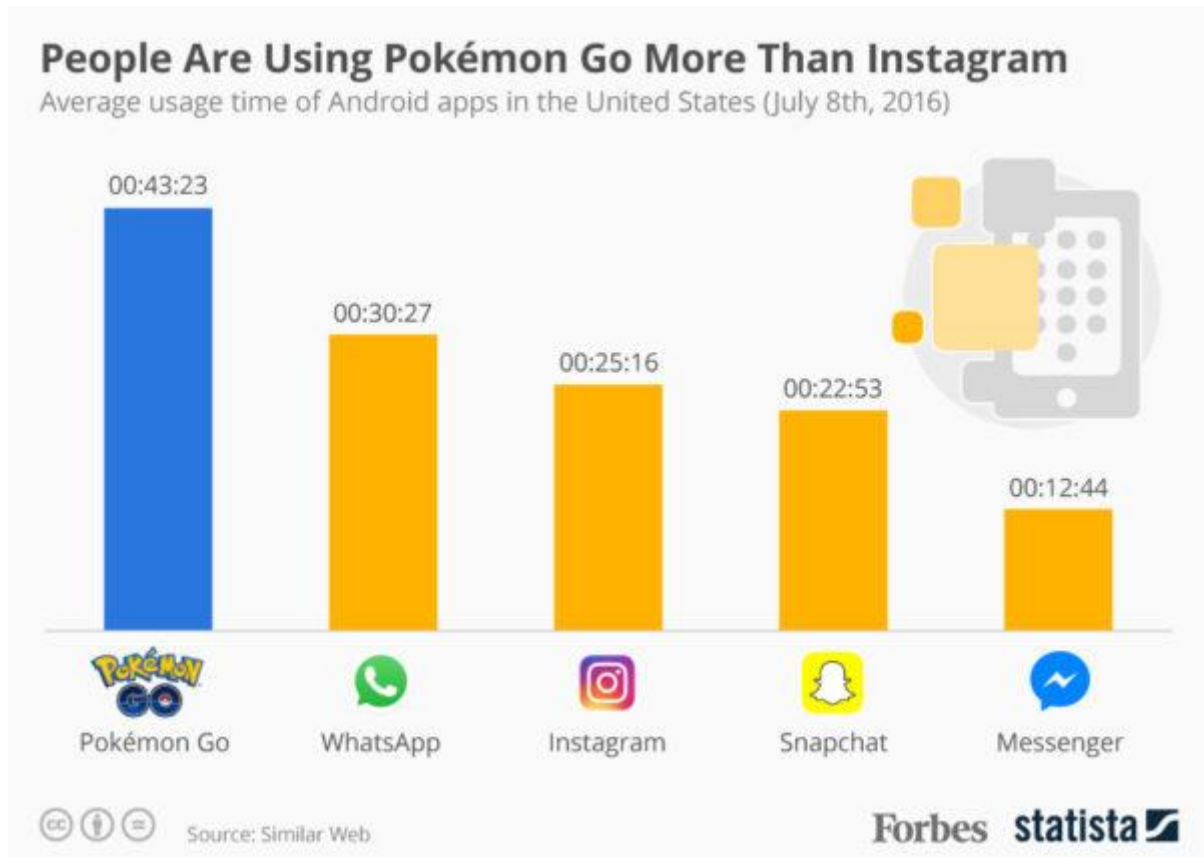


## Technologies : what for ?

### Document 1



### Document 2



## Document 3

the guardian

Tuesday 4 October 2016

### **Baby robot unveiled in Japan as number of childless couples grows**

*Palm-sized Kirobo Mini 'wobbles a bit', blinks and speaks with high-pitched voice in order to 'invoke an emotional connection' The Kirobo Mini is equipped with artificial intelligence and a built-in camera so it can recognise the face of the person speaking.*

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 swivelling lamp – and Paro, a robot baby seal marketed by Japanese company Intelligent System as a therapeutic machine to soothe elderly dementia sufferers. Around a quarter of Japan’s population is over 65 with a dearth of care workers putting a strain on social services.

Exacerbated by a reluctance to invite immigrants to bolster its working-age population, Japan’s demographic slowdown shows little sign of easing.

In the past half-century births in Japan have halved to around a million a year, according to government statistics, with one in 10 women never marrying. Births out of wedlock are frowned upon in Japan and much less common than in western developed nations.

Japan is a leading user of industrial robots. It has the second-biggest concentration after South Korea, with 314 machines per 100,000 employees, according to the International Federation of Robots. New technology to help robots better interact with humans means they have begun moving beyond factory floors into homes, offices, shops and hospitals.

Kataoka said Toyota, which is investing heavily to develop artificial intelligence for self-driving cars, saw Kirobo Mini as a stepping stone to more advanced robots that would be able to recognise and react to human emotions.

## **Document 4**

<http://www.foxnews.com/tech/2013/10/03/5-top-new-techs-for-marines.html>

### **5 Top new techs for Marines**

*By Allison Barrie, October 3, 2013*

Innovators at the Office of Naval Research work on tech [...] such as scalable body armor and futuristic lasers... Here are five [...] inventions just revealed at the Modern Day Marine exposition held at Marine Corps Base Quantico in Virginia.[...] These smart technologies are destined to be crowd pleasers.

