead to major societal tension, because older people are making monumental decisions that will existentially impact the futures for several generations younger than them. And, the perception is that they are doing so with less at stake personally, and with less understanding of contemporary technologies.

December 2019 ENVIRONMENTALISM

Climate change will likely define this century. Rising seas, dying farmlands, the degradation of coral systems, longer and more intense droughts, more powerful storms and floods... the list goes on. These changes will test the international system in unpredictable ways, particularly as the number of climate refugees grows faster than the world population. Despite calls for international cooperation, the public is skeptical and pessimism seems justified. Currently, 85% of global cities are feeling climate change, but nearly half are not dealing with it in any meaningful way. Atmospheric concentrations of carbon dioxide are at their highest level in three million years. Most effects of climate change have been faster and more severe than models predicted. Although new technologies are in development to help mitigate the effects, they are doing little to assuage people's environmental fears and anxieties. There is a rising public urgency surrounding the issue – one that is spreading quickly and globally. We refer to this as *envirmentalism*. Intergenerationally, *envirmentalism* will be felt and expressed differently. Many young people feel disillusioned and angry at preceding generations which they blame for doing little to address what they consider an inherited long-term crisis – and deadly legacy. Organizations, governments, and policymakers will be charged with responding to and addressing *envirmentalism*, particularly when this issue has the power to swing future elections and reshape purchasing decisions.

December 2019 PUBLIC CAPITALISM VS. PRIVATE CAPITALISM

The past decade has been marked by the introduction of ever larger impact investment vehicles, concerns about workers' rights, environmental degradation and crises, triple bottom line balance sheets, and calls for corporate social responsibility. Yet, there is a sense that capitalism is still a better-liked economic system than its alternatives (socialism, communism). Seen that way, it seems we have no choice but to allow the free market to rule, hope that regulations can keep it in check, and that decency in conducting one's business will prevail. There is much activity in private capitalism aimed at doing good. But there is another choice. It is to cleave capitalism into two mainstream economic systems. The first system is capitalism as we have known it – a private capitalism that allows the winners to take all and the rest to figure out how they will fit in and/or survive. A second, slowly emerging system of capitalism is public capitalism, which works for the good of the whole while still allowing markets to operate, acknowledging that regulations and legislation are weakening as powers that balance the system. In this form of capitalism, the returns to society become an integral part of the definition of profit. Society profits. The social good profits. The planet profits. And no one profits if these don't profit. Some call this "conscious capitalism." Growing demand for transparent businesses has the potential to shape the world for decades to come. There have been pressures mounting everywhere to provide an alternative to capitalism as we have known it, without abandoning the free market system that underpins it. The only way that can be done is if we redefine the metrics of success. The COVID-19 pandemic has accelerated the timeline



for reevaluating accepted capitalist norms. We see examples of prominent capitalist systems adopting massive socialist-style programs to survive looming economic calamity. When financial return becomes less a factor in profitability and compensation, and the social good rises from the balance sheet to the ballot box, public capitalism will seriously rival private capitalism for a place on the global economic stage, taking its rightful place alongside all other forms of economic systems.



2018

March 2018 DYSTORTIA: A WORLD WITHOUT PROOF

With advances in machine learning and AI, anyone will be able to make convincing digital documents and images that make it appear as if anything has happened, regardless of whether or not it did. Beyond questions of “what is real” and “what is fake,” the more profound question is: “How can we prove what is real and what is fake?” If anything can be distorted with undeniable accuracy, how do we really know that what we see, read and hear is true? In a world of *Dystortia*, in which our reality is being distorted in increasingly dystopian ways, proving out these questions becomes a near impossibility, which can lead to serious potential consequences. Snapchat includes rudimentary face-morphing technology, but now, hobbyists are experimenting with more powerful tools. Deepfakes are one of the newest forms of digital media manipulation, which could be used to slander politicians, create phony revenge porn, or frame people for crimes. Lawmakers worry about how deepfakes could be used for political sabotage and propaganda, going far beyond today’s fake news epidemic. AI is making reality much harder to decipher and much harder to prove. It will be increasingly difficult to govern the spread, particularly as it becomes cheaper and more widely available. Neural networks can reconstruct their own systems with great accuracy, automatically analyze data, improve real-time speech translation, and other tasks previously left to humans. It can also distort reality. Through social media, we can craft an idealized persona through fake followers, fake content, fake images and fake recognition – none of which can be verified or proven otherwise.

March 2018 THE RAPID SPREAD OF POPULARISM

It is highly likely that populism is breaking off into two major branches: Traditional populism, and the other is “popularism.” Populist politics usually are led by charismatic politicians. *Popularism*, on the other hand, is led by ideas. The rapid spread of popular ideas may or may not be initiated by a charismatic person. It is the idea itself that becomes democratized and widespread, usually irrespective of political party. Because of dispersed connective technology, ideas with or without charismatic initiators are now fanning out faster and to wider receptive audiences. Pundits talk about the far-right and the far-left as both being populist. But because popularism cuts across all political lines, it may be the more important political movement of the 21st century. Populism is a political label, but it can no longer survive as a political party. Nor can it be completely absorbed by the existing political parties, unless any one of those embrace a great majority of popularist issues.

March 2018 REIMAGINING TRANSACTIONAL SPACE

There are new distribution channels for consumer transactions. The lines between real and virtual transactions are blurring. Major disruptors in the transaction space are being disrupted. We see evolving transactional reward structures, transactional game changers in the developed world, and new forms of transactional surveillance linked to behavioral nudging. As gaming environments and VR become more sophisticated and ubiquitous, we will increasingly see blurred boundaries between what were previously viewed as “real” and virtual transactions. This blurring, and new forms of mining – particularly more nefarious ones involving cryptocurrencies – will be areas that regulators and accountants will have to carefully assess. But some simply don’t have the sophistication or manpower to keep up with the pace of technological disruption. From an economic perspective, two of the greatest



luxuries today are time and trust. Some transactional models clearly exploit trust issues borne out of *cyberinsecurity*. But many optimize one or both of these value propositions – either by saving people time, or by ensuring higher levels of security through platforms like the blockchain. Investment in the new transactional space will increase the wealth of the 1% but will provide whole new business and banking opportunities for the 99%.

June 2018
TECHNOPSYCHOLOGY

The mental health of global populations is increasingly in the spotlight because of a confluence of societal factors such as: the stress of migration and cultural integration in an increasingly interconnected world; gun violence; lack of available economic and employment opportunities; gender imbalances; shifting cultural norms; and rising depression and anxiety. Mental health issues have become almost pandemic. Many of those incarcerated in the U.S. suffer from mental illness, as do those in the investing arena and police departments are teaming up officers with therapists. But we have a less-refined understanding of what is happening at the nexus of mental health and technology. There is evidence substantiating how technology can disrupt and undermine mental health; while we're also learning of many ways it can improve it. A main concern is addiction, and there are also correlations between technology usage and susceptibility to conditions like stress and anxiety. *Technopsychology* will define the future well-being of entire populations – including youth populations, aging populations, workers, and those in the public eye.

September 2018
OMNI-COMPETITION

The speed of change is forcing humans to adapt and become more competitive. Our world is characterized by ubiquitous competition – *omni-competition*. We are competing to improve ourselves, beat others, enhance our credentials, meet expectations and land the best jobs – and, in many cases, to simply survive. According to some, the focus in recent years has been on “girl’s issues,” which has resulted in neglect of boys and their issues such as an increase in illiteracy, lower grades and higher drop-out rates, higher suicide rates and other troubled behavior. Competition among adults has become more of a science – quantifiable and aided by emerging technologies like AI, and many are being forced to compete harder than before because of economic realities. The traditional idea of retirement is no longer a practical reality, often due to financial stress. Aging adults are now forced to compete longer and harder than ever before. Many middle-aged people are trying to start over, only to accrue new student debt. Even *mindfulness* is now competitive - - type-A people are tweaking meditation to suit their hard-charging needs. It may be that we are hardwired to compete at some level and are creating a self-fulfilling prophecy by engineering today’s corresponding technologies.

