

# FUTURE BITES

9 Emerging & Critical Trends  
for 2017 and Beyond

# FB



# Emergence of a Workreation Future

What may be looming is an era of technological unemployment, in which computer scientists and software engineers essentially invent us out of work, and the total number of jobs declines steadily and permanently.



Artificial intelligence (AI), robotics and smart systems will disintermediate an increasing number of global human workers in the future—otherwise known as cutting out the middle men. A McKinsey study suggests that the “automation bomb” could destroy 45% of work activities currently performed in the US, including 59% of jobs in manufacturing and 53% in retailing. White-collar workers are also at risk, as 66% of jobs in finance and insurance could be lost.

The widespread disappearance of work would usher in a profound social transformation and create a new normal, where the idea that work is central to life would fade for much of society. Theorists called “post-workists” welcome the end of labor. They argue that Americans work so hard because their culture has conditioned them to feel guilty when they’re not being productive, and that this guilt will fade as work ceases to be the norm. But how realistic is this portrait of a future quasi-utopian post-work society? It is likely unrealistic in the short term, but certainly feasible in the longer-term. We may already be headed towards a **workreation** future: where jobs consist of more creative endeavors and where creation itself (rather than material compensation) is what compels us to work. We already see some companies and even countries experimenting with cutting back the actual hours that people need to work. And, there are other important emerging innovations toward a “post-work” future, as well. What if we had greater autonomy over how we chose work? We could perform new tasks that might not resemble traditional labor. Instead of doing one job, we could hold several diversified paying jobs.

Humans may, indeed, need purpose in their lives—but purpose does not necessarily equate to “jobs.” And, we are already pursuing other means (such as driverless cars) to free up people’s time so they could, in theory, use their time more constructively or creatively. The trajectory of this will inevitably be determined by our ability to engineer, and then implement, major adaptations on a societal scale. And we are already starting to do it, whether we realize it or not.



# Rise of the Moonshot Economy

More businesses and billionaires may be given the green light by leadership, regulators, the public and investors to make bets on daring initiatives that could provide enormous windfalls.



Space elevators. The Hyperloop. Asteroid mining. Space tourism. Autonomous vehicle networks. DNA and quartz data storage. Mind-reading technology. 4D printing. Banking for the millions of unbanked. Feeding the planet. Clean water for all. Housing for millions of refugees. These all seemed, until recently, inconceivable. Now, they are all theoretically possible. The saying “If you can dream it, you can do it” has never been truer. According to DARPA, the world is going to be a very different place in 2045. It’s likely that robots and artificial intelligence (AI) will transform many industries, drone aircraft will continue their leap from the military to the civilian market, and self-driving cars will become pervasive. **Moonshot** projects, such as these, will signal a seismic shift from the innovation we see today to an entirely new era characterized by uninhibited *imagination* across all industries. The emerging 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 among the most important competitive differentiators in the future, and it will define leadership in the private, non-profit and public sectors.



# Increasing Focus on F.I.T.S.: Fear Of Invisible Threats Syndrome

While there is rampant and broad-scale growth of technology initiatives everywhere around the world, this is leading to the widespread fear of invisible—and largely unknown—threats.



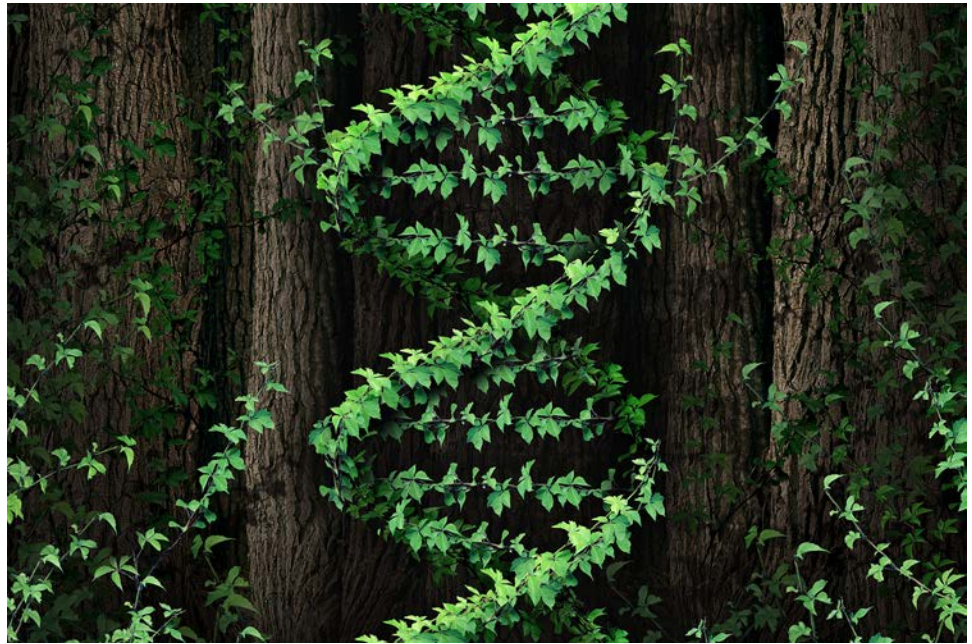
Historically, populations have always feared invisible threats. But the invisibility stakes have now been raised. For many in the world, especially in the wake of recent events, the invisible threats have multiplied and are continuing to do so. Many otherwise “safe” people in the world have become gripped in a spiral of heightened attention to attacks of so many kinds. It’s possible that younger generations will be somewhat immune to the cumulative nature of invisible threats, as they have grown up with the technologies and economies that have led to destabilizations and invasions of privacy. But they, too, live amid a rising tide of invisible threats. 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.