#### **Chameleon-like smart shades**

[Fast-Tint Protective Eyewear.] Made by TechSolutions [...], these lenses not only shield a Marine's eyes from ballistic impact, they automatically shift when a warfighter is on the move through different light conditions.

When she works indoors the lenses are clear; they shift to blue or amber for low-light or dusk and become dark gray in the daytime. And they provide 100 percent protection from ultraviolet A, B, and C rays as well. This revolutionary single-lens technology can be used for both goggles and glasses.

[...] These shades have an auto-sensor that reacts to the environment and works out the right lens color, transitioning in less than half a second. [...]

Fast-Tint Protective Eyewear has more than 55 hours of battery life and can be recharged with a USB cable. [...] Fit for range of terrains like urban, desert and mountains, the tech can withstand hot and cold-weather environments...

#### **Better vision for drivers**

The compact Image Enhancement unit attaches to the Driver's Vision Enhancer (DVE) system on Marine Corps vehicles. It's designed to improve night situational awareness, reduce driver stress and eye strain as well as provide better vehicle safety. The unit will give Marine Corps drivers better image contrast and detail day or night. It takes video continually from the DVE sensor and delivers better analog video to the display.

#### **Achieving first round hits**

The Multiple Weapon Control Sight (MWCS) is an infantry weapon fire control unit to give Marines an improved day and night fire control over a number of infantry weapon systems. [...]

The tech mounts to the side of a weapon and includes a LED display screen and range knob to ensure the right weapon orientation and improve the probability of a first-round hit. A Marine can take the user menu and choose ammunition and a particular weapon system configuration, and the sight will give the right aiming cues. The warfighter can obtain azimuth and elevation aiming cues using the programmable sight's on-board ballistic library.

### **Power for explosive disposal**

The Power Management Kit (PMK) is a lightweight universal system that powers equipment for the U.S. Navy [...] It reduces the weight and battery bulk that warfighters currently need to carry to power their gear. The one-pound Soldier Power Manager charges all standard batteries from almost any energy source from vehicles through to solar. [...] Up to five connected batteries can be charged simultaneously.

### **Power-generating blankets**

[...] The Naval Research Laboratory is also producing a high-powered solar blanket that could provide power for the dismounted soldier. [...] Researchers are developing crystalline, highly efficient, solar cells that are lifted off the growth substrate and laid onto the blanket to give it a high power output. This high tech blanket could provide three times current tech power output.

## **Document 5**



### **How Technology Will Change the Future for Alzheimer's Patients**

February 20, 2014, by Jennifer Wegerer

*Technology can help us see, hear and communicate better. Applying innovations in technology to the specific needs of Alzheimer's patients, scientists are giving many seniors a safer and more independent life.*

Remembering names, losing keys and even finding their way home; seniors with Alzheimer's face enormous challenges in dealing with what were once everyday tasks. But, the latest technological tools, from smartphone apps to satellite navigation systems, are changing the future for Alzheimer's patients. Consider these most recent innovations.

### **Power Sleeping Through Alzheimer's Research**

We use our smartphones to text, tweet, Google, and occasionally, make a call. The power those phones hold has recently taken a giant leap in the world of Alzheimer's research. Scientists at the University of Vienna have developed an Android app called Power Sleep, which serves as an alarm clock. Unlike other clock apps, however, Power Sleep, available from the Google Play Store, harnesses the power of a phone while it charges.

Here's how it works:

- Set the alarm.
- Plug the phone into its charger.
- Make sure it is connected to a Wi-Fi network.
- After the phone reaches an 80% charge, Power Sleep starts to process data.

The phone downloads a file (approximately 1MB) from the Similarity Matrix of Proteins (SIMAP) database, which houses information about all known protein sequences. While the phone charges, the database borrows some of its power, along with power from other phones that have Power Sleep installed, to decrypt protein sequences and send that information back to researchers.

Understanding how proteins are arranged is crucial to fighting Alzheimer's. So with a simple app download, people can contribute to Alzheimer's research in their sleep.

### **Recognizing Faces Through Google Glass**

Handsfree technology is also making great strides to fight Alzheimer's disease. Take Google Glass, for instance. Glass takes pictures, gives directions, translates languages and much more, all with a simple command, as you wear it like a pair of glasses.

Through its Google GPS system, Glass shows extraordinary promise as a tool for seniors with Alzheimer's. Prompting them with reminders on where they want to go and how to get there, Glass supports memory function. Seniors can keep up with daily walks, trips to the grocery store and other ventures that help them feel more independent and in control. Additionally, Google Glass provides facial recognition features that connect faces with names and relationships. So, seniors who wear Glass would have immediate cues as to who is standing in front of them. What's more, relatives and caregivers can use features of Glass to monitor a senior's location.

### **Other Technologies for Seniors With Alzheimer's**

The Alzheimer's Society describes several other assistive technologies that facilitate memory, reduce risks and promote autonomy for seniors with Alzheimer's. Here are just a few of these tools:

- Calendar clocks
- Touch lamps
- Reminder messages that use personal voice prompts
- Locator devices
- Medication aids
- Remote in-home monitoring systems
- Tracking devices