September 2018
8 BILLION
MECOSYSTEMS

It is becoming apparent is that every person on Earth is now capable of becoming their own fully-integrated and fully-customizable bio/digital ecosystem – what we will call a *MEcosystem*. We are approaching population milestone of 8 billion, almost all of whom will theoretically have the capacity to be their own *MEcosystems*. These new ecosystems are two-pronged, encompassing not just the self (the human body) but also the home – and all the technologies at the nexus between the two. Emerging technologies, including robotics, implantables, embeddables, 3D (and 4D) printing, and AR and VR, are redefining our fundamental notion of the “self.” “Smart” technologies, like new composite materials and connected devices, increasingly have the capacity to turn homes into bio/digital ecosystems that are effectively extensions, and expressions, of the self. From a macro perspective, what we are looking at here structurally resembles a vast set of around 8 billion individual nodes



that can be customized and maybe even turned on or off at any given time – but nodes that still belong to a greater interconnected whole. Each person's *MEcosystem* could function as a “walled garden,” or what can be described as a closed ecosystem in which all the operations are controlled by the ecosystem operator – in this context, the individual themselves.

December 2018
FEUDALISM 2.0: THE
RAPID RISE OF
ALGORITHMS

Silicon Valley represents a type of feudalism 2.0 in which stratified “caste-like” digital systems offer limited social mobility. More companies, particularly platform businesses, are developing and leveraging algorithms to direct, control and manage human behavior. Omni-algorithms have become much of the infrastructure on which the world will function. Computers – programmed by humans to elicit a desired response – are effectively in charge of human actions. We are entering an Algorithmic Economy, a future in which machines determine everything from which jobs we will hold, how effective we are in them, and how much we are paid. There are no bosses to complain to because in this economy, the people are cogs in a larger automated system. Serfs in feudal Europe provided labor, and the owners of property reaped the profits. Today, the property is digital. Jobs of the future will heavily rely on algorithms. We already see algorithms automating much of Wall Street, and more financial analysts are likely to base their decisions on quantitative algorithms than qualitative research, and Algorithmic Application Programming Interfaces (APIs) are impacting the insurance industry.

December 2018
LAMINATED REALITY:
THE EVOLUTION OF
SOCIAL INFLUENCE

Laminate is a layer of plastic, or other protective material cast over a flat surface – a synthetic, often-glossy coating that protects the exterior. But socioculturally, it evokes a larger metaphorical question: Are more people living in – and craving – a laminated reality? A protective bubble in which hyper-curated, aspirational, filtered, photoshopped and escapist images populate our social media feeds? Digital personas – both real and fake – can wield just as much, if not more, influence than real world ones. When reality is fraught with fear, anxiety and trepidation, is a more visually-pleasing laminated parallel reality emerging alongside? Much is generationally-driven. Economic realities and delayed markers of adulthood – a full-time/lifelong job, owning property, marriage/children – are allowing young adults to spend more time on visual platforms like Instagram or YouTube, or ephemeral platforms like Snapchat or Instagram Stories. Each with a claim of individuality; a demand to be recognized as unique. These platforms encourage users to present an upbeat, attractive image that may be misleading and possibly harmful to the psyche of others. Instagram makes you worry that everyone is perfect – except you. It can also make you measure and compare “digital you” against “real you.”



2017

March 2017 DISCONNECTING FROM THE GRID

More of the world is connecting to grids. Many operations on earth are increasingly linked to the major grids: transportation, electric power, finance, communication – ultimately everything from water and food supplies to mobilization of weapons. WikiLeaks made it clear that everyone's smart communications and entertainment systems are listening to and/or watching them, something known to tech-savvy people and now made known to the public at large. Growing numbers of people and entities are seeking to either disconnect or have back-up plans for emergencies and catastrophes. Products, services and affinity groups for those who wish to disengage from one or all major grids will mushroom in the coming years. From local communities to businesses to militaries to real estate developers to individual households, interest in either living disconnected from one or more grids, or being prepared should any shut down, is rising. As talk of autonomous vehicles grows, so does interest in old fashioned cars that are not as vulnerable to communications disruptions or hacking, and that can be fixed manually by old-fashioned mechanical know-how. And even bicycles, requiring no outside power source or connection. The same for the smart home. And wallets. Concern about hacking and malfunction has led growing numbers of people to question whether their homes, cars or money are secure in connected grids. This will also exacerbate fears over wearable (and increasingly implantable) devices. Real fears and real possibilities form needs. Those needs create markets, and those markets create affinity groups and innovation, and they spur competitive solutions. Wide scale availability of those solutions might even help to allay some of the fears.

March 2017 METAMORPHS: DEFINING THE NEXT GENERATION

With the exponential rate of technological change, generations today cannot be defined in 12-15-year age cohorts. They are refreshing much more quickly – perhaps every three-to-five years. Children only a few years apart do not have the same frames of reference. Generation Z, or Cybrids, because they have a symbiotic relationship with the digital world. Behind them is the “next-next” generation. What differentiates this generation – 5 years and under in 2017 – is that they are not just symbiotic with technology; they are morphing with it. The combination of artificial intelligence + ambient intelligence will amplify the real world to such an extent that they will be indistinguishable from technology. It will be fully integrated into their natural behaviors, and seamlessly interwoven into their daily lives. They will undergo constant transformations – culturally, economically, politically, technologically. Their existence may be a constant metamorphosis whereby the nature of both their internal composition and external realities frequently change shape and structure. They are *Metamorphs* – they will not only morph with technology but it will transform all aspects of their lives and ways of being. Born into a world of constant and near ubiquitous interconnection, their ways of viewing the world, interacting with their environment, interfacing with technology and relating to other humans will seem foreign to many of us. Their cognition, emotions, relationships, social behaviors, values and attitudes, learning capabilities, consumer behaviors and future careers will not adhere to traditional definitions.



March 2017
THE RISE OF THE
NEOHUMANIC
WORKFORCE

The world will be increasingly inhabited by “*neohumans*” – which include intelligent, learning robots that are accorded some sense of humanity. Neohumans will interact with us and each other in ways that existing social sciences do not address. They will interact with us in ways that traditional organizational culture does not address. The neoHUMANIC workforce of the future will be made up of both humans and AI neohumans working side-by-side. Now, we must create another framework (and acronym) for workplace culture – one driven by the seismic shifts happening in automation: Hierarchy-Less & Unmanned; Machine-Based & Automated; Nomadic; Inverted; Cobots/Symbots. By adopting the latest technology, many organizations are changing the way their companies are run, a shift that has non-tech firms taking on more characteristics of technology and internet ventures. Some companies are pushing this one step further and asking if human employees are even necessary. With increasing automation, and more sophisticated AI, decentralized autonomous organizations may become the norm over the next decades. Board seats may be increasingly occupied by AI, as it can produce insights that humans would miss, and predict outcomes with greater accuracy. Increasingly, we may see an inverse relationship develop – people who are managed and coached not by other humans, but by AI neohumans, inverting traditional organizational structure.

June 2017
THE RISE OF
DATA-IMPLANTED
PERSONALITY
SYSTEMS (DIPS)

Big data and deep learning are combining to build psychographic bodies of information for product, service and marketing opportunities. Systems are themselves increasingly being infused with personalities. This is expanding to encompass all manner of system, from cars to political parties to platforms to the algorithms, themselves. Elite dating apps have unique personality features related to wealth, beauty or intelligence. Facebook’s understanding of the emotional and psychological states of users helps them target messaging that “empathizes.” Advertisers place ads on a wide variety of sites using buys driven by algorithms on ad networks like Google and Yahoo based on people’s search and browsing histories. More observers are agreeing that algorithms have personal biases, reflecting personalities and beliefs of those who create them. As people expect more entities to exhibit personality, it will be interesting to see how organizations put forward a sense of their own psychographic personality.

June 2017
NEOTRIBALISM &
THE RISE OF
COLLECTIVE
NARCISSISM

Neotribalism is a sociological concept which suggests that humans have evolved to live in a tribal society and will naturally form social networks constituting new “tribes.” Despite globalization and technological progress, we continue to engage in in-group vs. out-group categorization. And global leaders are fueling our sense of tribalism by further dividing people into an “us vs. them” mentality. Today’s automation-age tribalism is not too different from pre-industrial tribalism. Instincts to demarcate self and other persist. The revitalization of tribalism is making humanity’s divisions even more intractable. Collective narcissism – which is directing more of world politics – is when someone exhibits an exaggerated belief in the superiority of their in-group, but feels doubtful about their group’s prestige and therefore craves recognition from others. It can fuel hostility between countries, and is typically defined by a paranoid and defensive tone. There seems to be no limit to what collective narcissists can construe as offensive and antagonistic. The internet connected marginalized groups and jobs became even more precarious as technology reached further-up and out in the workforce. With the rise of neotribalism, are we moving closer towards social de-globalization? Are we inching back to a medieval-like era when humans were fiercely loyal to their own tribes rather than to larger societal interests?



