FUTURE SCAPES

Imagining Technologies for a Sustainable 2025

forum for the future

SONY
make.believe

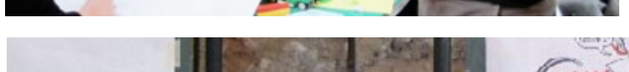
www.sony.co.uk/futurescapes

Welcome to FutureScapes

What do you think life will be like in 2025?

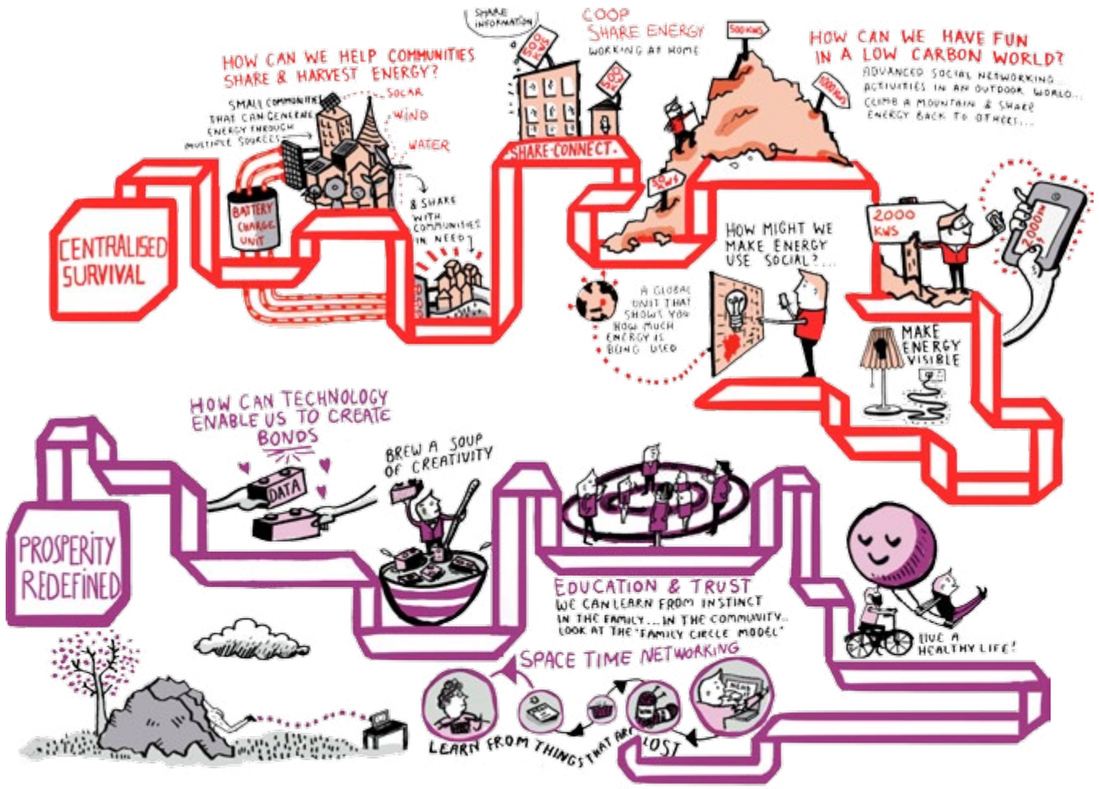
FutureScapes is an exciting collaboration project that aims to explore the potential of technology and entertainment to create a better, more sustainable world in 2025. It's not about predicting the future so much as imagining the possibilities. We face an infinite number of possible futures ahead of us. But one thing is clear: the world of 2025 will be very different from the one we live in today.

Since September 2011, the FutureScapes collaboration has brought together some of Europe's best thinkers, doers, writers and inventors. Their brief was to explore how technology can help us live better, more sustainable lives in 2025. After an extensive research capture phase, specific concepts were developed in two workshops, one in Paris and one in London, and have since been refined by design and innovation partners Superflux, The Pipeline Project and Engage by Design.

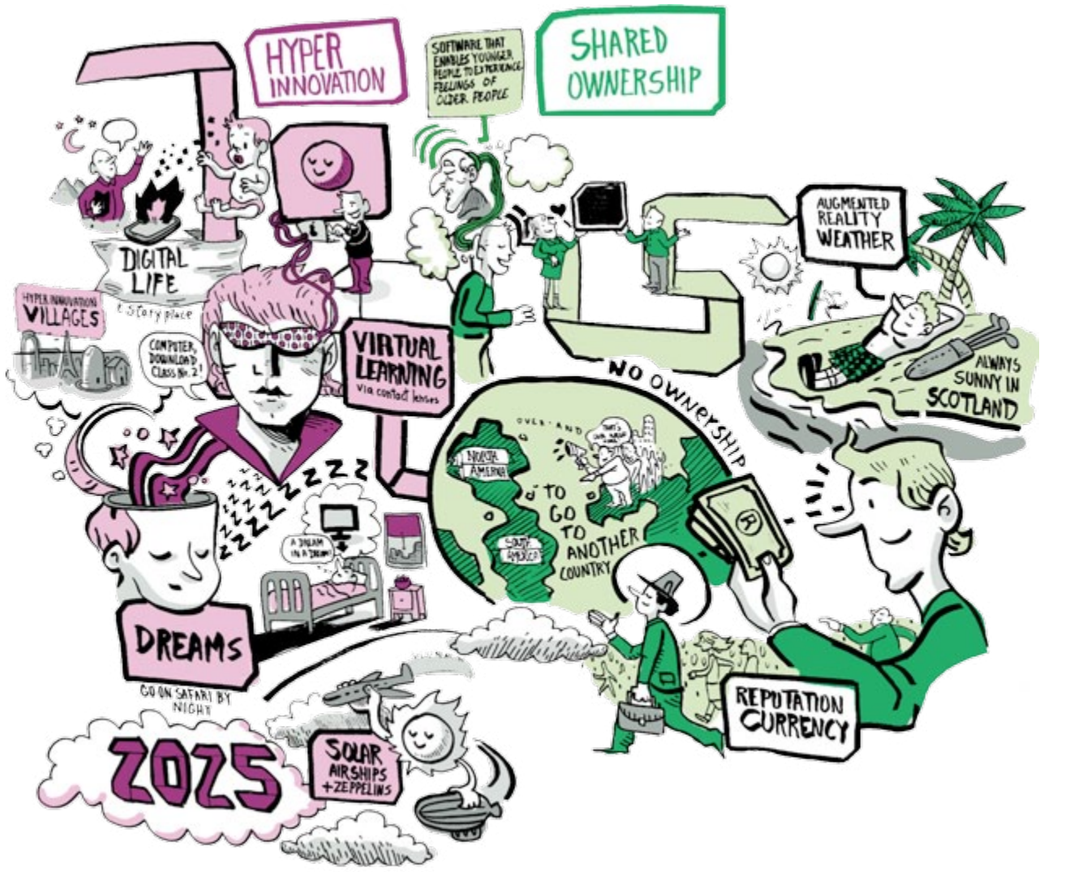


FutureScapes is designed to be as open and collaborative as possible and is being convened by leading sustainability non-profit organisation, Forum for the Future, and leading consumer technology company, Sony. We would very much like to hear what you think about our initial exploration. To find out more follow @better_futures on Twitter as well as #futurescapes and connect with the FutureScapes community on Facebook or online.

FutureScapes concept brainstorm map



The FutureScapes scenarios were used as a starting point for brainstorming



The initial thinking was captured on paper

SCRIBERIA

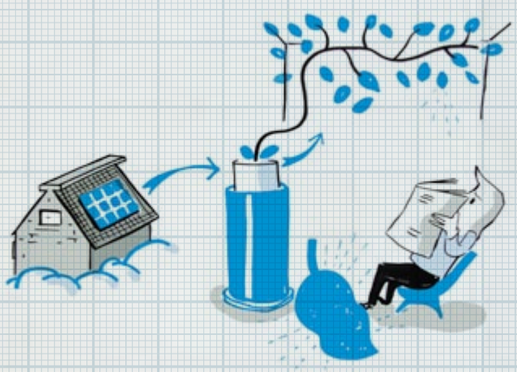
This project is all about imagining what the world might be like in 2025. As a starting point we developed four FutureScapes scenarios.

