



# Sample Innovation Snapshot

2017

Powered by **SPRING  
WISE**

# Sample Innovation Snapshot

## Introduction

The Internet of Things, artificial intelligence, 3D printing, virtual reality, drones, driverless this, contextually aware that...

At Springwise we have a network of over 20,000 Springspotters across the globe sending us innovations and new business ideas on a daily basis. Not a day goes by that we don't hear about a daring new startup taking the aforementioned technologies into brave new areas. It's inspiring, of course, and there can be little doubt that the technologies that already exist today will fundamentally alter how we do business and live our lives in the future.

Amongst this stream of new ideas, however, it's often easy to lose track of the bigger picture. What are these advancements actually... advancing? What does the future look like once these technologies

have become truly mainstream? Taking a step back, and looking at the kind of innovations we're seeing today, compared to, say, four or five years ago — or even further back — some key differences become apparent.

In the last industrial revolution, technology was created to help us *do more*; to create and produce more materials and products, more efficiently. Comparisons have been made between the digital revolution of today and the last industrial revolution, and there are, undoubtedly, many obvious similarities. Along with the sheer scale of disruption, many of the advancements we're seeing now are also helping us create more, in less time and with less waste. They are *enabling*.

However, a key difference with today's revolution is that we're also seeing the

emergence of technologies that are *disabling*.

Take the the Luce X2 vending machine, featured below, which denies consumers access to snacks, or the Attention Powered Car that slows down if the driver isn't alert enough.

This is more than a "trend". These innovations hint towards a more substantial shift in our relationship with technology, and almost certainly sets a precedent for the future. We are now willing to let technology both enable and disable our actions, in an acknowledgment that, for perhaps the first time in human history, technology "knows" best.

**The question now, then, is what else can technology help us *not* to do?**

**CHRIS KREINCZES**  
**EDITOR-IN-CHIEF,**  
**SPRINGWISE**



## At a Glance

### WHAT

Jibo is a friendly robot that uses facial recognition and natural language processing to offer personal assistance in the home, and perhaps become a new member of the family.

### WHO

Jibo

### WHERE

United States

### CONTACT

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

[info@myjibo.com](mailto:info@myjibo.com)

# Jibo is a social robot for the home

**Jibo is a friendly robot that uses facial recognition and natural language processing to offer personal assistance in the home, and become a new member of the family.**

Robots in the home are currently limited to Roombas and smart appliances that can seem less like The Bicentennial Man and more like computers on wheels. There's a growing trend to make robots act more like humans however, and we've already covered Budgee, the helper robot that carries luggage and follows its owners wherever they go. Now Jibo is a friendly robot that uses facial recognition and natural language processing to offer personal assistance in the home, and perhaps become a new member of the family.

Created by social robotics pioneer and MIT professor Dr Cynthia Breazeal, the robot looks similar to Pixar's animated lamp, and is

designed to elicit the same fuzzy feelings. Behind its circular face are two hi-res cameras, 360° microphones, a speaker, an on-board computer and wifi and Bluetooth connectivity. Jibo learns what its owners' faces look like, as well as their voices, so it knows who's speaking to it and who it's addressing in its Siri-like natural voice. It can also sync with other smart appliances and learn homeowners' preferences and daily habits.

Rather than working in the background however, the robot has been designed to be social. Users can call on it to take photos or video of special family moments and it tracks body movement and facial expressions to make sure everyone's in the

shot and looks happy. It can also give out personalized reminders depending on who's in the room, and read bedtime stories complete with sound effects and matching graphics. Significantly, it can also place orders for food and goods. Jibo is responsive and uses its swivelling base to make sure it's facing family members before speaking.

While many companies and labs have been working on humanoid robotics for decades, Jibo may be the most characterful and also affordable robotic assistant. It's currently available to pre-order.

Are there other ways to make technology more friendly?





## At a Glance

### WHAT

Apotek Hjärtat is using Happy Place, a series of virtual reality outdoor scenes, as a supplement to traditional pharmaceutical pain relief treatments.

### WHO

Apotek Hjärtat

### WHERE

Sweden

### CONTACT

[www.apotekhjartat.se](http://www.apotekhjartat.se)  
[william@mimerse.com](mailto:william@mimerse.com)

# Swedish pharmacy prescribes VR pain relief app

**Apotek Hjärtat is using Happy Place, a series of virtual reality outdoor scenes, as a supplement to traditional pharmaceutical pain relief treatments.**

Distracting the mind with virtual scenes of nature and calm stimuli is increasingly being found to be an effective method of relieving temporary pain. Working with startup Mimerse, a therapeutic app developer, Sweden's Apotek Hjärtat pharmacies created the virtual reality Happy Place. Designed to supplement traditional pharmaceutical treatments, Happy Place can help alleviate aches and pains like vaccinations, menstrual cramps, tattoos and sore muscles.

