

# GLIMPSES OF THE FUTURE

A monthly digest of technologies, developments and trends that may shape our lives. (If you would prefer not to receive these digests, flip back 'NO THANKS' and you will be removed from the list). For daily glimpses follow me on Twitter: @hammondfuturist

## Google's New Translation "Almost As Good As Humans"

Google researchers have invented [a translation system](#) that is significantly more accurate than existing auto-translate systems.

In a competition that pitted the new software against human translators, it came close to matching the fluency of humans for some languages, such as when translating from English to Spanish.



Google has already begun rolling out the new system for translations from Chinese to English (see [examples showing the improvement](#)). The company expects to replace its current translation system altogether.

Making it easier to read Web pages or exchange messages across language barriers could help people around the globe communicate with one another. Google researcher Quoc Le says Google's big translation upgrade could also lead to improved relations between people and machines.

## Aggressive Human Drivers Will "Bully" Driverless Cars

Aggressive drivers are looking forward to sharing the road with autonomous cars as they believe they can cut in front of them easily, research suggests.

Drivers who are more "combative" tend to "see autonomous vehicles as easier agents to deal with on the road" than humans, because they think they will be able to "bully" them, according to a study by the London

## Intel Launches An Industrial Drone

Intel is slapping its name on [an advanced](#) drone designed for commercial and professional uses in North America. The Falcon 8+ is the first Intel-branded commercial drone and it's outfitted for industrial inspection, surveying and mapping.



Intel's expert-level drone builds on the [AscTec Falcon 8 drone](#), a V-form octocopter that boasts high stability, precision GPS and flight control electronics and components that are redundant three times over, as well as laying claim to the best weight-to-payload ratio around (empty weight 1.1 kg, max. payload 0.8 kg). This is basically an industrial drone designed for some of the most intense field applications.

The two companies had already used the Falcon 8 to create a custom drone for Airbus modified with Intel's RealSense cameras. We've also seen Intel make a concerted push into the drone world lately with a [drone specifically for developers](#) and another that makes use of the company's [3D-mapping technology for collision avoidance](#).

## "Big 5" Software Companies Form An AI Ethics Committee

Google, Facebook, Amazon, IBM and Microsoft are joining forces to create a new AI partnership dedicated to advancing public understanding of the sector, as well as coming up with standards for future researchers to abide by.

Going by the unwieldy name of the [Partnership on](#)

School of Economics and Goodyear.

On the other side, “more co-operative road users tend to be less open” to cars that drive themselves, it adds, but will be happy to give way to them.

The study is one of the most comprehensive pieces of research into international social attitudes to [self-driving technology](#); 12,000 drivers in 11 countries were polled and dozens of focus groups were held.

### **New Material Finally Allows E-Ink Displays To Use Colour**

[E-ink displays](#) may be easier on the eyes and less power-hungry than backlit LCDs used in most tablets and phones, but they're still monochrome. However, this could change thanks to [a new type of material](#) developed at Chalmers University of Technology that is flexible, ultrathin and can produce the full color range of an LED-backlit LCD, but requires ten times less energy than a Kindle's e-ink display.



Like a conventional e-reader screen, the material functions as a reflective display, so instead of being backlit like an LCD, the surface reflects the external light that hits it. Electrically conductive polymers covering the surface change how that light is absorbed and reflected, which allows it to recreate high resolution images and text. The end result is a material that's less than one micron thick, flexible and extremely energy efficient.

### **Macho Cultural Attitudes Prevent Indian Women Having Smartphones**

Male attitudes to women and their rights (or lack of them) are [leaving Indian women without access to smartphones](#).

[Artificial Intelligence to Benefit People and Society](#), the alliance isn't a lobbying organisation (at least, it says it “does not intend” to lobby government bodies). Instead, it says it will “conduct research, recommend best practices, and publish research under an open license in areas such as ethics, fairness and inclusivity; transparency, privacy, and interoperability; collaboration between people and AI systems; and the trustworthiness, reliability and robustness of the technology”.

There will be equal representation between corporate and non-corporate members on the board of the partnership, and it hopes to invite “academics, non-profits and specialists in policy and ethics” to join.

### **A Trip To Mars Could Leave You With Dementia**

If [getting to Mars](#) isn't hard enough, scientists at the UC Irvine say that cosmic radiation could cause astronauts on deep space missions to [develop symptoms of dementia](#).

Rodent tests indicate that exposure to high-energy particles produce cases of "space brain" marked by long-term neurological damage, cognitive impairment, and diminished judgment.