# Recirculative Design

A new framework for how products are designed, built, sold, consumed and disposed of.



The “circular economy” has become an important part of the business and industry lexicon. This concept is increasingly relevant as innovative, alternative methods of manufacturing and production become a necessity in a world of rapidly diminishing resources and wasteful consumption habits. Conserving natural resources while still spurring economic, environmental and social prosperity presents a major challenge. **Recirculative Design** is our term for a new paradigm that incorporates regenerative and nature-inspired design + environmental circularity + zero waste & toxicity + rapid technological and scientific innovation (e.g., bioengineering, synthetic biology, 3D printing). 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 current finite resources and create its own sources of energy and materials.



## Growth of 'Imagistructures'

**Imagistructures—the reimagining of the way we design, develop, maintain and interact with our infrastructure—will provide truly imaginative solutions to global challenges.**



The marriage of data, new materials, new sensors and interconnectivity with biology, astronomy and AI will profoundly change what and how we can imagine our future built environments. Whether related to retailing, transportation, living, working, or entertaining, we can potentially move past the era where so many areas of the world began to look alike to a world of enormous diversity of innovation, creativity and imagination. 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, morph to suit individual company and employee needs, assemble and reassemble for migrant populations and refugees as well as for pop-up retail, and grow materials on demand where needed. Equipment like scaffolds and cranes may one day be a thing of the past, as organism-like buildings realize their own desired shape and properties. In thinking about the life-span of a building or any part of infrastructure, designers and producers may be literally thinking about “a life span.”



# Gerontopoly

Little attention has been paid to the cumulative economy of aging. But that must change.



Gerontology is the study of aging and the elderly. Yet there is no term to describe the body of business, research and built and engineered initiatives emerging for and around the aging peoples of the world. Therefore, we have proposed the term **gerontopoly** be used to define this burgeoning industry and economy. Demographics will ensure that gerontopoly becomes a major growth area in the coming years. By 2050, the portion of the entire world's population over 60 will approximate 20%. The medical and wellness businesses will balloon with opportunity, as will financial services. Retail and entertainment will also see rapid and 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. And the rise of seniors in urban areas will also spur technologies designed to make cities more intelligent, especially regarding navigation and connectivity.



# Augmented Humanity

**The near future of not only wearable technology—but embeddable, implantable and ingestible technology—will usher in an era of augmented humanity (AH).**



Transhumanism is the school of thought that humanity is destined to evolve beyond its current physical and mental limitations, primarily through the means of advanced technology. In a world increasingly characterized by advanced artificial intelligence (AI), what will the role/s of humans become? It is entirely possible that rather than being pushed aside by AI, humanity will advance alongside AI to become part of an entirely new civilization. On the path toward a transhumanist-like future, humans will have to augment their natural abilities (or compensate for their shortcomings) to become more than they are today—more from a physical perspective; more from a sensory perspective; more from a cognitive perspective. In some instances, wearable applications will make us higher functioning—more like “super” humans. In other cases, applications will make up for deficits that previously impeded people from fully experiencing the world. And, wearables are just the beginning. Embeddables, implantables and ingestibles will increasingly be the future.





# Symbots

Advanced robotics have left many concerned about a quickly approaching era of technological unemployment. But the impact of advanced robotics is far more nuanced. The future is not about humans versus robots, but humans with robots.



**Symbots** refer 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. Now, a lighter-weight, portable plug-and-play generation of robots is collaborating with human workers. Robots (designed for implementation and reiteration) do the tasks; humans do the thinking (and the tasks that require cognition and more complex thinking). Collaborative robots—dubbed cobots—are so new they account for just a fraction of global industrial robot sales. But these flexible robots have the potential to revolutionize production, in particular for smaller companies that account for 70% of global manufacturing. While most current examples of symbots occur in industrial/manufacturing settings—which is still the main sector for robot investment—they are moving out into a far wider range of roles and industries.



## Newrative

**Our notions of storytelling and narrative, aided by the rapid proliferation of new media platforms and technologies, are now making a quantum leap forward.**



Virtual reality (VR), perhaps more than any other emerging medium, is at the heart of evolved storytelling. Narrative expressed through VR has the chance to completely revolutionize everything around us—by not only simulating a multi-sensory and immersive sense of place, but, in some cases, stimulating real empathy and cross-cultural understanding. Imagine learning about another culture or ancient civilization by being virtually transported there. Imagine being virtually immersed in a news story, versus merely reading about it. Imagine being inside a movie, versus merely “watching” it. Imagine experiencing a fashion brand by virtually becoming part of their runway show. Moving beyond the realm of VR, the idea of “celebrity” is changing dramatically for younger consumers. Cybrids (our term for Gen Z)—and, to a lesser extent, Millennials—are no longer influenced by the same types of celebrities as previous generations were. Alongside some traditional entertainers and athletes, YouTube stars, online streaming entertainers and e-sports competitors (professional video gamers—what we call e-thletes) now reign supreme. As a result, the nature of narrative and messaging via “celebrities” is changing. And, it has also become more democratized—many popular celebrities today are more accessible to their fans than ever before.

