Monthly Trends Update

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Future Today Institute

# Five Important Trends For February 2017

This month we highlight the continued fallout of fake news and algorithms, the rise of conversational interfaces, expanded autonomy. Using the Institute's forecasting tools and assessments,  we've spotted critical patterns and trends you should be aware of.

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**1. Fake Information**

Right now, we're concerned with the future of fake news—whether it's intentional, or accidential, or geopolitical. Soon, we will be confronted with an information ecosystem that will be difficult to trust. It's not that difficult to determine if a byline has been faked, or if statistics have been misrepresented—but what happens when we can no longer tell if a data set has been tampered with? In the near and farther-future, AI systems will rely on our trust. If we no longer trust the outcome, decades of research and technological advancement will be for naught. Leaders in every sector—government, business, the nonprofit world and so on—must have confidence in the data and algorithms used.

Building trust and accountability is a matter of showing the work performed. This is a complicated process, as corporations, government offices, law enforcement agencies and other organizations must keep data private. Committing to transparency in method would create trust without necessarily divulging any personal data used.

*Recommended further reading:*

- Moscow Thanks You for Sharing Its Cute Cat Pics: http://www.motherjones.com/media/2017/02/fake-news-bots-trump-twitter-google-facebook-technology

- Why News Organizations Should Buy Twitter: http://niemanreports.org/articles/why-news-organizations-should-buy-twitter/

- Has Technology Changed The Way We Trust: https://www.fastcompany.com/3068057/creative-conversations/how-has-technology-changed-the-way-we-trust

**2. Conversational Interfaces**

In the late summer of 2016, CNN deployed a conversational news bot on Facebook Messenger that you could talk to about the Olympics, while BuzzFeed released a bot to help with their reporting on the Republican and Democratic National Conventions. Whether it's your hometown newspaper's chatbot, Google in your living room, IBM's Havyn in your office or a device like Alexa, you and your devices will have conversations about the news.

One observation we made at this year's Consumer Electronic Show was that Alexa in particular has permeated hundreds of other connected devices, which include homes and cars. Just as there are numerous opportunities and challenges with our existing Internet of Things, we'll need to start thinking seriously about the advent of an Internet of Conversations. The next layer of the internet is being built right now. Think of the year 2017 as you do 1987, which was the year that the protocols and rules of our modern internet were proposed. You already know how radically our world has changed in just 30 years. Now imagine where we'll be three decades in the future.

*Recommended further reading:*

- Why the Human Voice Is the Year's Most Important Technology: http://sloanreview.mit.edu/article/why-the-human-voice-is-the-years-most-important-technology
- Hidden Voice Commands: http://www.hiddenvoicecommands.com/
- Amazon Lex: The smart person's guide: http://www.techrepublic.com/article/amazon-lex-the-smart-persons-guide
- Tony Stark Has Jarvis. And Now IBM Has Havyn: http://www.wired.com/2017/02/ibm-havyn-cybersecurity

### 3. Expanded Autonomy

When we think of “autonomy,” we tend to use only AI as our reference point. Part of what will make full autonomy a reality—not just in cars, but in factories and places where humans still process transactions by hand—is the rise of collaborative robots. Researchers at Carnegie Mellon University have built collaborative robots that are designed to work together. In their recent work, a robot named Baxter is stationed at a table working on a project. Once completed, another robot on the team—CoBot—picks up the item and hands it to a human. Teams of collaborative robots can communicate to each other, on their own, about when to wait, when to move, to carry out an activity, or even to ask what to do.

Use your imagination and you can probably see what’s coming next. Collaborative robots will play a key role in automating the tasks performed in warehouses, manufacturing plants, logistics and delivery services—not to mention in conflict zones. But what about places like banks, coffee bars and pizza restaurants? Any repetitive process facilitated by humans can also be completed by machines.

*Recommended further reading:*

- Toyota's Gill Pratt on Self-Driving Cars and the Reality of Full Autonomy: http://spectrum.ieee.stfi.re/cars-that-think/transportation/self-driving/toyota-gill-pratt-on-the-reality-of-full-autonomy/?sf=yxovkng#aa
- Google’s Driverless-Car Czar on Taking the Human Out of the Equation: https://www.bloomberg.com/features/2016-john-krafcik-interview-issue
- Tech Firms Invite Automakers to Take a Back Seat on Self-Driving Cars: https://www.technologyreview.com/s/603329/tech-firms-invite-automakers-to-take-a-back-seat-on-self-driving-cars/
- Ford Robocar to Ford Engineers: Wake Up! http://spectrum.ieee.org/cars-that-think/transportation/self-driving/ford-robocar-to-ford-engineers-wake-up

**4. The Anthropocene**

So far, 2017 has set a record number of weather-related records. Scientists and geologists are in the middle of a heated argument about whether we are living in a new geological epoch, one that we've created ourselves in many ways because of the technologies we've created and use every day. Depending on whose research and definitions you prefer, we are either in the "Holocene" epoch (from the Greek for "totally new), which began 11,700 years ago just after the last ice age—or we are in a new epoch, called the "Anthropocene" (*anthro* for "man," and *cene* for "new"). At the beginning of the Holocene, the global human population was estimated between 1 - 10 million. Today, many smaller American cities boast 1 million citizens. The new geological layers we are creating are riddled with chemicals and industrial waste, everyday garbage, pesticide runoff and more. We've caused our sea levels to rise and our lakes and rivers to dry up. Ecologist Eugene Stoermer coined the term in the 1980s and Nobel laureate Paul Crutzen popularized it in 2000. Suddenly among earth-science researchers, the Anthropocene has found new momentum.