The scenarios are a result of an open and collaborative process involving people across Sony and Forum for the Future, as well as leading futurologists and experts from a range of fields. They are not predictions of the future, but instead help us better understand the role technology could play going forward. The four scenarios are: Centralised Survival, Prosperity Redefined, Hyper Innovation and Shared Ownership.

The first concept workshop in Paris was divided into four groups, and each was given one of the scenarios to inspire their thinking. The initial ideas were vast and varied, as is evident by these sketches captured from Scriberia.

Refining the ideas

Many interesting ideas came out of the process, from illuminated sculptures in the centre of cities visualising communal energy consumption, to reputation management systems for the safe sharing of goods and services. Another idea was augmented reality contact lenses to provide educational learning experiences and immersive travel experiences without the need to leave home.



Imagining Technologies for a sustainable 2025

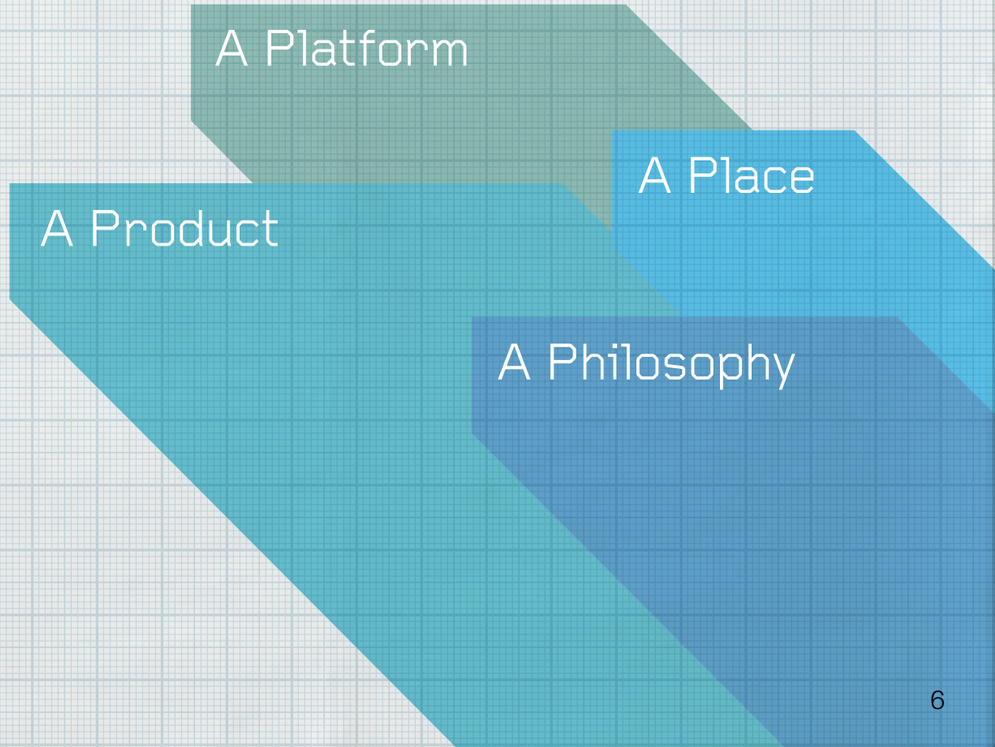
Four key concepts were chosen for further exploration and the next pages will show the initial thinking.

A Platform - IOTA, page 7
Making coding and data accessible to everyone

A Product – Wandular, page 15
A device that evolves with you for your lifetime

A Place – HyperVillage, page 21
Living a hi-tech, hi-nature lifestyle

A Philosophy - The Shift, page 25
An approach to designing and using technology that focuses on meeting human needs and enhancing wellbeing



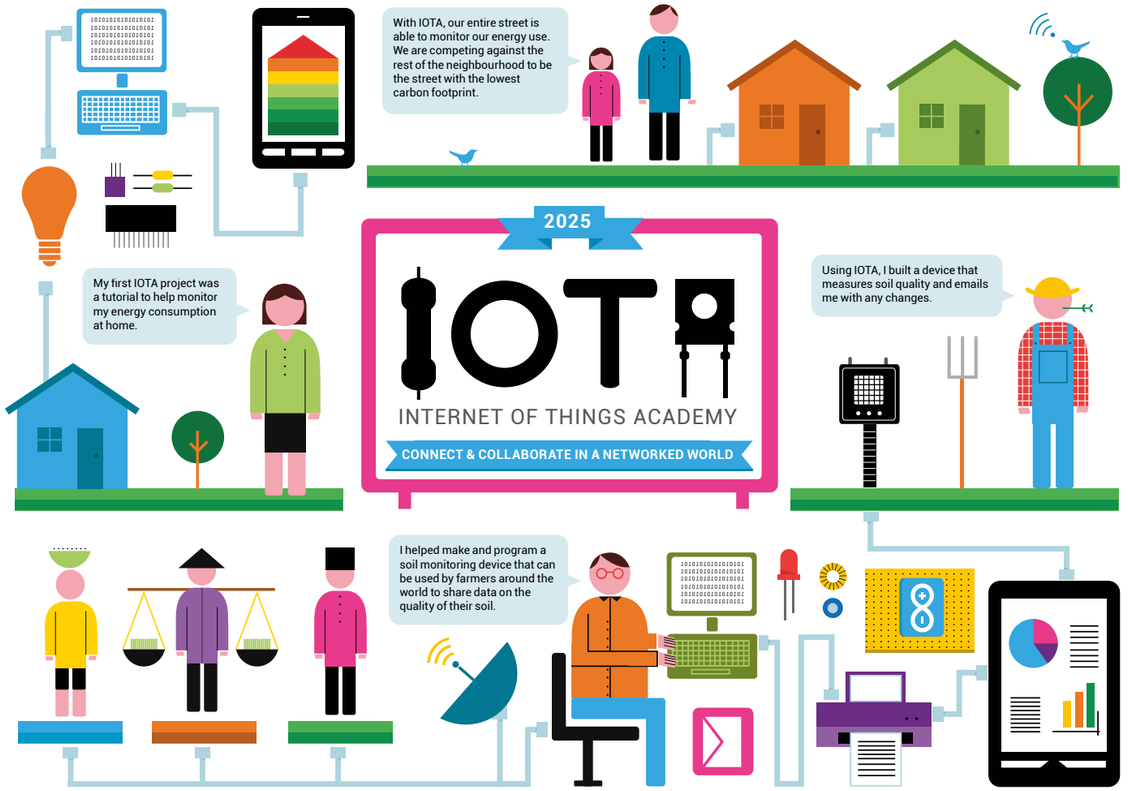
Internet of Things Academy (IOTA)

Making coding and data accessible to everyone

Concept lead:

superflux

superflux.in



The concept in 2025

The ‘internet of things’ will increasingly become influential in our lives, as data can flow from nearly all everyday objects and anything can have an IP address – including our potted plants, our heating system and even our shoes or clothes. The world we inhabit can speak to us like never before. But making good use of this data requires hardware and software knowledge beyond most people’s reach. With the Internet of Things Academy (IOTA), everyone from an interested beginner to an advanced coder will be able to connect, collaborate and build to make the ‘internet of things’ accessible and useful to all.

IOTA provides a network and central platform that facilitates the mixing and matching of hardware, software and data sets, making it simpler for people to combine a range of elements whichever way they want. IOTA projects take many forms, from the simplest of environmental sensors to complex health monitoring projects, intricate works of art, and experimental economic models.