Using a painterly style of artwork, Happy Place tracks users' eye

movements, eliminating the need for extensive instructions and buttons. Users can interact with the scenes as much or as little as they like. Some people prefer to gaze at the scenery, whereas others prefer the challenge of finding the objects that, when gazed upon for a bit longer than usual, unveil new aspects of the environment. Happy Place is available from some Apotek Hjärtat pharmacies and for free from the Oculus store. Virtual reality is being used as a supplement to a number of different industries, from virtual crime scene re-enactments

for jurors to emergency birth care education.

How could the technology be used ethically for personal use in less connected communities?



## At a Glance

### WHAT

Teenage Engineering releases CAD files for their products, so users can 3D print customized parts for their music production tools.

### WHO

Teenage Engineering

### WHERE

Sweden

### CONTACT

[www.teenageengineering.com](http://www.teenageengineering.com)  
[support@teenage.engineering](mailto:support@teenage.engineering)

# Electronics manufacturer gives away 3D printing files for product parts

**Teenage Engineering releases CAD files for their products, so users can 3D print customized parts for their music production tools.**

Teenage Engineering made a name for themselves with the OP-1 in 2011, a widely popular synthesizer, sampler and sequencer for music production. But when they had issues making and shipping product parts due to existing inefficient shipping systems for small-sized items, they came up with an ingenious solution — the company released CAD files onto Shapeways, so users can 3D print their own customized accessories for their instruments.

The Swedish company was the first electronics manufacturer to post replacement parts as downloadable 3D printed files

for consumers. Not only does this eliminate the need for a warehouse and distributing costs, it also paves way for user customization. As music production tools serve to ultimately uphold creativity, this increases creative opportunities while lowering the cost for consumers to modify and manufacture their own unique instruments. Teenage Engineering's move enables users to modify their synths on the fly — musicians can be in a session, encounter a problem or be inspired to create a new tool, print the hardware, and continue their music making in a matter of hours.

Now, the Swedish company has a new line of affordable

synthesizers: the Pocket Operators priced at EUR 69 each. Compared to the OP-1 (priced at USD 849), these low cost devices are stripped back, with an exposed printed circuit board making up the majority of its body. There are 23 buttons, signified by symbols due to the lack of space. And again, the company released precise measurements and CAD files, so users can custom print their own extensions for these modules. One user created a case where the buttons are larger and easier to manipulate.

Could this become the norm for all electronic devices?

### WHAT

RanMarine Technology's latest waste-management solution is the WasteShark, a solar-powered, autonomous drone that collects garbage from harbor waters.

### WHO

RanMarine Technology

### WHERE

Netherlands

### CONTACT

[www.rantech.nl](http://www.rantech.nl)

[www.rantech.nl/contact.html](http://www.rantech.nl/contact.html)

# Aqua drone gulps harbor trash, prevents ocean pollution

**RanMarine Technology's latest waste-management solution is the WasteShark, a solar-powered, autonomous drone that collects garbage from harbor waters.**

Drones are proving more and more valuable in helping humans manage large tracts of land and natural disasters, from starting fires for controlled forest burns to monitoring the spread of infectious diseases from animals to humans. In The Netherlands, RanMarine Technology is using drones to help prevent further pollution of the oceans. WasteSharks are smart, solar-powered aqua drones that collect garbage from rivers, canals and harbors.

Designed for use in areas where waste is known to collect, the car-sized drones increase their efficiency as they learn about each environment. Two sizes of WasteShark are currently working in Rotterdam, with a third, the Great Waste Shark, in development. The machine-learning capability, combined with on-board sensors and cameras, help keep the WasteSharks out of the way of larger crafts. Collected garbage is passed on to recycling and waste-management partners for processing.

How could aqua drone technology be further developed for use in cleaning other pollutants, such as oil spills?



### WHAT

The Things Network is helping to build free city-wide internet in Amsterdam, without the use of wifi or 3G.

### WHO

The Things Network

### WHERE

Netherlands

### CONTACT

[www.thethingsnetwork.org](http://www.thethingsnetwork.org)  
[wienke@thethingsnetwork.com](mailto:wienke@thethingsnetwork.com)

# Free, open, crowdsourced city-wide IoT network

**The Things Network is helping to build free city-wide internet in Amsterdam, without the use of wifi or 3G.**

A world where internet access is free for all, where an Internet of Things is networked by the users, for the users. Is it possible? In Amsterdam, it's already happened. The Things Network (TTN) is planning to build a global open crowdsourced Internet of Things data network, and work is well underway.

