

Key Takeaways

🕒 Welcome to the Synthetic Decade.

From digital twins to engineered DNA to plant-based pork sausages, a deep push to develop synthetic versions of life is already underway. We will look back on the 2020s as an era that brought us synthetic media, such as A.I.-generated characters whose storylines we follow on social media and humanlike virtual assistants who make our appointments and screen our calls. Soon, we will produce “designer” molecules in a range of host cells on demand and at scale, which will lead to transformational improvements in vaccine production, tissue production and medical treatments. Scientists will start to build entire human chromosomes, and they will design programmable proteins. Foods made from synthetic techniques rather than artificial ingredients will make their way to the mainstream, and you’ll have a wide array of choices: humanely engineered foie gras, flora-derived ice cream and molecular whiskey made in a lab. Every industry will be impacted as our synthetic decade brings new business opportunities and strategic risks. Companies will need to ask challenging ethical questions and examine the security risks for synthetic material in order to earn public acceptance, government approvals and commercial appeal.

🕒 You’ll soon have augmented hearing and sight.

While you shouldn’t expect to see everyone wearing smart glasses by this time next year, you will certainly start to notice some important developments throughout 2020, beginning with audio augmented reality (or AAR). Think of it as augmented reality for audio. Smart earbuds and glasses will digitally overlay audio (like directions, notifications, and verbal descriptions of what — or who — you’re looking at) without others hearing and while you continue to hear what’s going on around you. Not only will AAR help runners stay safe, it offers a sophisticated alternative to traditional hearing aids. Smart glasses won’t look like the minimalistic Google Glass headband, but rather a stylish pair of frames you’d find at your local optometrist’s office. Google, Amazon, Apple, Microsoft and Facebook all have connected systems on their product roadmaps. The connected glasses and AAR ecosystem offer tremendous new business opportunities—and could signal disruption to longtime market leaders in frames, prescription lenses, hearing aids and headphones.

🕒 A.I.-as-a-Service and Data-as-a-Service will reshape business.

The future of digital transformation is rooted in two key areas: A.I.-as-a-Service and Data-as-a-Service. Microsoft, IBM, Google, Amazon, Facebook and Apple

are all developing new services and tools ranging from robotic process automation to offering GPUs (graphics processing unit) in the cloud. Amazon’s upcoming project, AWS For Everyone—a low-code/no-code platform built to enable anyone to create business applications using their company data—will be a huge differentiator when it launches.

🕒 China has created a new world order.

The growth of China’s economy might be slowing, but it would be a mistake to assume that the People’s Republic of China has lost its influence. In the past two decades, China overtook the U.S. as the world’s dominant exporter on every continent with the exception of North America. Its imports matter, too: This year China should surpass the U.S. and become the world’s largest movie market, with a projected \$10 billion in revenue. China has a rapidly-expanding middle class, an educated and trained workforce and a government that executes on long-term plans. China will continue to assert prolific dominance in 2020 across multiple areas: diplomacy throughout Southeast Asia, Africa, Latin and South America and Europe; the development of critical digital infrastructure; artificial intelligence; data collection and scoring; bioengineering and space.

🕒 Home and office automation is nearing the mainstream.

An Alexa in every pot and a self-driving car in every garage? Nearly 100 years ago Herbert Hoover promised Americans they would prosper under his presidency: a chicken in every pot, and a car in every garage. Today, A.I.-powered digital assistants, home security systems and voice-controlled microwaves are being manufactured—and priced—for the masses. Robots used to be the stuff of science fiction, but this year major appliance manufacturers, component makers, and of course, the big tech companies will make compelling arguments for why our homes and offices should be outfitted with sensors, cameras and microphones. Next-generation network infrastructure should speed adoption. The global market could reach \$214 billion by 2025. Which company’s operating system controls all those devices, and what happens to the data being collected, will spark public debate.

🕒 Everyone alive today is being scored.

In order for our automated systems to work, they need both our data and a framework for making decisions. We’re shedding data just by virtue of being alive. From our social media posts, to our unique biology (posture, bone and

capillary structures, vocal pitch and cadence), to our credit card debt, to our travel habits, thousands of data points are analyzed to score us. Automated systems use our scores to make decisions for or about us, whether it's what price to show us on e-commerce sites or if we might pose a security risk at a football game. We anticipate that in the coming year, regulators will take a deeper interest in scoring.

🕒 We've traded FOMO for abject fear.

In the 2010s Facebook, Instagram, Snapchat, Reddit, Foursquare and Twitter caused a "fear of missing out." Those very same networks (save for the now-defunct mobile social app Foursquare) are being used for intentional—and sometimes unwitting—scaremongering. On Facebook, Baltimore Mayor Bernard "Jack" Young helped propagate a wild—and totally false—story on Facebook about a white van abducting girls for human trafficking and for selling body parts. Numerous times, President Donald Trump has used Twitter to stoke fear, telling the public about armed "large [sic] Caravans" that were "invading" America. On Twitter, he has publicly threatened the leaders of other countries:

"I will totally destroy and obliterate the [sic] Economy of Turkey" – October 7, 2019)

"North Korean Leader Kim Jong Un just stated that the "Nuclear Button is on his desk at all times." Will someone from his depleted and food starved regime please inform him that I too have a Nuclear Button, but it is a much bigger & more powerful one than his, and my Button works!" – January 2, 2018

"To Iranian President Rouhani: NEVER, EVER THREATEN THE UNITED STATES AGAIN OR YOU WILL SUFFER CONSEQUENCES THE LIKES OF WHICH FEW THROUGHOUT HISTORY HAVE EVER SUFFERED BEFORE. WE ARE NO LONGER A COUNTRY THAT WILL STAND FOR YOUR DEMENTED WORDS OF VIOLENCE & DEATH. BE CAUTIOUS!" – July 22, 2018

Social media posts like these are often repeated at rallies and protests, which only serve to amplify our fear. The Anti-Defamation League discovered a 226% increase in acts of vandalism and hate crimes in the counties hosting Trump rallies. We're continually told that we need protection: from unsafe countries, people and even our neighbors. Fear is good for business. Amazon bought smart doorbell company Ring for \$1 billion, and it now has lucrative partnerships with more than 400 U.S. police departments to share recognition tech and surveillance video from users' homes.

🕒 It's the end of forgetting.

After a decade of posting photos, videos and written messages on social media, it's now clear that our recent histories will persist far into the future. It isn't possible to truly delete or erase our pasts. A centerpiece of the European Union's landmark internet laws, the "right to be forgotten," emerged as a standard intended to force search engines to delete links to personal information if it wasn't in the public interest. But in 2019, the European Court of Justice ruled in Google's favor, making it much harder for people to request that negative, private or misleading information about them is removed from internet searches. A Google search team member put it more bluntly: "We're not a truth engine."

🕒 Our new trust economy is being formed.

We will soon see a host of new tools built to engender and ensure—but also manipulate—our trust. In the wake of deepfake videos and other manipulated content, a new ecosystem devoted to trust is in the process of being formed. There's a lot at stake: After hearing an A.I. fake his CEO's voice on the phone, a gullible employee transferred \$243,000 to a scammer. In the coming year, sentinel surveillance systems will algorithmically detect manipulated content—for a fee. Meanwhile, governments and interest groups around the world will try to shape the future development of A.I. and blockchain technology, proposing legislation and "bill of rights" manifestos.