September 2017
MOVING FROM
SOFT POWER TO
DIGIPOWER

Soft power is the ability to shape opinion in a non-threatening or non-militaristic way, usually applied in a geopolitical context. Societal norms and culture – both examples of soft power – have long played an important role in shaping politics and policies, and can profoundly influence a country's perceived legitimacy on the world stage. Increasingly, soft power is giving way to *DigiPower*, driven by non-traditional, largely tech-based digital channels and players, transforming the way governments, organizations and individuals wield domestic and global power. Social media – and the big data it creates – is changing the dynamics of DigiPower, and is the latest arena in the global fight for influence. Implementation of blockchain technology is also becoming a source of DigiPower for several countries. The U.S. has many sources of soft power – its universities, elements of pop culture, etc. But that is increasingly being superseded by new forms of DigiPower, many of which are coming out of emerging global giants. Forward-thinking, innovative forms of DigiPower will become leverageable competitive advantages and ways of shaping global influence and culture. Ultimately, data, in and of itself, will become a profound source of DigiPower.

September 2017
FOREPOWER

Pressure is mounting among many populations, and on many governments, to preserve what *is*, or restore what once *was*. But regions or nations that integrate foresight in a systematic and disciplined way will be able to establish "*ForePower*" – power achieved directly from foresight: technological ForePower, economic ForePower, social ForePower and environmental ForePower. The world map of the near future seems to be recalibrating. While practicing foresight has always been an important discipline, it is now a top-down existential imperative in an increasingly complex geopolitical environment, that already combines hard power, soft power and, increasingly, DigiPower. ForePower (as well as soft power and hard power) is among, and between, nation states, but large enterprises, such as tech giants, wield perhaps greater societal influence than at any point in modern history. Consequently, they could have the opportunity, at least in certain fields of endeavor, to surpass even the world's most prominent countries when it comes to the tangible demonstration of ForePower.

December 2017
THE SOLO ECONOMY

Humans are social beings, but more are living solo lives. More people globally are single, and more products and services are being geared towards the solitary consumer – a powerful, yet oftentimes overlooked, demographic. The solo economy is generating enormous profit opportunities around being alone together. We've known technology's ability to connect and separate. But now the creation of isolated, individual/individualized experiences represents a growing market opportunity. The technologies that have been criticized for exacerbating loneliness, have, in some ways, the opposite effect on older adults. The solo aging market represents a major opportunity. A common concern among older people is loneliness, and technology is helping to mitigate it. Social media influencers, hyper-individualized media, curated e-commerce experiences and targeted content delivery will take on increased significance and value in the solo economy.



2016

March 2016 MOONSHOT ECONOMY

Silicon Valley firms and entrepreneurs have started betting on “moonshots” which would have a huge impact if successful. Google’s recent restructuring highlights the trend. Its holding company Alphabet spent nearly \$4 billion on moonshots last year. The expectation is that moonshots will mostly be the purview of the very wealthy, but public projects may soon follow. Moonshots will signal a seismic shift from the innovation we see today to an entirely new era characterized by uninhibited imagination across all industries. In today’s intangible, tech-based economy, we see more billionaires with bloated bank accounts and tech firms with bloated valuations. But, in the face of that cultural shift, we might also see these enormous fortunes applied more constructively toward addressing world problems through moonshots. Perhaps no frontier is more exciting for moonshot activity than outer space. While many governments have deprioritized space exploration, we see inspiration for many provocative moonshot ideas emerging today from the private sector – in what could become a near-future hotbed of public-private partnerships. The moonshot economy is inherently based around imagination. And the most successful leaders of tomorrow will be those who not only imagine, themselves, but who foster a culture of imagination among their people. This will be one of the most important competitive differentiators in the future, defining leadership in the private, non-profit and public sectors.

March 2016 WARGAMING

Research indicates that global deaths from wars and related violence have been on the decline for quite some time. Much of this can be attributed to the changing nature of warfare itself. Because of advanced technology, warfare has evolved to become less primitive. The strategies, tactics, theaters of engagement and nature of human participation have changed profoundly. Today, countries with nuclear weapons have embarked on highly ambitious and costly programs to renew the strategic and tactical weapons in their arsenals that pose the greatest threats. War itself is increasingly resembling a videogame. We might consider this to be *wargaming* – or the gamification of war. This is not about conventional military “war game” simulations used for preparedness. And this is not about popular videogames in the consumer market designed to mimic real wars. This is about real warfare increasingly resembling videogames. As we consider the ways that real war takes on videogame themes, characters and characteristics, we should ask ourselves what the broader ramifications will be, and how this could trickle into many other non-military sectors. Combat will be increasingly populated by specialized drones and robots that are fully autonomous or operated remotely by human pilots.

June 2016 INFLUENZA: AN EVOLUTION OF VIRAL INFLUENCE, AUTHORITY & PERSUASION

Authority is moving from the traditional, credentialed, regulated and institutional toward that which knows *more than you do about something important to you, and believes what you do about it*. Because of emerging technology, this dynamic is becoming even more powerful. Ideas are spreading in new ways, and faster than ever before. And the people, institutions and entities whom we truly trust as influencers, and to whom we assign real authority, are also changing. People are paying attention to – and who they’re actually listening to. What it means to be a celebrity is changing rapidly, particularly among the youngest generations – Millennials and Gen Z (Cybrids). And those celebrities wield



tremendous influence. Brands capitalize on the growth of influencer marketing, where video creators with sizable followings on YouTube feature products in their videos. Influencer recommendations are trusted by over 80 percent of consumers. Influencer marketing started on YouTube and has expanded to other video platforms like Facebook, Snapchat, Instagram and Twitter. Video creators are increasingly seen as the best way to reach young consumers. E-sports is also growing rapidly. And virtual reality (VR) is evolving into a very important medium for storytelling and narrative, with the potential to create immersive experiences that change people's perspectives about issues, increase empathy and consumer engagement and even influence public behavior during crises.

June 2016
SYMBOTS

Many are concerned about a quickly-approaching era of technological unemployment. But rising alongside is another narrative; one that is not about humans versus robots, but humans with robots. It is about *symbots* – a term referring to a new breed of robots which represent and embody the complimentary, collaborative, cooperative, and more importantly, symbiotic relationship between humans and robots. Symbots are not just about automation, but augmentation; and not just about replacement, but enhancement. Industrial employees are learning to work side-by-side with the latest generation of robotic systems. Robots do the tasks; humans do the thinking. Collaborative robots – dubbed cobots – account for just a fraction of global industrial robot sales, but these flexible robots have the potential to revolutionize production, particularly for smaller companies that account for 70% of global manufacturing. Micro-factories that allow for rapid prototyping and iterative design allow humans to drive innovation while robots fill the lower-skilled roles.

September 2016
IMAGISTRUCTURES

In the future of the built environment, many more aspirational ideas are surfacing. *Imagistructures* – the reimagining of the way we design, develop, maintain and interact with our infrastructure – will provide not just innovative but imaginative solutions to global challenges. According to a recent report, in 100 years we could be living in underwater “bubble cities” – sub-aquatic communities consisting of self-sustaining pods that are powered by the water around them. Materials like bone and eggshell could be used to construct buildings. Living Architecture is developing construction bricks composed of biofilm that can harness solar energy, wastewater and air pollution, and turn them into usable resources. Vertical farms are cropping up around the world. As buildings become both more biological and technological, they could do everything from self-heal after a natural disaster to change shape to accommodate the climate, or morph to suit individual company and employee needs. When combined with VR applications, our experience with and in the built environment will change. VR will have tremendous consumer applications, but may have even bigger implications for architecture, engineering and construction.

December 2016
**RECIRCULATIVE
DESIGN: THE FUTURE
OF WASTE**

Innovative and alternative methods of manufacturing and production are becoming a necessity in a world of rapidly diminishing resources and wasteful consumption habits. As the world quickly runs out of room for all the trash amassed, companies will start to take a better look at alternative methods of waste disposal. More companies are beginning to take the first steps in adopting a circular, closed-loop system to design out waste by creating products that can be perpetually recycled in either a technical/industrial or biological cycle. *Recirculative Design* is our term for incorporating regenerative and nature-inspired design + environmental circularity + zero waste & toxicity + rapid



technological and scientific innovation, e.g., bioengineering, synthetic biology, 3D printing. This framework represents an overhaul in how products are designed, built, sold, consumed and disposed of. While an extension of the circular economy – which is based on resource efficiency, product optimization, transparency and environmental sustainability – recirculative design seeks to gain independence from our current finite resources and create its own sources of energy and materials. Municipalities, urban developers, designers and manufacturers will increasingly have to think in terms of recirculative design as more people crowd into already crowded urban areas. The wasted goods and by-products of today need to be seen as the raw materials of tomorrow.