In 2016 alone, scientific journals published more than 200 peer-reviewed articles. Traditionalists argue against using "Anthropocene," suggesting that the debate about climate is relevant, but that geology data is still lacking. They want to investigate when, exactly, humans began leaving a visible mark on the planet. There is no doubt that some of our technological advances have led to increased factory output and, as a result, pollution. The International Union of Geological Sciences convened a special group to study the world on and in which we live—the rock strata, the soil, the atmosphere—and will make a decision about what to call our current geologic time.

Regardless of which term we use going forward, it is difficult to argue against the fact that humans are Earth's first species to wield planet-scale influence. Many of us find a certain comfort in fatalism, so there is a possibility that in accepting this new epoch, we absolve ourselves of blame and accept that our destiny as a species was set in motion nearly 12,000 years ago. There is also an opportunity in acknowledging that humanity has a stake in the ongoing evolution of our planet. There are business opportunities, too. Rather than denying change, companies could start developing innovative new ways for humans to deal with the extreme weather we've been experiencing recently.

*Recommended further reading:*

- Red State America Acts on Climate Change--but Calls It Other Names: https://www.scientificamerican.com/article/red-state-america-acts-on-climate-change-but-calls-it-other-names/
- Trump Finds The Weak Spot In Obama's Protections For Scientists: https://fivethirtyeight.com/features/trump-finds-the-weak-spot-in-obamas-protections-for-scientists/
- How scientists are using virtual reality to show people effects of global warming: http://www.ocregister.com/articles/people-744000-virtual-reality.html
- Gene Catalogues Aim to Help Crops Survive Climate Change: https://www.scientificamerican.com/article/gene-catalogues-aim-to-help-crops-survive-climate-change/
- Trump can save his presidency with a great deal to save the climate: https://www.theguardian.com/environment/climate-consensus-97-per-cent/2017/feb/22/trump-can-

**5. E-Residents**

The United States government is still in transition with an unpredictable president. Meanwhile in the U.K. and parts of Europe, the rise of nationalistic leaders has left many concerned about the fate of the workforce—and the viability of new businesses.

Even before this most recent election in the U.S., the Estonian government began offering an e-residency program, making it easier for entrepreneurs to incorporate and run a business free of the usual legal and tax headaches.

Estonia, which borders Russia to the east, Latvia to the south and sits across the Baltic Sea from Finland, has been operating most of its government services online for the past 15 years, from tax filing to contract signing to filling prescriptions and even voting. With a population of just 1.3 million people, Estonia figured out early on how to operationalize digital tools to service its citizens. Recently, Estonia began offering resident status to entrepreneurs—without adding a requirement that they actually take up residence in the country. As part of this beta program, e-residents pay 100 euro and apply online at e-resident.gov.ee, and then need to travel to a local Estonian embassy for an interview. Once approved, e-residents gain access to a number of services—not to mention an EU company and EU bank accounts. This generates revenue for the Estonian government while reducing costs and paperwork for entrepreneurs around the world.

With the Brexit referendum passed, e-residency could provide a smart solution for U.K.-based entrepreneurs, who will soon find it difficult to work with EU companies and hire EU citizens. The program has become so popular that Estonia is now advising other governments, including Lithuania, the Netherlands, Japan and Singapore, on how to create their own e-residency programs. However, given the strange period of transition we find ourselves in, with old geopolitical foes seeming to ignite new friendships, it would be wise to think through the near-future of cybersecurity in host countries.

*Recommended further reading:*

- Why Estonian E-Residency Is Attracting Attention: http://irishtechnews.ie/why-estonian-e-residency-is-attracting-attention/
- This tiny country is the most technologically advanced in the world: http://www.marketwatch.com/story/this-tiny-country-is-the-most-technologically-advanced-in-the-world-2016-05-05
- Blockchain Startup to Secure 1 Million e-Health Records in Estonia: http://www.coindesk.com/blockchain-startup-aims-to-secure-1-million-estonian-health-records/
- Could e-residency offer a way around Brexit? http://www.dw.com/en/could-e-residency-offer-a-way-around-brexit/a-19570333

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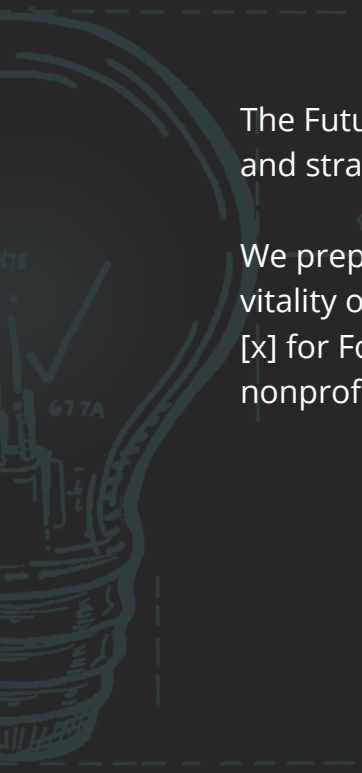

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