IOTA supports a thriving community of people in imagining, building, and testing projects at the intersection of the physical and the digital. It fosters a real sense of community between experts and beginners, with active moderators, project curation and community challenges. A comprehensive set of tutorials provides a gentle point of entry, allowing new users to quickly prototype and test projects.

IOTA enables a new generation of sustainable, data-driven social enterprises by providing easy access to data from things like networked pollution sensing or health-based lifestyle monitoring.

User experience — Claudine

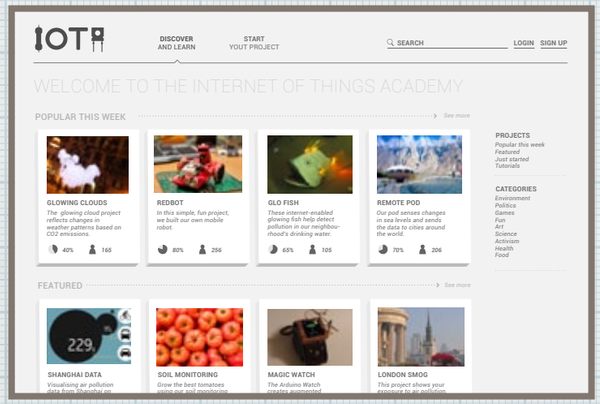
Claudine, a 41 year old woman living in Montpellier, has never done any coding or played with any technology before. As a curious new user, she uses the IOTA tutorials as a starting point.

She uses a preloaded tutorial to create a system that monitors the energy consumption in her home, by hooking up a smart meter to her Twitter account. The potential of future projects has got her excited, and she's recommended the platform to friends and family.

1

I first heard about IOTA on Twitter. A couple of my friends had been using it, so I decided to check it out.

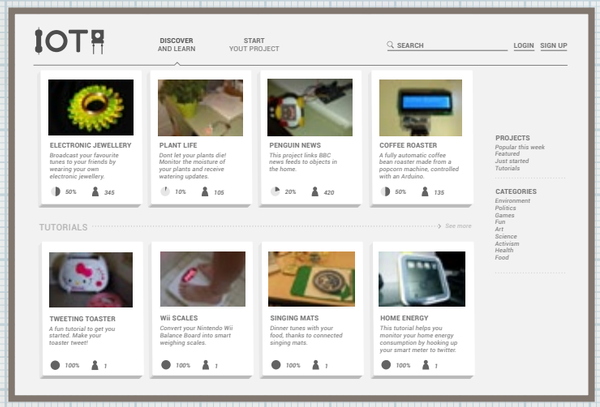
It sounds cool, but I'm no tech expert, so I'll be starting with one of the tutorials.



2

This one is about monitoring energy use in my house, as a way to cut bills. Sounds good!

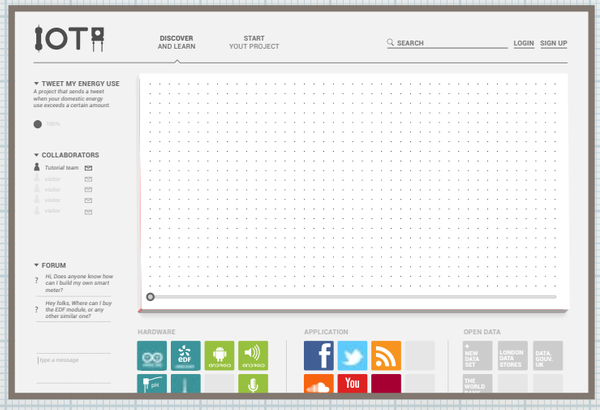
I can hook it up to my Twitter account, so whenever my energy use is over the limits I set, I get a tweet. Nice!



3

I've got all the components I need. It was really easy to complete the order, and delivery was quick.

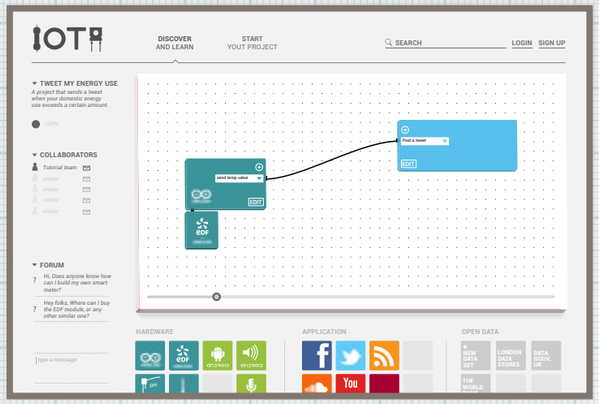
Now I'm ready to start experimenting!



4

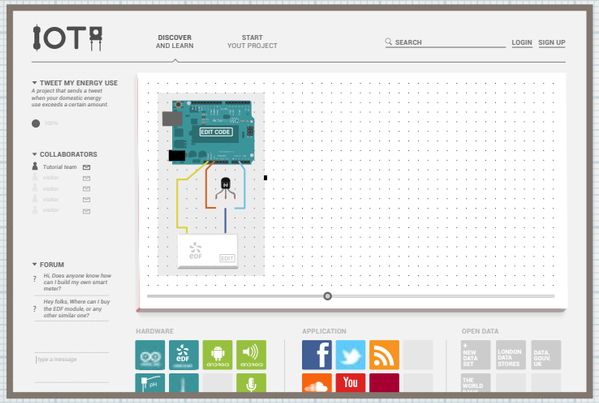
I'm now halfway through building my "arduino circuit", and I can see the arduino starting to send information. Awesome!

There's no pressure, with every step of the tutorial, I'm free to jump back and forward to make sure I am doing the right thing. If I get stuck, I can throw a question into the forum. IOTA users are incredibly helpful.



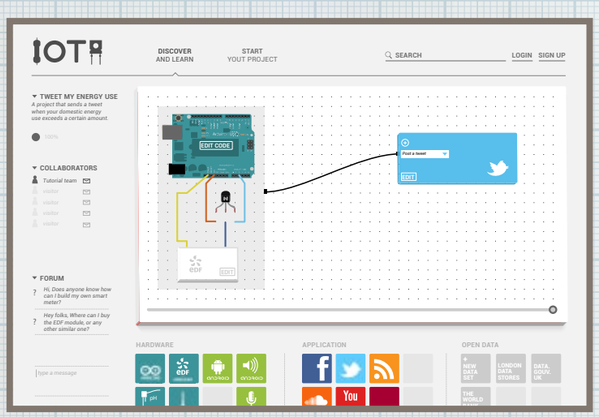
5

I'm checking the physical circuit board layout, i.e. the hardware configuration, to make sure I have got everything set up right.



6

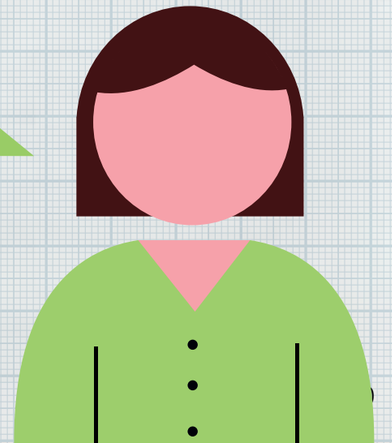
The information from my project is now on Twitter. It's working!

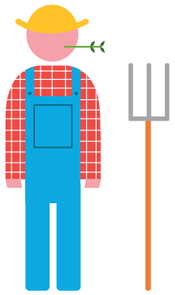


7

I've finished, and it's working as it was supposed to. I did it on my own, and one of my friends now wants to make one too. Pretty cool, hey?

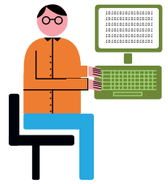
From here, I can start to work on a project of my own design. I've already had a couple of ideas, and it looks like I can connect with any number of people willing to help, should I get stuck.