December 2016
THE AFFECTIONAL
ECONOMY

A technological revolution is now redefining the business of emotion: it is allowing advanced machines to read, recognize, decipher, decode, process and even mirror human emotion. We are entering *The Affectional Economy* propelled by the rapid rise of affective computing and machine-based emotional reasoning. Through affective computing – machines that can interpret, respond and simulate human emotion – we are building the digital equivalent of human emotional intelligence, and we are quickly reaching a new level of emotional transparency. Computers are starting to learn when to offer people immediate emotional support. That requires a deeper understanding of humans. Many roboticists want to get to a point where robots can successfully manipulate our emotions. Scientists are already using machine-learning algorithms, natural language processing, sentiment analysis and artificial neural networks to build robots that can understand human emotion. As we interact more with voice- and gesture-controlled machines, we may expect them to recognize emotions such as humor and sarcasm. A computer can now unmask hidden bias by scrutinizing people's body language for signs of prejudice. This is leading to what scientists refer to as artificial general intelligence (AGI) – AI that has some personality and even emotions that allow it to interact naturally with humans and develop motivations to solve problems.

December 2016
TRUST: THE NEXT
LUXURY MARKET

The number one luxury for many people has long been time. Trust will become the next “luxury” market for organizations and individuals. As AI, smart systems, advanced software, robotics and the Internet of Things (IoT) increasingly expand, people are getting swept up in a digital undertow. Within this context, there will be a growing vacuum of trust. Who – or what – has access to our data? How are they using it? Is our information secure? Is anyone watching us? Are there proper safeguards in place for all the technology we use? Trust will become one of the most valuable currencies of the future. While technology will commoditize everything from baby monitors to airplanes, vulnerabilities will multiply. People who can afford it will hire people to monitor their connections and services, because they won't necessarily trust software to do it. In this context, people – as trusted intermediaries – could become the ultimate luxury.



2015

March 2015 SPIRIT-DUALITY

Spirit-duality is a mash-up that will define the future of work. Technophiles and technophobes. Science and spirituality. Western and Eastern medicine. These opposing forces are often viewed as being mutually exclusive, but they are now fusing together. The convergence of big data, algorithms, self-quantification, wellness, spirituality and alternative medicine could lead to the development of a new approach to the living organism – one that will transform not only medicine and healthcare, but also how we work in the future. We are at the nexus of four seemingly disparate, but interconnected, trends. (1) The rise of tracking technology & self-quantification; (2) Othersourcing: algorithms & big data – the shift of tasks, jobs and labor from people to “non-carbon life forms. (3) Nourishing wellness to achieve greater productivity: With a renewed focus on workplace stress and burnout, companies are seeking ways to enhance the spiritual and mental wellness of their employees. (4) Increasing scientific legitimization for Eastern & alternative medicine principles.

March 2015 SOCIALBOTS: AN EMERGING CONSUMER DEMOGRAPHIC

The age of robotics is clearly upon us. Deep learning AI, machines that continuously learn higher orders of functions, has in the last five years become about 10,000 times faster and about 10 times more accurate at understanding the content of images. It will soon make major inroads in understanding human language. Researchers are attempting to build a RoboBrain – a knowledge engine that is iterative via ongoing learning. As more researchers contribute knowledge to RoboBrain, their robots perform better, advancing the robotics community at large. That knowledge will range from understanding natural language instructions to handling eggs and light bulbs to querying online “how to” videos and learning from them. The Human-Robot Interaction Laboratory at Tufts University defined social robots as “any robots that collaborate with, look after, or help humans.” A robot ethics researcher at MIT says they are “physically embodied, autonomous agents that communicate and interact with humans on an emotional level.” Robots are a quickly growing population. Many more will be working alongside people, and smarter, social robots will perhaps team up with people only because they will need human assistance, as opposed to the humans needing robotic assistance.

March 2015 INFRASTRUCTURE COMPETITIVENESS SCORECARD 2.0

Infrastructure has long been defined in an industrial-era context, using a soon-to-be-outdated industrial-era model for development. A new framework is needed for evaluating the future competitiveness of cities, countries, regions and companies: The Infrastructure Competitiveness Scorecard 2.0 does not represent the entirety of this scorecard (there will likely be dozens more). They form a sort of “cheat sheet” of variables on which future infrastructure will be evaluated: “Smart” Sensor Networks; Support Platforms for Startups; Driverless Cars; Robotic Workforce; Drones; Data Storage Capacity; Gaming Networks; Internet “From Above; Hyper-Efficient Urban Farming; Cybersecurity Backbone; A Thriving Collaborative Economy; State-of-the-Art 3D Printing. In order to perform well on the infrastructure competitiveness scorecard 2.0, the public sector will have to adapt some best practices from the private sector.



March 2015
THE E-SPORTS
REVOLUTION: VIDEO
GAMES AS THE NEXT
SPECTATOR SPORT

Global revenue in the video game industry is now \$20 billion higher than the music industry's and is chasing that of the movie business. The industry's focus has turned toward the lucrative world of professional video game competition, known as "e-sports." Pro gaming has been big in countries like South Korea for over a decade. Now, e-sports are exploding on a global scale. More than 70 million people worldwide watch e-sports on the Internet or TV. Tournaments sell out arenas and some attract at-home audiences larger than those of top traditional sporting events. Top prizes for some events are now in the millions of dollars. In an era of decreasing attention spans and increased distraction, some traditional sports are struggling to maintain their respective audiences. In the U.S., people are actually debating whether baseball (America's pastime) or football (the U.S.'s most popular sport) will survive in the long-term – both thoughts previously inconceivable. One of the things helping to sustain these sports (if not allow them to gain audience) is the explosion of fantasy sports. But, while fantasy sports have been a short-term boost for real sports, do they represent a sustainable solution? Enter the new competitive threat: e-sports. And as more money gets funneled into the system, especially from sponsors, e-sports prize pots are likely to increase. Will income earned through e-sports flow through traditional channels? Will it be recognized like traditional income? What will be the tax ramifications, especially if payouts evolve to include forms of virtual or digital currency?

September 2015
GERONTOLOGY

Gerontology is the study of aging and the elderly; gerontopolis is a city comprised of older persons. Yet there is no term to describe the body of business, research and built and engineered initiatives emerging for and around the aging. We use *gerontopoly* to define this burgeoning industry and economy. The entire industrial world is aging. The US baby boom will ensure that its entire 60+ population will number well over 100 million within a decade. By 2050, the portion of the entire world's population over 60 will approximate 20%. The upside of this is that one of the most powerful and little understood markets is emerging globally, with too little money or a great deal of money, a lot of time, rising discomforts and accumulated experience. Financial services will be transformed through gerontopoly, including health and long-term care insurance. Caring for the aging population will be one of the hottest sectors of the economy, with demand for employees well outstripping the supply of workers trained in the field. Retail and entertainment will also see enormous benefit from the growth of gerontopoly, once it becomes even clearer that older people want to buy, see and do many of the same things as their younger counterparts, only with older bodies and different capacities.

September 2015
LEAPFROG

In much of the developing world, an "energy templotion" and a "digital templotion" are going hand-in-hand. When it comes to energy, advocates see an opportunity to "leapfrog the grid" by connecting developing countries directly to renewable energy, thereby bypassing cumbersome, aging infrastructure. Infrastructure has long been defined in an industrial-era context. But developing countries can move beyond the West in terms of future economic development if they are able to jump right to clean technology. Digital leapfrogging is one key component of this. Data is infrastructure. The recent changes in the developing world are similar to what occurred with the mobile phone revolution in Africa. As mobile telephony dropped in price and became more widely available, there was little incentive to build traditional phone lines. As a result, Africa leapfrogged the rest of world when it came to mobile banking, money transfers and microfinancing (e.g. M-



Pesa). In many ways, because of the speed of change, LEAPFROG is becoming the imperative in the developing world. The acronym is made up of the following: Light & Energy; Aerial; Printabale; Free Wi-Fi; Remittances & Open Mobile Payment/Savings Platforms; Gender-Based. New, distributed business and educational platforms will also help people leapfrog traditional notions of work and learning. These were always bounded by the constraints of geography. But now, access to open-source knowledge, coupled with the digital revolution, are beginning to even the playing field.