In a period of just 6 weeks, Amsterdam was transformed into a city-wide accessible network, without the help of any big business or telecoms companies — it has been entirely crowdsourced. TTN initiator Wienke Giezeman saw the potential in a new technology called LoraWAN (Long-range Wide Area

Network) to create gateways for connecting municipal geographic zones. The devices allow things to connect to the internet without the use of wifi, 3G, or Bluetooth. It has a wide range and cheap development and installation costs — EUR 1500 for 7 mile radius devices — and the team will soon launch a Kickstarter campaign to develop a cheaper EUR 200 unit.

Pilot projects already underway in Amsterdam include devices that alert boat owners to potential flooding of their moored vessels, and a device to monitor users' bikes. The port of Amsterdam, which struggles to support the

cost involved in setting up wireless networks across the whole port area, has also been contributing to the project. After the rapid success of Amsterdam's crowdsourced city-wide activation, TTN is hoping other cities will be queuing up to create their own citizens' network.

LoraWAN technology will allow the IoT to change the way cities function — with crowdsourcing from those who can afford to install gateways, all the inhabitants will benefit from having their city connected. What other projects are possible with a Things network?



## At a Glance

### WHAT

The Alcho-Lock is a Bluetooth connected bike lock which requires users to take a breathalyzer test before it will unlock.

### WHO

KOOWHO

### WHERE

Japan

### CONTACT

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

# Bike lock requires cyclists to take a breathalyzer test

**The Alcho-Lock is a Bluetooth connected bike lock which requires users to take a breathalyzer test before it will unlock.**

Cycling under the influence can be just as dangerous as drink-driving, but there aren't the same laws in place to discourage it. It is often up to the cyclist themselves to judge whether they are fit to get on their bike, however, good intentions often disappear after a few drinks, so the Alcho-Lock — developed by Japanese bike maker KOOWHO — is a smart bike lock that cyclists can put in place when they're sober, to protect them from bad decisions later on.

The Alcho-Lock is a Bluetooth connected bike

lock which requires users to take a breathalyzer test before it will unlock. The lock is synced to a companion smartphone app: when the user wants to unlock their bike they must first breathe into it and await assessment from the app. Then, if the user is drunk, the app will provide a warning message — advising them against riding home — before unlocking the bike. The app can also be set to alert a friend or loved one if the user has had too many.

We have seen similar systems used to disable drink driving, such as the

parking lot barrier which only lets club revelers who are under the limit leave, and urinal cakes that inform parking valets which clobbers are too drunk to drive.

How else could cyclists be discouraged from riding when drunk?





## At a Glance

### WHAT

The Physical Cookie is a device which could bring targeted digital marketing capabilities to city malls and shopping centres worldwide.

### WHO

Sponda

### WHERE

Finland

### CONTACT

[www.physicalcookie.com](http://www.physicalcookie.com)  
[juha-matti.raunio@tbwa.fi](mailto:juha-matti.raunio@tbwa.fi)

# Digital keychain brings online cookie functionalities to the mall

**The Physical Cookie is a device which could bring targeted digital marketing capabilities to city malls and shopping centres worldwide.**

In the face of evermore advanced e-commerce algorithms, the smartest brick and mortar outlets are borrowing from their online counterparts to create hybrid shopping experiences that incorporate the best of both worlds. We have already seen Kate Spade's interactive "coming soon" signs and Rebecca Minkoff's digital flagship store, for example. Now, Finland-based Sponda have developed the Physical Cookie, a device which could bring targeted digital marketing capabilities — the kind readily available to online retailers — to city malls and shopping centres worldwide.

The Physical Cookie is a system that brings online cookie functionalities to the real world, enabling businesses to collect and use data about a consumer's shopping practice. The device is a simple key fob that the customer places in their pocket or attaches to their clothes. It doesn't need to be registered or retain personal data, instead focusing solely on the customer's time spent instore. The Physical Cookie collects data about the customer as they shop, monitoring their behavior and communicating its findings with participating stores via electronic readers. The system learns from the

usage data and creates personalized messages and offers, which are displayed to the consumer on screens instore in real time.

Sponda, in collaboration with ad agency TBWA\Helsinki, undertook a successful large scale trial in one of Helsinki's busiest malls last fall, where 14,000 shoppers carried the Physical Cookie and were rewarded with targeted deals over a four-month period. The technology enables the retail space to react to the individual consumer's behavior rather than bombarding them with irrelevant advertising.

### WHAT

The Luce X2 Touch TV vending machine uses facial recognition and customers' medical records to determine if they should be allowed to buy an unhealthy snack.