User experience – Graham

Graham is a 25-year-old farmer from the South East of England exploring the principles of permaculture. He uses IOTA to create a device that helps him monitor the acidity and moisture levels of his soil, as he is experimenting with new crops.



User experience – Brad

Brad is an expert coder and regular IOTA user from Dublin. He is helping Graham in building his device and writing the code. Brad then uses the data from Graham's device, making it accessible to farmers in different parts of the world.

1

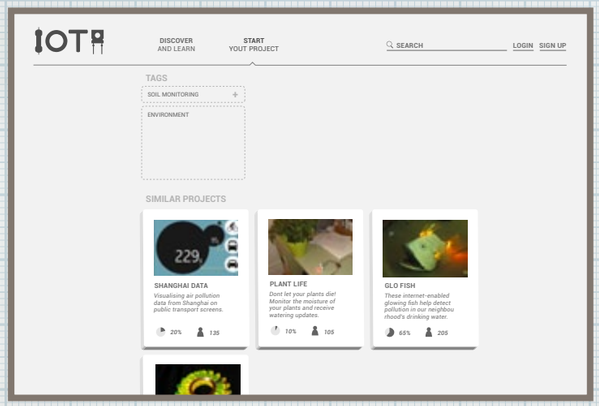
I'm Graham, a farmer exploring the principles of permaculture. I want to grow a mixture of crops on one part of my farm, but need to know more about soil moisture and acidity before deciding what combination will work best.

A friend pointed me at IOTA, saying I could easily build my own sensor array. I visited the site, and some of the projects there got me excited. I have decided to input my challenge and start my project.

2

The IOTA interface has made the whole experience much less daunting.

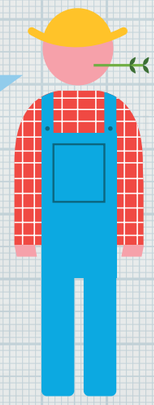
Once I enter my project, it pulls out the important tags and sends it to the forum. I can also see similar projects done by other members.

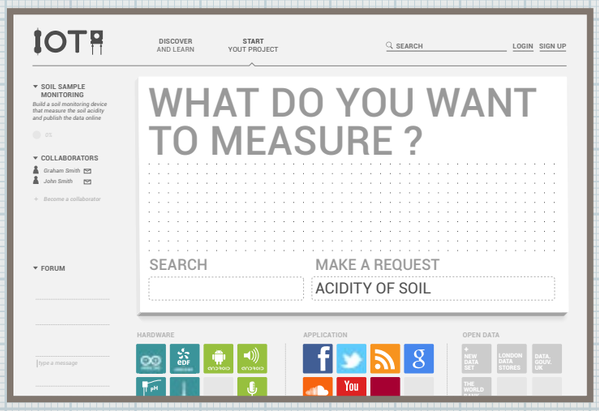


3

The platform takes me through a simple journey to understand what I'd like to measure.

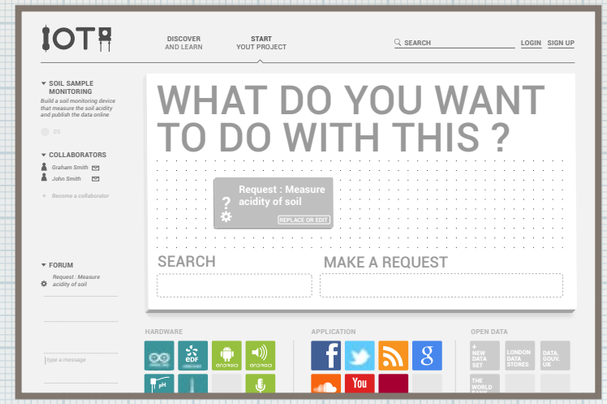
Since there was no specific hardware to measure soil acidity, I made a request to the community for help.





4

After requesting help with the soil sensor, I quickly moved on to start configuring the other aspects of my project.

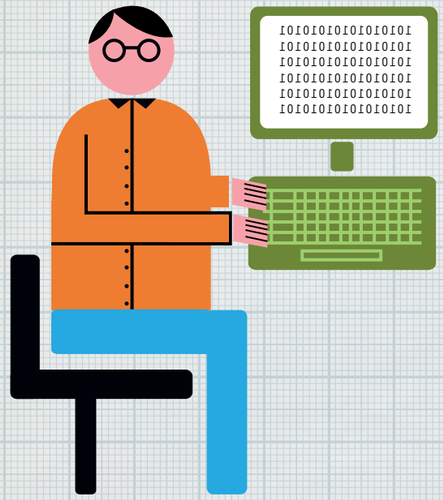


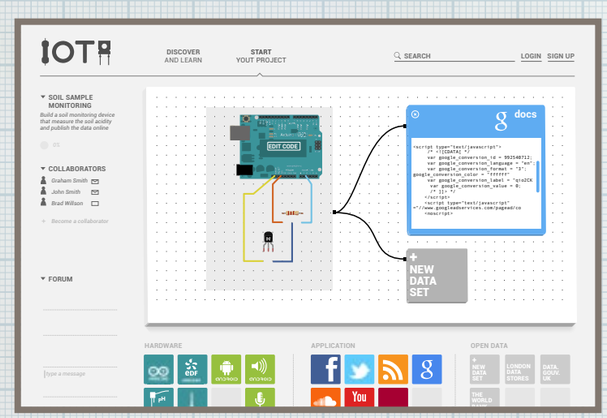
5

I chose Google docs to view the sensor data as I already use this service to store other information.

6

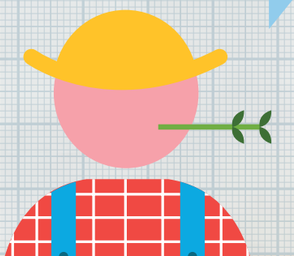
I'm Brad, and I've been using IOTA for a good few months now, making new stuff from some of the open data they've put out. I saw Graham's request, and it sounded like an interesting project. So I helped him adapt the Google docs code and build the acidity sensor with Arduino. We are now using this project to help farmers around the world with similar challenges.





7

It's working. My Google docs are being updated with live data, helping me pick the right kind of vegetables to grow alongside each other. This is the beginning of something new on our farm.