September 2015 WORKREATION

We are currently facing a landscape where long-term employment is waning, relationships between employers and employees are more transient, and there seems to be little to ease mounting fears among the working class. Only one-fourth of the world's workers have a stable job, and stagnant wages are commonplace. For some laborers, automation is a dire prospect, especially if these workers do not have the skills to take on more complex jobs. In the U.S, by 2040, the economy may be "scarcely recognizable." There will be more part-time assignments, re-localized production, independent contracting, peer-to-peer work and self-employment as traditional jobs begin to disappear. As smart machines relieve us of tedious tasks, they may allow us to spend more of our time being creative. It is becoming more apparent that traditional paths to economic viability are vanishing. We are hardly needed for, or benefiting from, any of it anymore. Instead, we may see the mind redeployed in much more highly engaging ways. Ultimately, does this mean we are heading towards a *workreation* future – where jobs consist of more creative endeavors? A future where creation itself – rather than material compensation – is what compels us to work? Equally important is the intimate relationship between work and purpose. Self-reliance and work are connected to human dignity and meaning. Will people increasingly redefine their sense of purpose in more non-economic terms? Or could this have a detrimental long-term effect on human psychology?

December 2015 FITS: FEAR OF INVISIBLE THREATS SYNDROME

Historically, populations have always feared invisible threats. For many in the world, the invisible threats have multiplied and are continuing to do so. From the fear that one's child will be kidnapped and sold into the human trafficking network or conscripted into a militia, to the fear that no place or person is safe from terrorists, many otherwise "safe" people in the world have become gripped in a spiral of heightened attention to attacks of so many kinds. What we see accumulating evidence of, and what we can surmise from that evidence, is that the number and scale of invisible threats are increasing, and more people are being caught up in knowing about, dealing with or worrying about those threats. Perhaps this has something to do with the finding that lesser educated white middle-aged U.S. males are committing suicide and experiencing morbidity rates much higher than any other demographic group. They report more pain, more financial distress, addiction to opioids and alcohol, difficulty socializing and inability to work. The rise in fearing invisible threats invariably leads to the demagoguery of leaders and politicians, and in authoritarian messaging. When people are cumulatively and sufficiently frightened, they are willing to give up individual liberties in order to be offered protection and safety.



2014

March 2014 THE GLOBAL URBANEXUS

Globalization is currently under siege. The pace of world economic growth has overtaken growth in international trade for the first sustained period of time since World War II. Geopolitics at the national level, coupled with myriad technological efficiencies, is spearheading the charge for many countries to look inwardly for economic development. The West's leadership and influence is precarious at best. National politics the world over are becoming more polarized, and more things are simply getting done at the local level than they are at the national level. While this all may sound like isolationism, it is merely the backdrop for the next evolution in politics, international relations, trade – and ultimately innovation. More than half the world's population lives in cities and that percentage is increasing. And the largest cities are getting even more crowded. We have long been moving toward a world oriented more around city-states and less around nation-states. However, we now see signs that the future will be about the interconnectedness *between* these cities. The rise of the urbanexus is a clear, positive adaptation to several global macro-factors gaining momentum today.

June 2014 PLATFORMIA: INTRANET OF THINGS & ANTI- INTEROPERABILITY

Within the last few years, the emerging “Internet of Things” (IoT) has entered the mainstream vernacular. Generally, two opposing schools of thought have emerged: Those who have a positive vision of the IoT and see the promise of seamlessness and efficiency inherent in the technology. Then, there are those who have a negative view of that same future, citing concerns about invasiveness and privacy. However, one assumption underlies both – the idea that the IoT will increasingly become ubiquitous and interoperable. One defining feature of the IoT will be interoperability – its devices will need to be able to send and receive signals from one another and to understand what those signals mean. Perhaps, the future IoT will not be seamlessly connected, open and universal. Rather, we may see a near-future of many separate *intranets* of things and general anti-interoperability between the systems that form the architecture for this technology. This is a world of Platformia. Today's tech landscape is dominated by the network effect – when each new user of a product makes its value higher. Now that more objects are wired into networks, there are opportunities for new, powerful platforms to emerge.

June 2014 RISK IN THE WHITE SPACE: THE CHANGE/ RISK MATRIX

Technology and society are changing so rapidly, that the calculation and identification of risk is becoming almost prohibitively difficult. Things are changing too quickly for risk assessment to ever fully catch up, but much of the emerging risk is what we call risk in the white space: risk where it may not have been predictable beforehand and/or risk that does not tie back to any clearly liable entity. If a new technology changes the way our brains operate, then is there tangible “risk” associated with that technology? Are the developer and distributor of that technology liable? In a world dominated by big data, predictive modeling, actuarial tables, business forecasting and scenario generation, it seems inconceivable that calculation of risk could be such an imperfect “science.” How will businesses in the future account for dynamic, unforeseeable or less tangible risks? We have developed a matrix we call the “Change/Risk Matrix”: X-Axis – Change: The risk borne out of Technological Change or Societal/Cultural Change? Y-Axis – Risk: The risk, or set of



risks, Tangible or Intangible? Tangible risks are more straightforward and more directly measured or quantifiable. Intangible risks may involve a murky correlation of liability. Or, they may involve subjective, cognitive or “perceptual” risks that are not as clear-cut as many traditionally calculated risks. We need to examine what we call the “white space”: Intangible risks precipitated by highly disruptive – and fast – technological or societal/cultural change.

June 2014
THE MILLENNIAT

The Precariat – a mash-up of precarious and proletariat – represents the growing class of people living with short-term and part-time work, and struggling with perilous living standards. In the US, the Precariat reveals a despondency that is historically uncharacteristic. And nowhere is this as evident as in the Millennial generation. Precarity, a condition of existence without predictability or security – lack of job security and stable occupational identities, coupled with growing income inequality and economic immobility, marks the Millennial – the socioeconomic class made up of insecure, disconnected young who feel robbed of the better future they expected. They are experiencing a general loss in self-confidence, faith and trust. Many of the foundational characteristics of the Millennial run counter to commonly held assumptions or attitudes about Millennials. American exceptionalism is basically gone. This may be tied to the fact that Millennials do everything related to independence a bit later than previous generations and may not be as independent as originally perceived.

September 2014
**CYBRIDS: DEFINING
A GENERATION**

“Generation Z” is loosely defined as those born after 1995 – the tipping point when the internet became a commercially ubiquitous technology. There are roughly two billion members of this generation worldwide, representing around one-quarter of the North American population. They are educated, industrious, collaborative, entrepreneurial, community-oriented, financially prudent, eager to build a better planet, and less likely to subscribe to traditional gender roles. They generally lack brand loyalty and spend most of their money on food and beverage, and generally favor same-sex marriage, marijuana legalization, strict gun laws, citizenship for illegal immigrants and government that fights climate change and inequality. They are not just digital natives – children who have grown up, literally from the time they were born, surrounded by digital technology – they are *Cybrids* – cyber hybrids, who have a fully symbiotic relationship with the digital world around them.

September 2014
**THE EMOTIONAL
PANOPTICON**

A Panopticon is a type of institutional building made up of a ring of cells surrounding a central guard tower. The concept is to allow a single watchman to observe all inmates without the inmates being able to tell whether or not they are being observed, therefore, all inmates must act as though they are watched at all times, thereby controlling and regulating their own behavior constantly. Today, we are increasingly acting as both guards and prisoners, witnessing and judging each other as we ingest and share digital content. In a panoptic world, what is the emotional and psychological fallout? Is permanent visibility leading to the atomization of human emotion? In an age of constant, multi-channel, real-time sharing, we have become an amalgamation of highly-curated, self-regulated, publicly-facing versions of ourselves. Our digital personas are increasingly molded by a series of likes, dislikes, clicks, comment threads, tagged photos and videos, and emoticons that try



to substitute for real emotion. Social media and much of the rest of the internet have become thriving Petri dishes of social contact. Increasingly, we are deferring to apps – and other electronic gadgets – to monitor, shape, control, visualize and define our emotional experiences for us.

