14th Annual Edition

2021 Tech Trends Report

Strategic trends that will influence business, government, education, media and society in the coming year.
New Realities, Synthetic Media, News & Information

Using Synthetic Media to Get Around Copyright Laws
Synthetic Media Marketplaces
Truth Decay in an Era of Synthetic Media
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The 1920s began in chaos. Cataclysmic disruption resulting from the first world war and the Spanish flu shuttered businesses and provoked xenophobia. Technological marvels like the radio, refrigerator, vacuum cleaner, moving assembly line and electronic power transmission generated new growth, even as the wealth gap widened. More than two-thirds of Americans survived on wages too low to sustain everyday living. The pace of scientific innovation—the discovery of insulin, the first modern antibiotics, and insights into theoretical physics and the structure of atoms—forced people to reconsider their cherished beliefs.

The sheer scale of change, and the great uncertainty that came with it, produced two factions: those who wanted to reverse time and return the world to normal, and those who embraced the chaos, faced forward, and got busy building the future.

It’s difficult not to see striking parallels to our modern world. A tumultuous U.S. election, extreme weather events and Covid-19 continue to test our resolve and our resilience. Exponential technologies—artificial intelligence, synthetic biology, exascale computing, autonomous robots, and off-planet missions to space—are challenging our assumptions about human potential. Under lockdown, we’ve learned how to work from our kitchen tables, lead from our spare rooms, and support each other from afar. But this disruption has only just begun.

With the benefit of both hindsight and strategic foresight, we can choose a path of reinvention. Our 2021 Tech Trends Report is designed to help you confront deep uncertainty, adapt and thrive. For this year’s edition, the magnitude of new signals required us to create 12 separate volumes, and each report focuses on a cluster of related trends. In total, we’ve analyzed nearly 500 technology and science trends across multiple industry sectors. In each volume, we discuss the disruptive forces, opportunities and strategies that will drive your organization in the near future.

Now, more than ever, your organization should examine the potential near and long-term impact of tech trends. You must factor the trends in this report into your strategic thinking for the coming year, and adjust your planning, operations and business models accordingly. But we hope you will make time for creative exploration. From chaos, a new world will come.

Amy Webb
Founder
The Future Today Institute
Macro Forces and Emerging Trends

For nearly two decades, the Future Today Institute has meticulously re-searched macro forces of change and the emerging trends that result. Our focus: understanding how these forces and trends will shape our futures. Our 14th annual Tech Trends Report identifies new opportunities for growth and potential collaborations in and adjacent to your business. We also highlight emerging or atypical threats across most industries, including all levels of government. For those in creative fields, you will find a wealth of new ideas that will spark your imagination.

Our framework organizes nearly 500 trends into 12 clear categories. Within those categories are specific use cases and recommendations for key roles in many organizations: strategy, innovation, R&D, and risk.

Each trend offers six important insights.

1. Years on the List
We track longitudinal tech and science trends. This measurement indicates how long we have followed the trend and its progression.

2. Key Insight
Concise description of this trend that can be easily understood and repeated to others.

3. Examples
Real-world use cases, some of which should be familiar to you.

4. Disruptive Impact
The implications of this trend on your business, government, or society.

5. Emerging Players
Individuals, research teams, startups, and other organizations emerging in this space.

6. Action Scale
FTI’s analysis of what action your organization should take. Fields include:

   - Watch Closely
     Mounting evidence and data, but more maturity is needed. Use it to inform your vision, planning, and research.

   - Informs Strategy
     Strong evidence and data. Longer-term uncertainties remain. Use it to inform your strategic planning.

   - Act Now
     Ample evidence and data. This trend is already mature and requires action.
**New Realities, Synthetic Media, News & Information**

**Macro Forces and Emerging Trends**

**Scenarios Describe Plausible Outcomes**

You will find scenarios imagining future worlds as trends evolve and converge. Scenarios offer a fresh perspective on trends and often challenge your deeply held beliefs. They prompt you to consider high-impact, high-uncertainty situations using signals available today.

1. **Headline**
   A short description offering you a glimpse into future changes.

2. **Temporal and Emotive Tags**
   A label explaining both when in the future this scenario is set and whether it is optimistic, neutral, pessimistic, or catastrophic.

3. **Narrative**
   The descriptive elements of our imagined world, including the developments leading us to this point in our future history.

Scenario sources: The Future Today Institute uses a wide array of qualitative and quantitative data to create our scenarios. Some of our typical sources include patent filings, academic preprint servers, archival research, policy briefings, conference papers, data sets, structured interviews with experts, conversations with kids, critical design, and speculative fiction.
As current forms of digitally mediated reality evolve and new forms emerge, they are poised to merge along a virtuality-reality spectrum.

Diminished reality, or DR, is a form of augmented reality focused on suppressing existing elements of our physical environment, rather than introducing new digital elements to it. DR represents a unique and extensive range of AR applications.

The shift from hands-on to heads-up is upon us, marked by the gradual transition from smartphones to smart eyewear.

With advancements in spatial internet, and the impending spread of 5G and smart eyewear, the prospect of a metaverse—a persistent, shared, digitally mediated realm that layers into the physical world—is coming into focus.

Smart eyewear will rely in part on advanced voice technology, so expect investment and advancements in natural language processing and generation, and emotive recognition.

The combined augmented and virtual reality market is estimated to be valued in the hundreds of billions of dollars within the next decade.

Synthetic media will become an integral part of our future XR experiences.

In the wrong hands, synthetic media can be a powerful and dangerous tool in spreading misinformation and disinformation.

As margins continue to shrink in news media, industry consolidation continues, at the expense of journalistic integrity.

News outlets are encountering competition well beyond their industry as the subscription economy matures and an ever-growing list of companies vie for the attention, time, and money of an overstimulated audience.

Synthetic media will become an integral part of our future XR experiences.
I do think that a significant portion of the population of developed countries, and eventually all countries, will have AR experiences every day, almost like eating three meals a day. It will become that much a part of you.

— Apple CEO Tim Cook