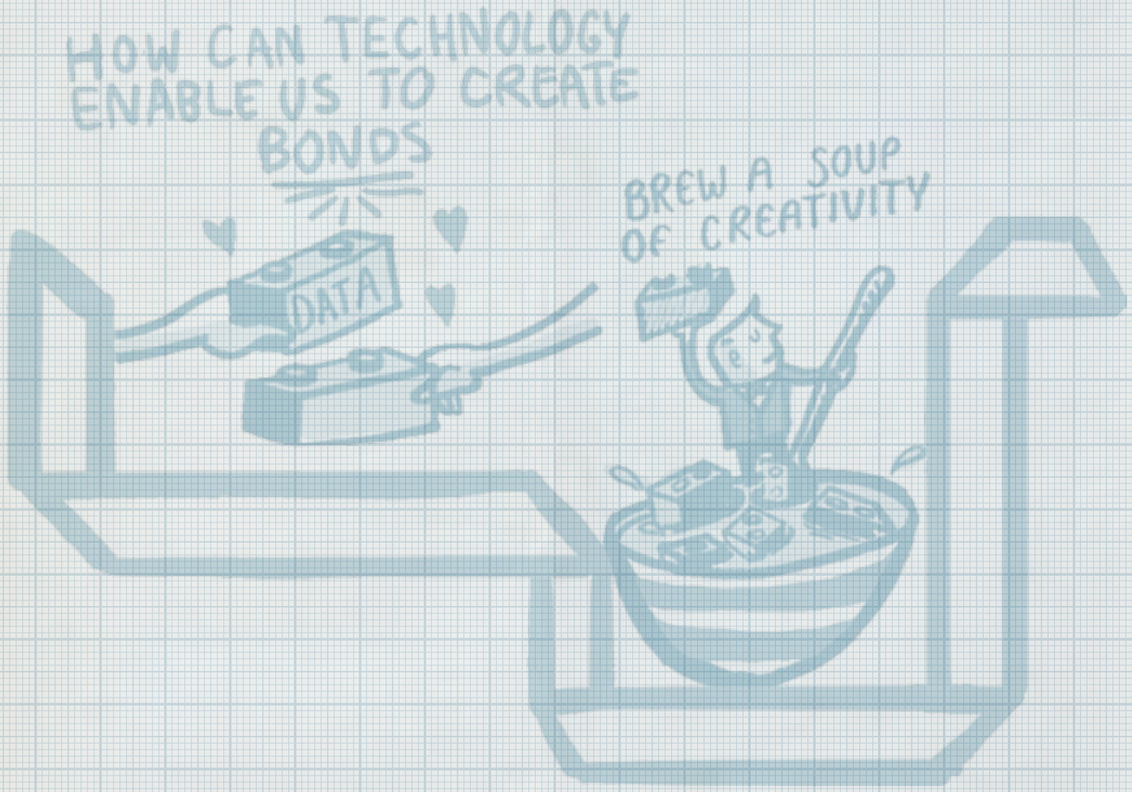


IOTA: tackling current sustainability challenges

The ‘internet of things’ has huge potential to empower users, but could easily end up widening the divide between the technologically literate and those unfamiliar with or outpaced by new technology. IOTA improves everyone’s technological literacy.

IOTA enhances our collective understanding of the world around us, allowing us to better monitor, analyse and look after the ecosystems, habitats and species on which we depend by making better use of the data available.

IOTA helps tackle the barriers of incompatibility between technologies. IOTA is a digital equivalent of the 20th century telephone switchboard, enabling end users to link any hardware with any software, mixing it with a data set to create new systems and solutions to everyday challenges. Small expert groups in the open source or ‘maker’ movements have already started creating open access alternatives.



Today’s signs of this concept’s potential

As an idea, the ‘internet of things’ emerged in the late 1990s from Kevin Ashton’s work on the use of RFID (radio frequency identification) in supply chain management. It is a neat and easy term to describe a system where the internet is connected to the physical world through a mix of sensors, tags and mechanisms, such as lights or motors.

In the words of architect Keller Easterling, the ‘internet of things’ pre-empts a future in which “the computer has escaped the box, and ordinary objects in space are carriers of digital signals.” With these technologies, it is possible for a rise in air pollution in Berlin to trigger a change in a thermostat in Barcelona, for example.

Other signs today that point to the IOTA concept include Usman Haque’s work with real-time data platform Pachube, crowdfunded web peripheral Twine, social media ‘push’ platform If This Then That and the widespread governmental interest in open data.

Active user communities such as Wikipedia are still in their infancy. Disintermediation and extreme scale collaboration can be seen in Kickstarter, the use of games such as Foldit in biological research, and the rapid growth in citizen science, community owned hacker spaces, and 3D printing technologies.

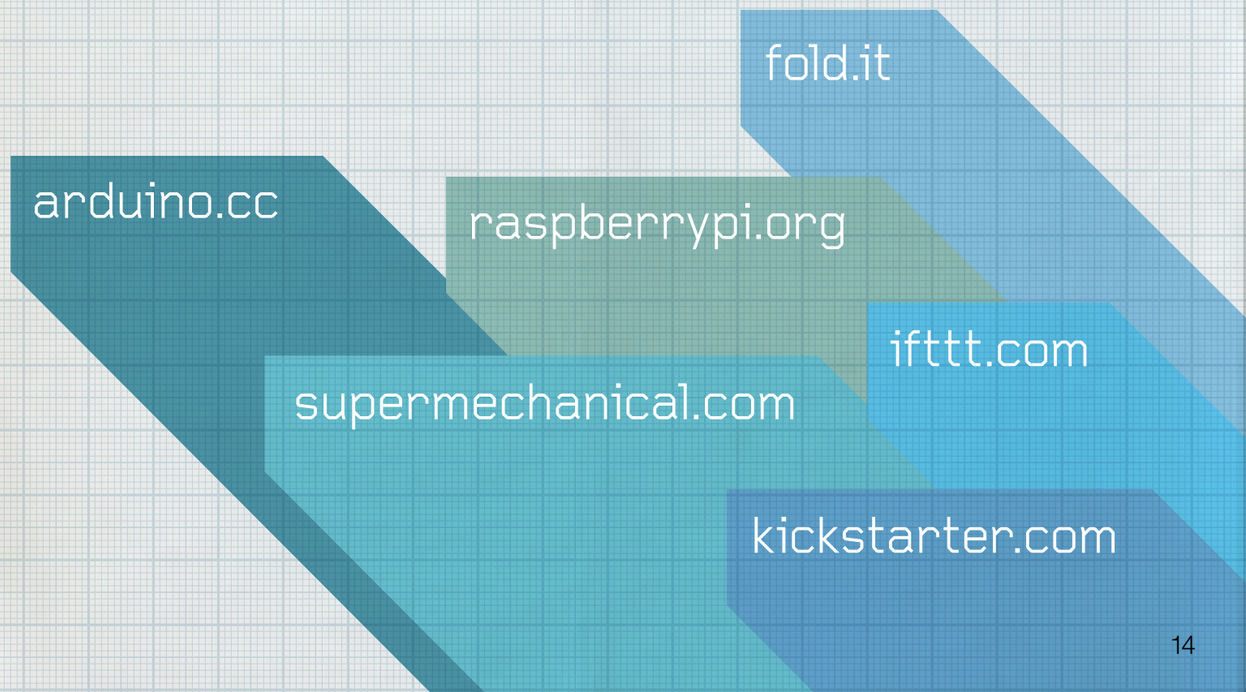
An appetite for improved technological literacy is evident in the huge success of the Raspberry Pi computer currently retailing at $25, and the Arduino LilyPad, a microcontroller board designed for wearables and e-textiles.

The links provided here are current examples of emerging ideas, trends and technologies that might relate to the broad area of FutureScapes concepts. These projects are not, however, affiliated with the FutureScapes collaboration.

Get involved

What would you use IOTA to create? Are you already working in this area? Do you think you could be a future partner? IOTA requires a series of partnerships between hardware and software providers, open data campaigners, and key groups from ‘maker’ cultures and the open source movements. In exchange, partners get access to a vibrant, active and international user base for brainstorming, research, insight and innovation.

To find out more, follow @better futures as well as #futurescapes on Twitter and connect with the FutureScapes community on Facebook or online.



Wandular

A device that evolves with you for your lifetime

Concept lead:

ENGAGE
BYDESIGN

engagebydesign.org

Wandular

Cradle to Cradle
Design avoids waste

Front view

Emotionally durable design
Made of long lasting materials that grow old gracefully

Side view

Cloud-based online interface
Software and services that will always be up to date