September 2014
FLIP-GENERATION
LEADERSHIP

Over the next decade, many of those who were born in the 1980s and some in the 1990s will ascend to senior management and executive positions. Frequently, they will be superiors to those who are their elders, some by more than a 25-year difference. The size of the phenomenon will be vastly greater than it is even today, and the implications are staggering. What can we expect when leadership flips generations, and armies of those 25-39 begin to oversee those over 50? That will leave many decision-making responsibilities to young people who lack the experience of their predecessors. A lack of depth and breadth of knowledge generally, not just related to legacy knowledge in an industry or company, may be a core characteristic of the younger generations. Those who are currently in their 20s and 30s will have continued problems with negative, even though constructive, criticism. Clearly, those who make up the younger generation of managers/leaders will have a far different relationship with people. Coming of age during periods of high unemployment might make them less narcissistic and able to experience higher long-term job satisfaction than those who came of age during the strong economy of the late 80s and 90s. Younger executives have a more urban orientation than their seniors. Flip generation leaders will have as much regard/respect for technology as people, and pretty much consider “non-carbon life forms” equally as “human” resources. The people they lead will be expected to perform as well, or better, than the advice and work they get from online sources, and they will not have patience for human drama, long timelines and protracted flow charts. Bureaucracy will not fare well with them, and tenure will have little standing. Time, for the younger generations, will have sped up, so organizational processes will be led by people who do not have time for processes.

December 2014
THE DIGITAL
“PSYCHOSPHERE” &
AFFECTIVE COMPUTING

Over a decade ago, we knew the path to genetic mapping and brain research would lead to a greater focus on behavior and emotions. We coined the term psychosphere – a subset of the biosphere in which all the feedback loops intersect with mental models and emotional contexts. Today the psychosphere is directly influenced by digital technology. *Affective computing*, which refers to technologies that measure, respond to, influence and help regulate our emotions will take center stage in reshaping this digital psychosphere. Advancements in affective computing promise to alleviate the emotional side-effects of digital technology by helping us achieve an improved mindset. One of the main debates around affective computing will be how effective it is versus how appropriate and/or ethical it is. But accessing data on someone’s every move will be controversial.



2013

March 2013 INTER SPACE

Much like how designers draw inspiration from nature through biomimicry, inter space is all about the development of new and diverse “nets” that draw inspiration for their engineering and design from the architecture of the Internet itself. And while the Internet is a human creation, it – like elements of nature – has evolved. Some new networks are artificial; others partly organic. We will increasingly hear about the Internet of Things – “real” things increasingly connected to each other virtually in an Internet-like structure. In the near future, low cost smart chips will be added to each device in circulation to give it an IP address. The “Internet of Everything” will extend intelligence, distributing control over and between objects that surround us. We are fast approaching a future when there will be a “net” for everything (e.g., sharenet, matternet, genomenet, quantumnet, mindnet, gridnet, makernet).

March 2013 ALTERNATIVE CURRENCIES

The very notion of global currencies is changing significantly. We’ve talked before about how virtual currency has been fast to emerge for the past several years. We’ve also talked about the spending power of loyalty reward points. But, increasingly, other global currencies are giving rise to an alternative financial system that may become harder to regulate, control and predict. As more people lose faith in financial institutions, many national currencies are falling prey to alternatives. Economic hard times, coupled with advances in technology, have produced a wave of new channels of exchange, which let people extract value and do business in completely new ways. A variety of sanctions on countries, institutions and people are also creating a need for new ways to pay and be paid. To skeptics, virtual currencies may seem like a newfangled version of Monopoly money. To others, virtual currencies may seem like the end to a money monopoly. But the answer is somewhere in the middle. Rather, what we are seeing is the gradual decentralization and democratization of currency.

June 2013 BORED GAMES

There has been considerable dialogue around the issue of attention – with special emphasis on global youth populations. However, the focus of the discussion is now shifting from attention to boredom. Boredom studies are a fast-growing, formal field of inquiry. Researchers suggest that boredom has serious consequences for health and productivity, linked to depression, overeating, substance abuse, gambling and even mortality. Smartphones and other digital technologies may also change the way people experience boredom. If we understand that boredom is increasing, and that it is often not rooted in biological or psychological “malfunction” – but it is increasingly becoming a normal part of the human experience – then we can take a more positive approach to the issue. A focus on better integration of the concepts of fun and play will be integral in dealing with boredom in the future.

June 2013 THE NEW HUMAN BIONICS

Disruptive technologies, in combination with advancements in science, are altering our understanding of our own biology. We are crunching big data, tapping into social networks, leveraging health apps, relying on sophisticated medical diagnostic tools, enabling real-time mapping of outbreaks, sequencing the genetic code, mapping the brain, learning more



about the interplay between senses and discovering the intricacies of the mind. New tools, materials and automation techniques promise great possibilities. We are entering a future where our biology is becoming self-defined, assembled, manufactured, and increasingly unique. For instance, advancements in new materials technology are leading to potentially game-changing health innovations. When combined with rapid improvements in 3D printing, the applications for human biology are manifold. And as design software merges with molecular biology, and the emerging nanoscale world of synthetic biology, the lines between designing for science and designing a building may be based on similar principles – each just uses different building blocks.

September 2013
LIBERTARIAN
“ME” CORPS

The principle tenet of libertarianism is that liberty – including individual liberty and political freedom – is more important than anything else. In contemporary and more moderate libertarianism, basic libertarian principles are not necessarily at odds with capitalist principles – in fact, the two can coexist very nicely given the right ingredients. Given this framework, we now see the rise of a new model of libertarian-inspired capitalism, in which individuals avoid traditional institutions and processes. One clear manifestation of this is a phenomenon we have dubbed “Me corps.” This is an entirely new entrepreneurial ethic. Instead of individuals or sets of partners starting a business and looking for outside investment in the future of that business (and by extension, the “management team”), we now see people who are looking for direct investments in themselves. They are literally selling shares in themselves, their success, their data and their lives as if they were their own corporation.

September 2013
COMMUNICHASMS

There is a vast and growing gap between the maximization of our issues and the minimization of our abilities to talk – and think – about them: communichasms. For instance, one highly-significant direction for language is the growing use of images and symbols rather than words. The impetus for this comes from several factors, including: (1) the increasing universality of communication, spanning different cultures and parts of the world; (2) the burgeoning human/machine interface, with its need for easily-understood communication; and (3) the “Internet of Things,” requiring unambiguous language between objects. While technology can enable the communications essential to organizational functioning, it can be offset by trends that seem to be contributing to declining communication skills – and to both growing gaps in understanding between people, and the growing disconnect between what we are faced with and the language tools we have to think and talk about them. To help fill the communichasms, there will be a growing need to focus more on design thinking, digital thinking, mindful attention and critical thinking.

September 2013
TECHNO-FASHION

Wearable technologies – defined as what can be worn close to the body, on the body or in the body – are being increasingly refined to address basic human needs and desires. Wearables will revolutionize health and fitness, the workplace, homes, schools, personal and professional relationships, and everything in between. Advances in microelectronics, data storage and new materials technology will also mean more powerful, smaller, cheaper, more transparent and less detectable technologies. Techno-fashion has the potential to revitalize the in-store shopping experience by engaging shoppers in an entirely new way. Retailers that do not adopt, or prevent, the use of wearable technology in-store may lose favor among consumers interested in new shopping experiences. As wearables



become smarter, they may also open the door to a more granular and targeted understanding of people's behaviors. This oncoming flood of real-time information will likely provide the backbone for the next evolution of big data analytics.

December 2013
RECALLITY VS.
REALITY

Recall refers to the retrieval of events or information from the past and, along with encoding and storage, is one of the core processes of memory. But what we think we recall might not always be what actually happened. Despite our efforts to remember past memories, our "recallity" is oftentimes not synonymous with reality. In fact, according to scientists, no matter how good our recall is, we still have false memories. The way real memories and false memories form in the brain appear to be the same. Even people with "perfect memory" can be tricked into recalling fake events. As scientific and technological discoveries uncover more about everything from sensory and time perception to sleeping and dreaming, we are learning that recallity and reality are not always congruent. More will be uncovered in coming years about lucid dreaming and how this affects our experiences, behaviors and relationships in the real world, including how it may affect performance, productivity and motivation.