Radiation has long been recognized as a constant and very real threat to space travelers, which is the reason why crews on the [International Space Station \(ISS\)](#) are legally classed as radiation workers. Prolonged exposure to cosmic rays can result in an increased chance of cancer, impaired immune systems, and even affect the brain and nervous system. The latter is of particular concern because it's already known that patients undergoing radiation therapy to treat brain tumors can suffer severe neurological symptoms, such as problems with cognition and memory.

### **Can A Sweat Sensor Reliably Measure Blood Glucose?**

In order to monitor their blood glucose levels, diabetics typically have to perform finger-prick blood tests as often



In many nations communications tech is liberating women, but in countries such as India, the new technology is exacerbating an [already deep gender gap](#). The gulf is blocking women from increasingly [crucial ways of communicating](#) and learning, and making it harder for them to find work, upgrade their skills and assert political rights.

In India, millions use smartphones to find jobs, bank, study, order train tickets, interact with the government and more. Offline options require freedom of movement not available for many women, and extra time and cost in traveling, standing in lines and filling out forms.

### **A Dog Collar To Let You Know How Your Pet Is Feeling**

Just in case you can't sense how your dog feels, a Japanese biologist has invented a dog collar that is capable of detecting [the emotions of a dog](#) and communicate them to humans.



The smart collar device is named Inupathy—Inu means dog in Japanese—and was developed by Joji Yamaguchi to better understand his own dog.

as several times a day. Thanks to research being conducted by scientists from the University of Texas at Dallas, however, [a non-invasive alternative may be on the way](#).



Led by Dr. Shalini Prasad, a team at the university is creating an electrochemical biosensor that continuously measures glucose in the wearer's sweat.

The flexible device incorporates stacked metal/metal-oxide thin films within a porous polymer-based textile, and utilizes the same basic chemistry and enzymatic reaction found in blood glucose testing strips. That said, instead of being able to analyze a full drop of blood, the sensor will have to make do with the small amount of sweat that would be present on the skin underneath an adhesive patch, or perhaps beneath a health-tracking watch.

Although the prototype has already been successfully tested on human sweat samples, a consumer version is likely still a few years away. In the meantime, diabetics might also want to keep an eye on similar sweat-analyzing technologies being developed by the [University of Cincinnati](#), Korea's [Institute for Basic Science](#) and [Fraunhofer](#).

### **Transferring Data Through Touch**

Panasonic has been demonstrating a prototype communication system where [data is transmitted](#) from one person to another through touch.

The inventor describes Inupathy as “the world’s first mental visualizer for dogs.” It works by measuring the heart rate, analyzing the animal’s emotional state and conveying it through embedded color LEDs on the back of the device.

Earlier this year, a similar device was conceived by U.K. pet store Fetch, which proposed a similar type of communication system that worked through a smartphone app, appropriately called [WhatsYapp](#).

### **A Baby Robot That’s Designed To Tug At Our Heart Strings**

[A baby robot](#) designed to “invoke an emotional connection” has been unveiled in [Japan](#), where plummeting birth rates have left many couples without children.

The Kirobo Mini was created by Toyota’s non-automotive department and is equipped with artificial intelligence and a camera so it can recognise the face of the person speaking to it and respond.



“He wobbles a bit, and this is meant to emulate a seated baby which hasn’t fully developed the skills to balance itself,” said Fuminori Kataoka, Kirobo Mini’s chief design engineer. “This vulnerability is meant to invoke an emotional connection.”

Toyota plans to sell Kirobo Mini, which blinks its eyes and speaks with a baby-like high-pitched voice, for 39,800 yen (£300/US\$390) in Japan next year. It comes with a “cradle” that doubles as its baby seat designed to fit in car cup holders.

The baby automaton joins a growing list of companion robots, such as the upcoming Jibo – designed by robotics experts at the Massachusetts Institute of Technology and resembling a swiveling lamp – and Paro, a robot baby seal



There's very little information on the system available, but Panasonic says that the prototype uses electric field communication technology to move data from "thing-to-thing, human-to-human and human-to-thing." Data transfer and authentication occurs when the objects or people touch, with digital information stored in a source tag instantaneously moving to a receiver module – kind of like NFC tap to connect technology, but with people in the equation as well as devices.

It has the potential to allow business types to exchange contact information with a handshake, mood lighting in a room to be changed to match or contrast with clothing when a lamp is touched or access to a building granted by placing a hand or object on a lock interface or door handle. And Panasonic suggests that because the data is traveling through the body and not over the air, secure transmission is assured.

The CEATEC demos are quite basic, but serve to show that the system works. There's no word at the moment on whether it will make it to enterprise or commercial availability, but the video below shows the Human Body Communication Device in action.

[www.rayhammond.com](http://www.rayhammond.com)

marketed by Japanese company Intelligent System as a therapeutic machine to soothe elderly dementia sufferers.

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