Longer life hardware
Modular and upgradable electronics

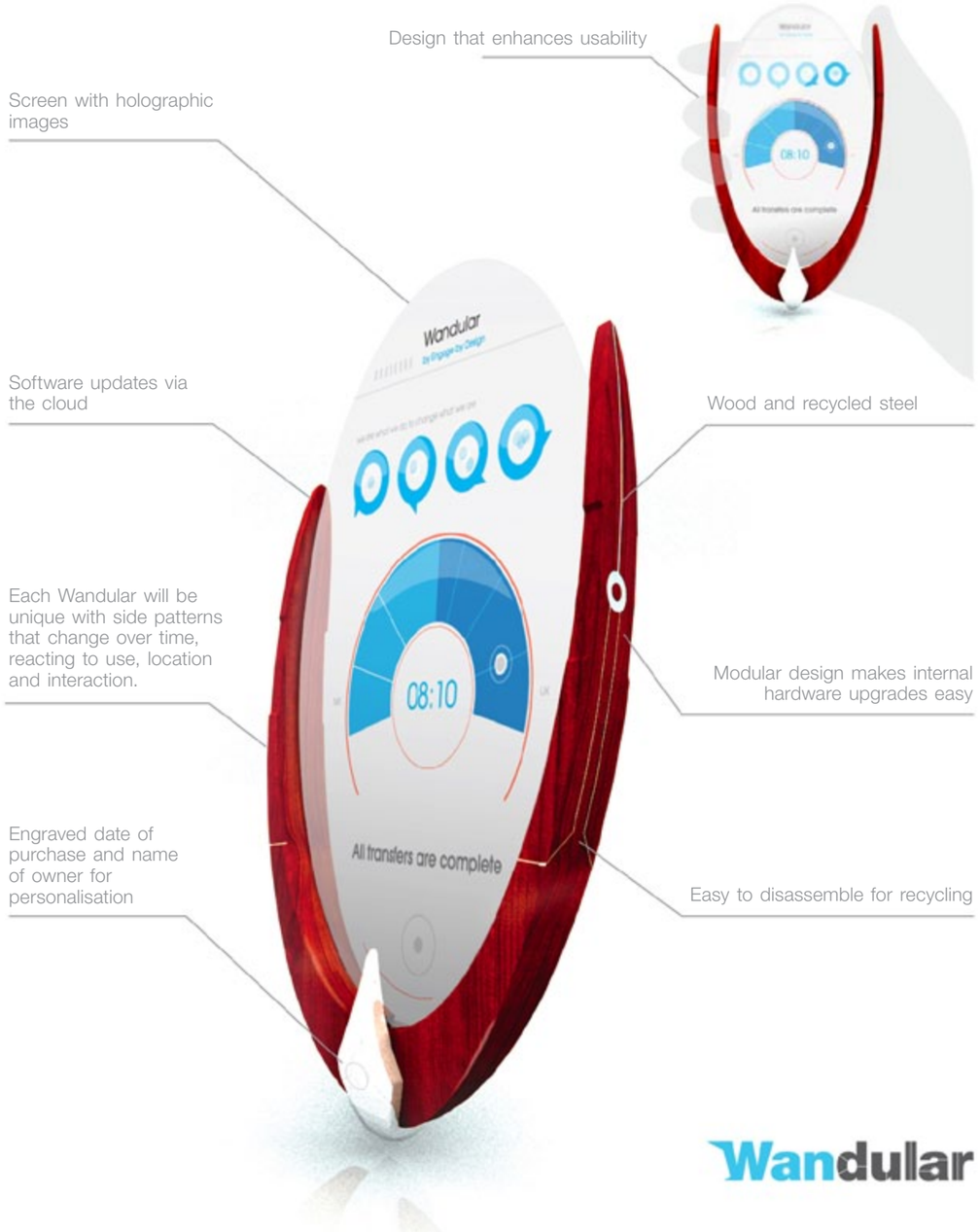
The concept in 2025

Wandular is a multi-purpose, modular device that grows with the user over a lifetime, generating a similar sort of affection and sense of personal connection as a favourite watch. A cloud-based, thin client modular approach enables a long product life span, whilst ensuring the user enjoys the latest software and hardware upgrades.

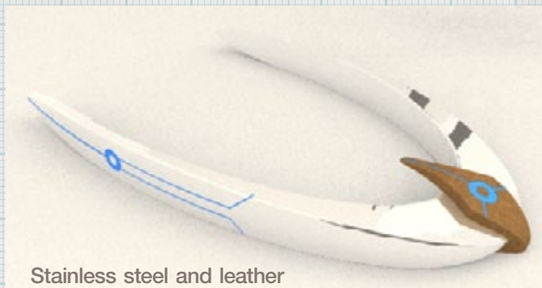
Modular add-ons will allow devices to be physically upgraded with everything from projectors to motion sensors and energy generation modules. This means the device can be personalised and its lifespan extended. Local 3D printing of modules using recyclable materials could satisfy users' thirst for novelty and customization whilst minimising the environmental footprint. This will also enable a closed loop system for adding new hardware to the device.

Integrating more emotionally engaging design elements provides a stronger connection between the user and the physical object, making it appealing over a longer time period.

Wandular prompts new cyclical service options and business models. From repair and maintenance services, module upgrades and monthly cloud subscriptions, Wandular enables businesses to build a different kind of relationship with the user. Rethinking how technology is 'made' can have new emotional, sustainable and financial benefits.

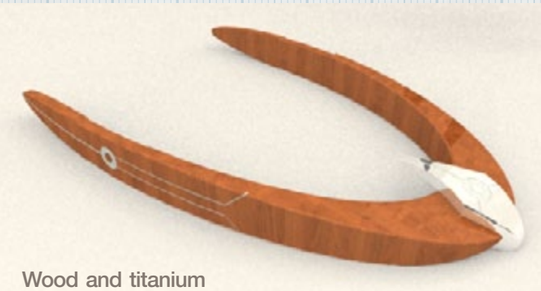


A thin client modular device
The processing power of a thin client device is in the cloud, to which it is constantly connected via the 2025 equivalent of WiFi or 4G. This means that a device can be upgraded remotely and has the capacity to evolve over time without changing the basic casing.


Stainless steel and leather

Leather and stainless steel

Titanium and wood


Wood and titanium

Emotionally durable design
Using ultra durable materials in the device helps to prevent damage, while allowing the technology to age elegantly. The ambition is to make designs that don't quickly feel dated and encourage users to grow more attached to their devices in the long term. The modular and customisable approach means creating technology better tailored to each individual.

Wandular: tackling current sustainability challenges

Doing more with less is vital in a resource-constrained world. Rapid advances in technology and a high rate of device evolution lead to a growing volume of electronics that requires recycling or responsible disposal. Businesses will have to contend with resource scarcity by reclaiming and recycling materials and dramatically improving material efficiency.

Integrated projector

Today's signs of this concept's potential

Longer-lasting devices are already appearing as concepts and prototypes. Designers are experimenting with building products using alternative materials, like the bamboo mobile phone by the Just ADzero project. There are also concepts like Mobikoma, made of tiny interlinked hi-res displays, and Modai, where memory and processors can be upgraded easily.

With a modular approach it is also possible to extend device functionality. There are already modules and sensors, such as heart monitors, being added to existing mobile devices to provide health and environmental benefits.

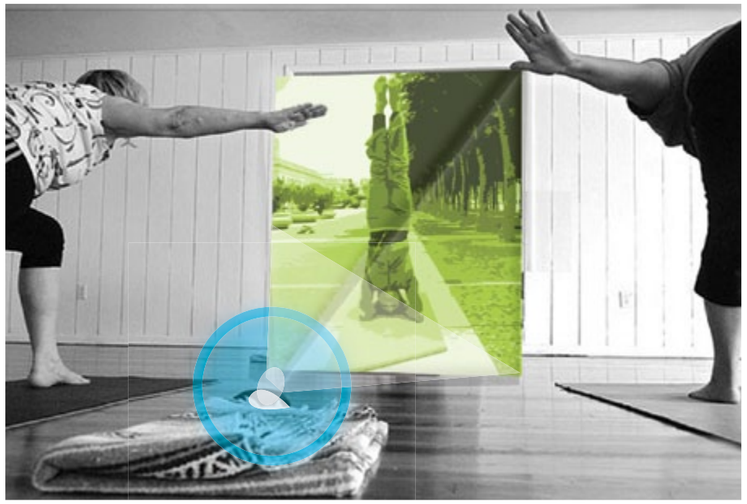
Opto-electronic contact lenses and brain–computer interface