2012

March 2012 THE YOTTASPHERE

In the world of information technology, 'big data' is rapidly expanding. Big data presents a tremendous challenge in the business world, the policy arena and the scientific community. How do we capture, organize and analyze all of this data effectively? Big data also presents a tremendous opportunity in that it allows those who effectively leverage it to make more sophisticated decisions than ever before – thus increasing output, effectiveness and profitability. Big data as a concept is nothing new, but the scale of big data – and the corresponding rate-of-change – is expanding at breakneck speed, possibly leading to a mind-bending threshold that has until recently seemed unfathomable. It is now at least within the realm of possibility that in the near future we enter a “yotta world” (the binary prefix “yotta” being equivalent to 1,000 trillion gigabytes) of digital data.

March 2012 THE METASPATIAL WORKFORCE

We refer to the emerging economy as the Metaspaces economy, defined by 10 growth areas for the future that are more intangible and virtual than anything we have seen before. As digital technology spreads, the classic relationship between rising output and rising employment appears broken. Okun's Law postulates that every 3 percent gain in output should reduce the jobless rate by a percentage point. Will Okun's Law hold in the Metaspaces economy? What will the 'Metaspacial' workforce look like? The long-standing, accepted relationship between rising output and rising employment now faces serious scrutiny. While technological change of previous economies has always brought about myriad new employment opportunities, the Metaspaces economy appears to operate differently. The sheer pace of change is making it difficult for the formal workforce to play 'catch-up.' Many people may be forced into entrepreneurship, constant makeshift employment, micro labor, or other more fluid and less tangible channels. This sets the stage for a future in which transitions between employment, semi-employment and unemployment are more frequent and less well-defined.

March 2012 THE ENERGY/ MATERIALS MATRIX

Advancements in materials technology are leading to potentially game-changing innovations in the energy sector. These materials are critical components of emerging technologies that promise to be major economic engines for growth. The development of these new materials may ultimately usher in a new era of energy-focused innovation, and a range of applications that stem from their development. One of the most promising avenues for research in this direction is the search for efficient solutions at the molecular and chemical level. The potentially low manufacturing costs of new materials, too, could significantly improve the economic viability of their use in energy-focused technologies.

June 2012 POP-STARTS: THE EMERGING BUSINESS ETHIC

We are entering the era of a “pop-up” world. Consumers have already begun to grow accustomed to several facets of this: Here-one-day, gone-the-next retail pop-up stores; pop-up ads; pop-up office space; pop-up food trucks, stand-up (or pop-up) meetings; and flash mobs (an extreme form of social pop-ups). But perhaps most profound will be the effect of this pop-up world on the future of entrepreneurship. There is now a rapidly burgeoning “pop-up” business ethic – one that is very different from traditional “serial” entrepreneurship. Underway now is a transformation in the types of enterprises started,



who starts them, and why they are even started in the first place. Pop-up entrepreneurship is a huge market opportunity for many B2C and B2B companies. Woven into the DNA of pop-up entrepreneurs is a near-immediate-term focus with an instant gratification. There is a highly impermanent – almost transient – quality to this market that will dictate what types of office space, technology infrastructure, and financial instruments they are willing to pay for or invest in.

June 2012
SUPRA-URBAN
VISIONS

More than 50 percent of the world's population now lives in urbanized areas. In fact, the human population is growing at such a staggering rate that the way we organize ourselves more closely resembles ant super-colonies than chimpanzees. All of this is continuing to challenge the way in which we view a world of rapid urbanization. But what if we moved beyond that? What would the future look like if we re-envisioned the make-up and mission of our dense urban centers? Reengineering, reimagining and re-envisioning how we live, where we live and what we live in will be needed to make cities really livable in the future. While newer urban centers have an advantage in terms of design knowledge, eco-based thinking and access to newer technology, there is still a lot of imagination that can be done to completely re-conceptualize traditional notions of urban design. For instance, over the last decade, floating architecture has evolved from a fringe niche market into a realistic opportunity for expanding the urban fabric beyond the waterfront.

September 2012
SPELL CHECK ME

Somewhat paradoxically, many people are relinquishing management of more organic facets of their lives to software platforms and apps in an effort to better exercise control of their lives. Similar to how we type and then allow for spell check or auto-correct to fix our mistakes, people now “spell-check” behaviors that have long been more human, instinctual or serendipitous. This is driven by four primary, underlying factors: (1) Time pressures; (2) Big data and the rise of “transactional me” (the “self-quantification” trend, whereby people leverage big data in order to measure the more transactional elements of their lives); (3) Fear of missing out; and (4) self-distrust. Many people simply no longer trust themselves to make the right decision or remember the right things when it comes to several aspects of their lives. They need a system of spell checks to either correct and/or validate their decisions and behaviors.

December 2012
ERUPTION OF
THE SENSES

We have always been taught that there are five basic senses (sight, hearing, taste, smell and touch). There is continued and rapid advancement in the study of how complex and integrated those five senses can be, and scientists are building applications around that integration. Many other senses – including kinesthetic sense, balance, direction, time and acceleration – beyond those governed by the basic five have not traditionally been considered “sensory.” However, we are now beginning to realize that the framework of five senses might be entirely too limited, like playing a piano with only five keys, and that there may be an unlimited number of human ‘senses.’ This eruption of our understanding about human sensory systems will revolutionize technology, research, health, environments, consumer products and customer service.



December 2012
THE NEW URBANITES

For the first time in human history, more than half of the world's 7 billion people live in cities. And according to the U.N., that number is expected to reach as high as 65 percent by 2050. Considering that we are fast approaching a time when nearly two-thirds of the world's population will live in cities, it will be more important than ever to understand the dynamics of cities. And it will be equally as critical to understand city-dwellers themselves. Global policy makers throughout both the developed and developing worlds will need to account for city-dwellers as the single most important growth market of the future – perhaps more so than any individual geographic market (e.g., China or India) or demographic market (e.g., global women). As the world's population further concentrates in cities, individual cities – as opposed to entire countries – will develop their own cultures, identities and economies. The world is increasingly about “city states,” as opposed to nation states. Many of the world's consumer-facing businesses will be tasked with continuously evolving most (or all) that they do to address the ever-changing dynamics of this burgeoning market – the ‘New Urbanites.’



2011

March 2011
DIGITAL SWAP
MEET: THE RISE OF
COLLABORATIVE
CONSUMPTION

Thanks to a host of new social networks and other web platforms, people can now trade, swap, rent or barter goods, skills, services or expertise with considerable ease. What we are seeing emerge is a more fluid approach towards ownership, and a dramatic shift in consumption habits. The decades-old model of inefficient hyper-consumption is rapidly giving way to a new swapping-based model called collaborative consumption. Rooted in the principle of separating product benefits from product purchase or ownership, people can save money without forfeiting any product advantages – all they sacrifice is individual ownership. But it's not just about changing our consumption habits; it's also about a widespread value shift. A shift from valuing possessions to valuing usage. A shift from valuing ownership to valuing access. We can expect that in the coming decade, a shift towards collaborative consumption will lead to the invention and reinvention of many new “meshed” business models.

June 2011
VALUATION VS. VALUE

There are fundamental and profound paradigm shifts evident among the world's most influential, contemporary technology companies. The “best of breed” technological enterprises of today are collectively rewriting the traditional rules of business, and exhibiting remarkable adaptability in the process. These companies make their money either exclusively through virtual products and services, or through a blend of tangible products and virtual platforms. These companies are highly profitable, while maintaining a relatively tiny human workforce. Thus, profits and subsequent wealth creation are concentrated in the hands of few. In many ways, these companies are considered to be the emerging gold standard in global business. An important equation is emerging when we assess the success, sustainability and integrity of these enterprises: Does High “Valuation” = High “Value” Delivered?

June 2011
THE FUTURE OF
CONNECTOMAPPING

Much has been written recently about the “Internet of Things.” The Internet of Everything will extend intelligence exponentially, distributing exceptional control over and between the objects that surround us. Companies ranging from Google to small start-ups are touting the interconnectability of people and objects. Eventually, these ubiquitous entanglements will lead to “connectomapping,” deciphering the intentions between Humans Systems «-» Things. Or, in other words, the creation of a global map of connections. Connectomapping involves the leveraging and harnessing of the following 11 variables: (1) the mapping of metadata systems, (2) multi-scale data integration, (3) predictive intelligence models, (4) environmental tracking, (5) impact monitoring, (6) the semantic web, (7) new sources of real-time data, (8) remote sensing, (9) social network analysis, (10) crowd-sourcing, and (11) innovative data-analyzing technologies.

