

FTI's 13th Annual Tech Trends Report: What we found interesting, insightful and surprising

Everyone alive today is being scored. (And we're not just talking about China.)

Our data are being mined, refined and productized to sort, tag and catalogue us. Why? To make it easier for systems to make decisions for, on behalf of and about us. We're living in a new age of algorithmic determinism. We increasingly rely on A.I. systems to make choices, even if those systems score us without being able to understand our nuanced histories, special circumstances and the unique characteristics of our humanity. Hundreds of companies now score customers. Collectively, these companies are secretly mining thousands of your unique data points, including how many times you open apps on your phone, which devices you use, where you spend time, what kinds of food you order for delivery and insights from messages you've sent to Uber drivers and Airbnb hosts.

Get ready to meet your digital twin.

There are different categories of deepfakes, which include malicious, non-malicious and benign. Last year's malicious deepfakes included Jon Snow's public apology for the ending of Game of Thrones and Barack Obama calling Donald Trump a "complete dipshit." We also watched Rasputin offering a convincing rendition of Beyoncé's Halo. That latter, non-malicious category is better known as synthetic media, and you're about to see a lot of it. We uncovered 13 trends related to synthetic media, including a worrying new trend in using synthetic media to get around a country's copyright laws.

Quantum and edge jumped from our weak signals list to our trends list.

For the first time, quantum computing and edge computing made our main trends list, and that was because of some important new research developments in the past 18 months. We are at the beginning of a new era of computing, one that will bring powerful new machines and will eventually enable more processing at or near the source of our data.

Soon every company will have access to robots.

Last year, Boston Dynamics started selling its quadrupedal robot named Spot for commercial, non-military purposes. Meanwhile, Amazon's AWS RoboMaker was created to help companies test and deploy intelligent robotics applications at scale using the cloud. Cloud robotics and automation is a field in which physical robots share data and code and perform computations remotely via networks, rather than within their containers alone. Soon, businesses will be able to take advantage of cloud-based robotics for a variety of uses, including strategic warehouse selection in anticipation of seasonal retail spikes, security in large buildings, and factory automation. It could also be a catalyst for shifting manufacturing away from countries where human labor costs are cheap.

Big tech has its sights set on farming.

You read that right. Some of the world's biggest tech companies—Amazon, Microsoft, Walmart—are getting into agriculture. (We think of Walmart as a tech company as well as a retailer.) Microsoft launched a multi-year plan to modernize agriculture with data analytics, and is piloting a program already on two U.S. farms in which Microsoft has invested. Walmart is opening its own meatpacking plants and dairy processing facilities in an effort to drive down costs. Meanwhile Amazon's Jeff Bezos has invested in vertical farming.

Our homes are producing digital emissions.

The average person isn't aware of how much data they're shedding. Collectively, our homes are starting to produce digital emissions, which includes all the data not actively used and processed by devices. Bits of information in that network include things like your body temperature as you watch TV, the ambient hums and creaks that your home makes at night, and the communication pings your devices make. Digital emissions aren't harmful to the environment, but they're an untapped resource to be mined and analyzed—with transparency and permissions, of course.

Synthetic medicines, microbes and food will solve some of our problems but freak a lot of people out.

Synthetic biology involves creating an organism that doesn't already exist in nature, and someday it will help repair defective genes, rid the planet of toxins, destroy cancer cells, and help mass-produce proteins for our consumption. It could be a key to a healthier planet. Imagine a future in which you no longer take medication—instead, your cells are simply reprogrammed to fight off whatever ails you. Or imagine biting into a thick, juicy Tomahawk steak, grilled to perfection—one that's vegan-friendly, because it is made from plant-based proteins. There's so much activity in this field and so many new trends that we've dedicated an entire section to synthetic biology.

A new mil-tech industrial complex is forming.

Our future wars will be fought in code, using data and algorithms as powerful weapons. The current global order is being shaped by artificial intelligence, and the same countries leading the world in A.I. research—the U.S., China, Israel, France, Russia, the U.K., and South Korea—are also developing weapons systems that include at least some autonomous functionality. Some of the biggest A.I. companies in the U.S. started partnering with the military to advance research, find efficiencies and develop new technological systems that can be deployed under a variety of circumstances.

It's going to be a big year for off-planet exploration.

This is an important year for space initiatives. Some of the planned missions involve humans, others are for robots only, and a handful will bring earthly agriculture into space. We're tracking trends in microsatellite launches, internet from space, space-based quantum internets, space junk and a new "made in space" initiative. Some estimates value the space industry at \$330 billion, and that could double by 2026.