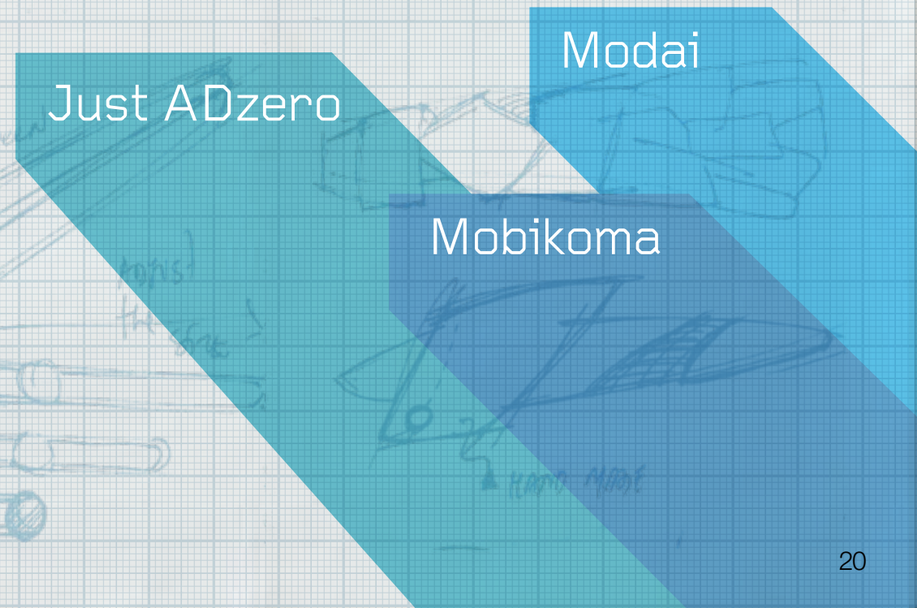
The links provided here are current examples of emerging ideas, trends and technologies that might relate to the broad area of FutureScapes concepts. These projects are not, however, affiliated with the FutureScapes collaboration.

Get involved

Changing the way devices are made and used isn't straightforward. The Wandular concept team wants your input, whether it's commenting on the thinking to date, highlighting similar projects out there or helping bring the concept to life. If you are interested in exploring how to change people's relationship with their electronic devices then get it in touch.

To find out more follow @better futures as well as #futurescapes on Twitter and connect with the FutureScapes community on Facebook or online.





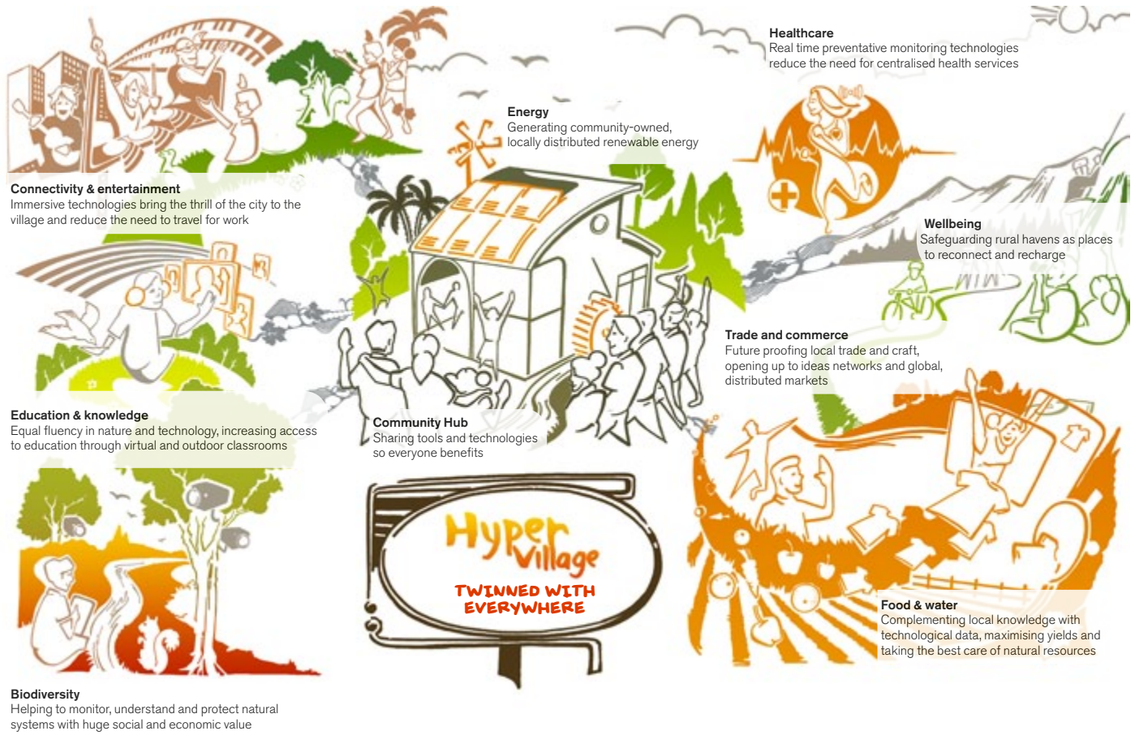
HyperVillage

Living a hi-tech, hi-nature life

Concept lead:

The Pipeline Project

pipelineideas.com



The concept in 2025

Predictions suggest that by 2050, 75% of the world's population will live in cities. But where does that leave rural communities, whose skilful management of natural resources are vital to everyone? HyperVillage is a thriving, self reliant but globally connected rural community – in the developing or the developed world – underpinned by the highest spec software and hardware, allowing for the best hybrid experiences nature and technology have to offer.

In the HyperVillage, the community's local knowledge is complemented by the latest monitoring and management technologies to maximise agricultural yields and take the best care of natural resources such as soil quality, water, forests and fisheries. Technology also facilitates the wider sharing of knowledge and intelligence, future-proofs craft and independent trade, and opens up micro economies to bigger distributed markets. Renewable energy is generated and shared via community owned energy hubs. Technology hubs make the latest innovation widely available and facilitate the exchange of technical expertise between generations, individuals and across distances.

Children growing up in HyperVillages are equally fluent in nature and technology, appreciating the value of both. Virtual and outdoor classrooms increase access to education for all without the need to travel. Preventative healthcare technologies reduce the need for centralised health services.

Immersive entertainment technologies enable HyperVillagers to enjoy the thrill of urban cultural events. In turn, city dwellers enjoy the unique experience of time in nature through eco-tourism and volunteering opportunities.

Economic opportunities and connectivity in rural areas will reduce the need to commute and work far away from home. HyperVillage uses technology to create the conditions for creative work to flourish. Rural workspaces that are highly networked and connected to others around the country, or even across country borders, means less need to travel to a city.

HyperVillage: tackling current sustainability challenges

Flourishing rural communities are critical for a diverse, healthy, sustainable society. These communities across the world come in different shapes and sizes, but face many similar challenges. As small, distributed settlements, they can lag behind in physical infrastructure such as transport, and access to services such as education and healthcare. The absence of economic opportunities can drive people into cities, fragmenting families and communities.

Rural communities' way of life and active stewardship of vital natural resources is not always acknowledged or appropriately rewarded. The countryside has an important role to play in terms of food production, protection of ecosystems, and providing a natural counterbalance to urban environments.

There is a need for greater connection, understanding and appreciation between urban and rural areas. Also within rural communities themselves as people continue to migrate to cities to seek, mainly economic, opportunities.

HyperVillage introduces a new model of rural community development that brings technology into the village, complementing and augmenting the local connection with nature. In parallel, rural communities can enjoy a new level of public services, economic opportunity and global connection – without the need to leave the area.

Today's signs of this concept's potential

Emerging social and peer to peer services highlight the desire for strong, local, independent rural economies. They encourage sharing via services like NeighborGoods, and community ownership and crowdfunding of hyperlocal businesses such as LuckyAnt.

The increasing demand for heritage and authenticity, as well as the surge in interest in craft businesses and skills, is reflected in the thousands of sellers offering handmade and personalized crafts on the popular Etsy marketplace.