### WHO

Rhea Vendors

### WHERE

Italy & United Kingdom

### CONTACT

[www.rheavendors.com](http://www.rheavendors.com)  
[www.rheavendors.com/en/keepintouch/wheretofindus.php](http://www.rheavendors.com/en/keepintouch/wheretofindus.php)

# This vending machine will deny you snacks based on medical records

**The Luce X2 Touch TV vending machine uses facial recognition and customers' medical records to determine if they should be allowed to buy an unhealthy snack.**

Businesses often stand by the motto 'the customer is always right' — but are they? We've already seen a few services that deny consumers what they want based on their personal info. For example, Billboard Brasil's Fan Check Machine only gave out copies of the music magazine if the buyer could prove they owned tracks by the artist on the cover. Now the Luce X2 Touch TV vending machine uses facial recognition and customers' medical records to determine if they should be allowed to buy an unhealthy snack.

Created by Italy-based Rhea Vendors and recently launched in the UK, the

machine features a 22-inch touchscreen display that lets customers to select an item just like a standard vending machine. However, before the snack is released customers with an account can go through a facial recognition check.

The technology detects the customer's age, build and mood in order to determine whether the purchase is a wise decision. The machine can also be programmed to access information about the user's medical records and purchase history. If the algorithms decide that purchasing a coffee with 3 sugars or the fourth candy bar of the day is a bad idea

for their health or mood, it can refuse to vend the product.

While some customers won't appreciate their private data being analyzed or getting rejected by a lifeless machine, the idea could be a savior for those on a diet. Locations such as gyms could also integrate their memberships with the system to deny snacks to those who don't visit often enough.

Will this kind of automatic personalization become a standard for smart vending machines — or retail more broadly — in the future?





## At a Glance

### WHAT

Las Vegas has brought in streetlamps that are powered by a combination of solar and kinetic energy.

### WHO

EnGoPLANET

### WHERE

United States

### CONTACT

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

# Streetlights powered by footsteps

**Las Vegas has brought in streetlamps that are powered by a combination of solar and kinetic energy.**

New York based EnGoPLANET partnered with the city of Las Vegas to install the world's first smart streetlights that are powered by the kinetic energy of people's footsteps. According to EnGoPLANET's own estimates, the world spends more than USD 40 billion each year in energy costs for the more than 300 million traditional streetlights that result in more than 100 million tons of carbon pollution annually.

The new streetlights, installed in Boulder Plaza in the city's Arts District, are powered by a combination

of solar panels and kinetic energy pads. The innovation represents a significant opportunity for governments looking to meet their climate targets, as more cities announce plans to run entirely on sustainably produced energy. Las Vegas Mayor, Carolyn G. Goodman explains the city's plans, "We want to provide the highest service levels while also looking to the future and ensuring that we are sustainable. Las Vegas strives to be on the cutting edge of all things, and this project coincides with plans to develop an innovation district in our downtown."

The company has plans to bring solar-kinetic streetlights to the 1.4 billion people that do not yet have access to street lighting. They are currently crowdfunding on Indiegogo to install the lights in 10 villages across Africa. We recently wrote about this wood flooring innovation that makes it possible to harvest the energy of people walking on it.

How else will we see footsteps put to good use in this way?





## At a Glance

### WHAT

German-based Digital Prosthesis developed Shortcut, a connected wristband that provides amputees with the fine motor movements needed to work on a computer.

### WHO

Digital Prosthesis

### WHERE

Germany

### CONTACT

[www.digital-prosthesis.de](http://www.digital-prosthesis.de)  
[hi@digital-prosthesis.de](mailto:hi@digital-prosthesis.de)

# Wristband gives amputees wireless computer control

**German-based Digital Prosthesis developed Shortcut, a connected wristband that provides amputees with the fine motor movements needed to work on a computer.**

In Germany, the most common artificial hand requires users to learn a series of gestures to operate it. While useful, the prostheses do not allow for small enough movements for users to work on a computer. New company Digital Prosthesis developed Shortcut, a digital wristband that is worn on the prosthesis and translates the available range of motion into the actions needed for online work.

Made from brightly colored, soft silicone, the Shortcut wristband uses electrodes and an optical sensor to translate

hand and arm movement into on-screen actions. When a user rests the wristband-wearing prosthesis on a table, digital motion is activated and physical movement deactivated. Using the phantom movements that many amputees can neurologically control, the wristband allows users to navigate online using the basic click, scroll and zoom set of computer movements.

From a travel site that caters to those with additional mobility needs to superhero-themed bionic hands for young amputees, technology is

making inclusion easier.

How else could inclusive design help people with impairments replicate common physical movements for improved workspaces?

Questions?  
**[service@springwise.com](mailto:service@springwise.com)**

Springwise  
1 Sekforde Street  
EC1R 0BE, London  
United Kingdom

**Copyright © 2016**  
**Springwise Intelligence Ltd.**  
**All rights reserved.**