June 2011
NEOCAPITALISM AND
ITS IMPACTS ON
THE MIDDLES

The longstanding conflict between capitalism and socialism seems increasingly to be becoming a contest between competing forms of capitalism. Over decades, Europe has developed another form of capitalism, blending in elements of socialism. Now we are seeing a transformation of the U.S. version of capitalism as well. The landscape is increasingly dominated by high tech companies whose “shares are essentially speculative investments,”



who don't pay dividends and who don't employ many people. The main result of all this is twofold: (1) a decline in regulation, and (2) a decline in the underlying principles of stockholder democracy. The newly developing capitalism is characterized by an expanded interlacing of business and government. What many have called a recession has masked the transformation capitalism is undergoing. Throughout its existence, capitalism has been the creator and beneficiary of a thriving middle class. If neocapitalism no longer grows a middle class, as may now be happening in the developed world, what will be the consequences?

September 2011
INTRODUCTION TO
A NEW MARKET
SEGMENTATION:
GLOBANS &
PROXIMALS

We see several powerful indicators of two divergent dynamics that lead to the identification of an important market segmentation framework. In this case, trend and countertrend translate into market segment. We call these new market segments globans (the increasing number of persons educated and employed outside their country of birth, and those who travel and live abroad on a much more frequent basis) and proximals (the population segment defined by their comfort with – and desire for – that which is nearby, local, familiar and traditional). What we may see, for example, are individuals who are technological and geopolitical globans but sociocultural proximals. The combinations are limitless, especially if we further segment these populations by important demographic criteria. As a result, we should conceive of this segmentation not as a linear or 2-dimensional framework, but as a multi-dimensional framework.

December 2011
THE ERA OF
INDIG'NATIONS'

Protest, civil unrest and other conflicts have been a reality of the world since the beginning of human civilization. However, what we see today is the profound genesis of indignation on a truly global scale in a manner like nothing seen before. Taken in a vacuum, the Arab Spring may look like regional fervor. Taken in a vacuum, European and American protests may appear to be reactions to cyclical economic pressures. Taken in a vacuum, Chinese unrest may seem like the logical consequence of exponential growth and prosperity subject to the constraints of iron-fisted government. But taken as a composite whole, it becomes clear that all of the above examples – along with indignation across much of the rest of the world – are interconnected.

December 2011
MIND OVER MATTER –
ADVANCEMENTS IN
AUGMENTED REALITY

Recently, considerable evolutionary – and in some cases, revolutionary – progress has been made in the study, development and engineering of augmented reality (AR) applications. AR, while sometimes involving virtual platforms, is very different from the concept of virtual reality (VR). AR is the process through which the elements of a real-world environment are literally augmented by technology-enhanced sensory input, translation of electromagnetic signals in the brain, GPS data, interactive apps, the “Internet of Things” and smart, adaptive physical spaces. As a result, technology completely enhances someone's current interaction with the real world. AR-related smartphone apps will continue to proliferate – particularly among CPG marketers and retailers. Some of these will be considerably more utilitarian, while others more gimmicky. In a crowded marketplace, app development is only the tip of the iceberg as far as where companies will make truly sustainable AR inroads.

December 2011
3D PRINTING

For almost two decades, we have been discussing the prospect of nanomanufacturing and stereolithography, including its application to 3D printing. Now, new advancements are increasingly pushing 3D printing into the mainstream, and are being applied to a greater variety of diverse product groups. 3D printing has been opened up to a broader market, and



an influx of startups have begun producing reasonably-priced, open-source, build-it-yourself machines. 3D printing will inevitably lead to commoditization in the marketplace, the democratization of design and innovation, the creation of new materials, bioprinting and a rapidly changing health landscape, tremendous revolutions in manufacturing and the process of invention, advancements in construction and transportation, new jobs and forms of labor, a completely reconceived retail landscape, and challenges to our concept of ownership, copyrighting and trademarking.



2010

March 2010 **EFFRESHENCY**

In the context of today's rapid change, organizations around the world are faced with a daunting set of challenges. Traditional thinking is no longer optimizing results, and an entirely new model is emerging – one that we call effreshency. Effreshency refers to the implementation of new and “fresh” strategies that improve upon and revolutionize traditional thinking about six distinct areas of organizational performance that are often viewed separately. Effreshency breaks tradition in all of these six areas simultaneously, and moving forward it will increasingly be the recipe for a sustainable, profitable and competitive organization. The equation for this new model can be expressed as follows: Efficient + Effective + Innovative + Adaptable + Inclusive + Accountable = Effreshent

March 2010 **SOCIAL CONTAGION:** **THE “NETWORK” EFFECT**

A wealth of emerging data signals a profound shift in our understanding of “contagion.” Traditionally, there are two different paradigms of contagion – one biological and one social; one involuntary and the other voluntary. We now see an emerging hybrid of these two paradigms – an involuntary social contagion developing among people whose interpersonal, psychological and attitudinal characteristics are being passed virally along to others with little or no conscious awareness that it is even happening. Perhaps most profound is the reality that this social contagion will only increase as social networking and personalized mobile technology continue to become more ubiquitous.

March 2010 **FROM BIG BROTHER** **TO BIG SYSTER**

The Internet was always about connecting people. But increasingly it is about connecting things. Systems, networks, structures, electronic devices and virtual entities are now connecting wirelessly, without human inclusion. Humans were typically central to the equation, serving, in large part, as intermediaries between various data systems. But control is shifting, from the hands of humans into the hands of systems – and the many networks of systems these systems control. Up until recently, humans and systems coexisted, mutually supervising and monitoring each other (Big Brother). But with Big Syster, people are removed from the equation altogether. Self-contained data systems will increasingly pool their resources and capabilities to create new, more complex and fully independent meta-systems which will offer more functionality, operability and computing power.

June 2010 **PRETAILING**

An extraordinary revolution is taking place on the front end of retailing. Not only are traditional advertising messages being massively moved to alternative media like outside-the-house video screens and the Internet, but communities of strangers are transacting with each other. The setting up of a buy and sell situation has gotten farther away from the traditional marketing and sales channels, spurring wholly new messaging and businesses. All of this new technology will transform the retail experience into an immediacy, a personalization and a transaction far from the traditional purchase experience.



September 2010
THE 4TH WORLD

The 20th Century framework of global economic development may no longer be accurate in capturing the true state of global markets. Long-accepted delineations between Developed and Developing or Less Developed (3rd) World markets are being challenged in the face of rapid geopolitical change. What we see emerging now is an entirely new way of looking at the world. This new world consists of several important nations moving up the economic ladder very rapidly, and calls into the question the continuing validity of a 3rd World classification. The categorization of BRIC countries is also in flux. This is the emergence of a 4th World – the combination of developed and developing markets into a more structurally flexible and adaptive model.

September 2010
THE “BRAINS” RACE

Global supremacy among nations has long been determined by several factors – including military might, geopolitical strength, capitalization of natural resources, and international commerce. However, what we now see emerging from both the developed and developing worlds alike is a drive to global supremacy through renewed investment in education, innovation and intellectual capital. Eastern policy makers have identified the need to highlight education in order to remain sustainably competitive. China, India, South Korea and Singapore are all spearheading this movement toward educational excellence and endemic innovation. Those nations are looking to tip the balance, after a long period of Western educational dominance. U.S. businesses may have to re-examine how they conceive of “innovation,” and how they source skilled labor. All global businesses are going to have to consider making a serious and well-conceived investment in education if they want to achieve sustainable success.

September 2010
PRIFECTA

Networks are becoming more intricate and pervasive, and systems more interconnected and embedded. Computer processors and smart technology are becoming fully integrated into day-to-day life. Smartphone technology is advancing rapidly, alongside RFID technology, geographical information systems (GIS) and global positioning systems (GPS). As the technology becomes more affordable, it is being used in new applications and areas of innovation. This “prifecta” of RFIDs, smartphones and geographic positioning is being developed arm-in-arm with the imagination of businesses and governments, which are creating new ways to use these tiny electronic sensors to monitor and track both consumer behavior as well as their own supply chains and product inventory.

December 2010
TOOLKIT FOR THE FUTURE

The forces of change, coupled with the compression of time between periods of change, are necessitating the development of an entirely new skill set that is unlike anything seen before. A new “toolkit” for the future includes competencies driven largely by technological and social change, and will be equally important to individuals, employers and policy makers alike.