Increasingly, there is an urgency for renewable and community energy programs using wind and solar capture. Governments are placing more emphasis on creating local food systems in order to provide national food resilience and security.

'Remote' schooling via radio has a strong track record in Australia's outback. Virtual classrooms take this process to a more immersive level. The Avon project involves 600 schools in 34 countries and enables students to learn and connect with their peers across borders and language barriers.

'Eco-tourism' has been growing steadily for some time, and has great potential to empower rural and less affluent communities if earnings remain in the local economy.

The links provided here are current examples of emerging ideas, trends and technologies that might relate to the broad area of FutureScapes concepts. These projects are not, however, affiliated with the FutureScapes collaboration.

Get involved

Could you and your neighbours live in a HyperVillage? How do you think your community would react to this concept? Can you help us find partners to take the next step? The HyperVillage concept team is keen to explore how technology and interconnectivity could help build a sustainable and thriving rural community where 'hi-tech and hi-nature' opportunities could lead to a genuine sustainable alternative to the buzz of urban living.

To get involved or share your ideas about prototyping a HyperVillage, follow @better_futures and #futurescapes on Twitter and connect with the FutureScapes community on Facebook or online.

Etsy

LuckyAnt

The Avon project

NeighborGoods

The Shift

An approach to designing and using technology that focuses on meeting human needs

Concept lead:

forum for the future

forumforthefuture.org

The concept in 2025

Throughout the FutureScapes project there was one theme we kept returning to: What might be the impacts in 2025 if our relationship with information and communication technology continues on its current trajectory? As technology becomes increasingly ubiquitous in our lives, how do we embrace the benefits of an 'always on' society without being driven to distraction?

'The Shift' seeks to address this theme. Forum for the Future wants to prompt a discussion about a different relationship with technology. They want to imagine a future where we don't assume that 'more' is better and to understand how society can get the most out of an information-rich world, without drowning.

Answering these questions will take time, and we will keep them alive as the FutureScapes project evolves. Forum for the Future also want to experiment with different ways of answering them.

How can technology in 2025...

...help us connect and collaborate without distracting us and reducing our ability to focus?

... align with human wellbeing rather than mistaking speed and frequency for progress?

... meaningfully connect us with other people and strengthen our relationship with the natural world?

The Shift: tackling current sustainability challenges

There has been an explosion of information and communication technology over the last 30 years and we have yet to fully understand the long-term impacts on our society, culture and wellbeing. On the whole, this technology has been beneficial but the emergence of 'digital fatigue' suggests our relationship with technology needs to change.

How we work & learn
More connectivity doesn't necessarily mean more efficient ways of working or learning. Our relationship with email is a good example of the challenge we face. It is a useful tool and many would be lost without it, but the volume of email we receive is becoming unmanageable. Several leading tech companies such as Atos have trialled partially banning email in an effort to increase productivity. However, does banning email constitute a solution?

Personal wellbeing
There is evidence that our current relationship with technology is impacting our physical and mental wellbeing. In addition to internet addiction, people are starting to question the effect of social media platforms on our mental health. This extract from 18 year old Zach Prochnik's blog is one example of this: "Now a website exists that exacerbates your most irrational social fears to the point of paranoia."

The constant connection with these platforms seems to be part of the problem. Professor Loren Frank has been exploring the effects of an 'always on' culture and says: "Downtime lets the brain go over experiences it has had, solidify them and turn them into permanent long term memories. Disconnection is therefore essential for formulating truly cogent ideas." How do we design systems that promote focus and connection in equal measure rather than having to force ourselves to focus?

Stronger connections with nature
Recent developments in technology have allowed us to get closer to the natural world and see it in a way previous generations would never have dreamed of. However, the same technology can also act as a barrier between us and our environment and we could be suffering from nature deficit disorder. The majority of us live in urban areas and our interaction with nature is often through our devices. How do we develop technology that can amplify our experiences and encourage us to connect directly with nature? This aspect is part of what we want to explore further in the FutureScapes concept, HyperVillage.

↘
An average user gets about 140 messages and spends 2.5 hours on email per day

↘
We delete almost half our emails without further action

↘
Only 10% of emails require 90mins work per day

↘
Checking email triggers a dopamine response making it harder to focus

Source: Mashable

"Downtime lets the brain go over experiences it has had, solidify them and turn them into permanent long-term memories. Disconnection is therefore essential for formulating truly cogent ideas."

Loren Frank

Today's signs of this concept's potential

A clear sign that this issue needs to be addressed is the range of products and services available to help us cope with the effects of our increasingly digital world. There are numerous programs and apps designed to reduce 'digital distraction' and help people focus such as GetConcentrating, MacFreedom and Phocus.

There are devices designed to simplify our interaction with technology. John's phone aims to be the world's simplest phone designed to eliminate complications, needless distractions and unnecessary features. For those looking for a more extreme option, there are websites like SuicideMachine that promise to erase your profile from all your social networks.

The majority of these responses are not tackling the root of the problem. If we have to go on holiday to 'internet free' places to escape the connectivity, then we need to explore a more sophisticated approach. How can we connect, yet avoid our lives being dictated by our inbox or the latest status update? What does technology look like that enables all the communication, but does not leave us unable to concentrate? How do we address these issues without losing the technological benefits?

There are signs that technology can bring us closer to nature. For example, Urban Edibles encourages people across the world to go foraging by mapping local sources of wild foods such as fruits and herbs.

The links provided here are current examples of emerging ideas, trends and technologies that might relate to the broad area of FutureScapes concepts. These projects are not, however, affiliated with the FutureScapes collaboration.

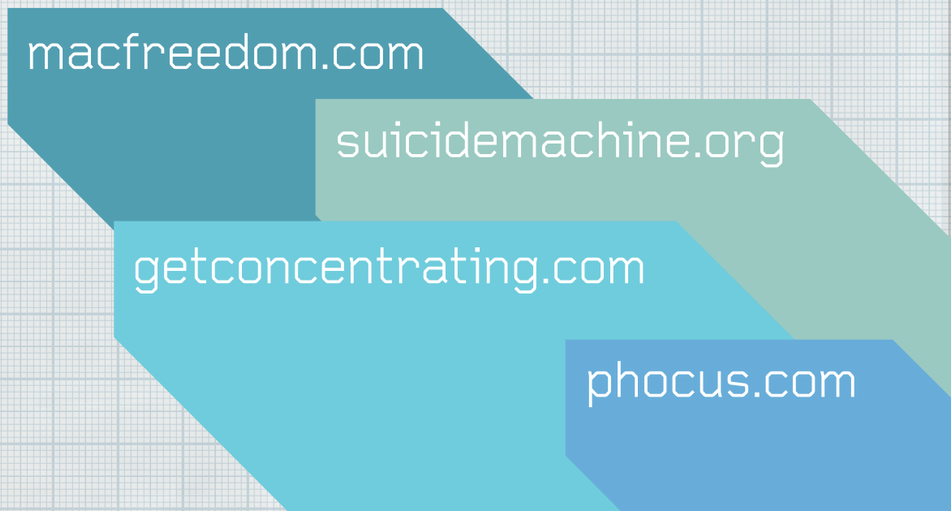
Get involved

This concept is complex, and it's harder to determine what the next steps might be. To create technology that is harmonious with human welfare we need to better understand people's relationship with technology. We'd like to hear from you: how does technology make you feel and where would you like to see change in the future?

To find out more follow @better_futures as well as #futurescapes on Twitter and connect with the FutureScapes community on Facebook or online

Forum for the Future Experiment
As a result of the FutureScapes project, Forum for the Future will start experimenting with how we might change our relationship around technology. They are going to be talking to their networks about this and hosting discussions.

Keep up to date or let us know you're interested through the www.forumforthefuture.org website.



June 2012

forum for the future

SONY
make.believe

www.sony.co.uk/futurescapes