

Volume 16, No. 1, February 2016

FUTURE NEWS

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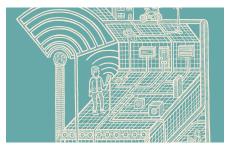
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WHAT WILL THE COLLABORATIVE ECONOMY LOOK LIKE IN 2025?

Economists have been arguing about how best to run the world for two decades. Following the devastation caused by the global financial crisis there has been renewed interest in alternative ways of conceiving of viable economic systems.

The second of our Futures Forums in 2016 will look at these alternatives in some detail, but in the meantime British charity Nest has created six possible future scenarios for the UK economy.

This is how they described their project, together with an outline of the six scenarios.

Looking ahead to 2025, each scenario highlights some of the key trends and assumptions that are currently driving forward this space, such as micro-entrepreneurship to environmental sustainability to local economic development. By no means exhaustive or exclusive, the scenarios are intended to stimulate discussion and prompt reflection on the future of the collaborative economy – and how we can influence this future.

We've heard a lot of about the transformative (and disruptive) potential of the collaborative economy in recent years. As more people look to participate in and benefit from collaborative platforms, we have reached a moment where simply understanding and promoting this trend is not enough. To make the most of the collaborative economy, we need to adopt a more longstanding, and considered view.

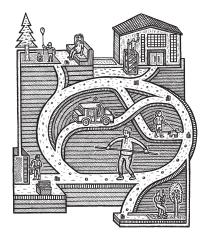
To stimulate discussion and prompt reflection, we created six possible futures for the UK collaborative economy in 2025. These scenarios are by no means exhaustive, nor are they exclusive – indeed, many could easily coexist in future. Instead, they seek to shed light on some of the key trends and challenges currently influencing this field.

Our starting point

While each scenario explores different possibilities and trends, they all build on a common set of assumptions:

In 2025, the UK has grown to nearly 70 million people – with London, the East and the South East regions experiencing the fastest growth. While there are more households across the UK, the average household is smaller and the majority of new households do not have dependent children. Fewer people are homeowners.

The UK population is older and more diverse, as the percentage of the people aged 65 and over increases by one quarter and immigration rises. Despite more jobs being available, labour market participation has decreased slightly. Service industries (in particular business services and IT sectors) become an increasingly significant portion of the labour market.



Rise of the micro-entrepreneur

From odd jobs to ridesharing, more people sell their skills and time on collaborative platforms. For some, this activity supplements a steady income. For those unemployed (and underemployed), small tasks and work activity through collaborative platforms constitute their primary source of income.

As more people enter micro-entrepreneurship, precarious and piece work becomes increasingly commonplace. Increased competition among micro-entrepreneurs sparks bidding wars that consistently descend below minimum wage.

The government raises the limit for non-taxable income, yet income tax evasion becomes more prevalent. Unemployed people are encouraged to join collaborative platforms, but risk losing benefits if deemed too successful.

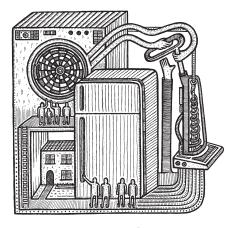
The Numbers

Since 2000, the number of businesses established with no employees and operating under the VAT registration turnover threshold of around £80,000 has almost doubled to around 2.7 million.

The number of people who declare themselves to be self-employed (including owner-managers and other forms of trading outside an employee structure) is currently the highest it has ever been – 15 per cent of the workforce, or 4.6 million people.

The rate of self-employment will likely increase as awareness spreads so that one in four of the workforce will not be employees in the next decade.

At present, workers on average state they would like to work an additional 12 hours a week – equivalent to an extra 43 million hours across the economy as a whole.



Hyper-productive goods

Asset owners enthusiastically take up the collaborative economy, resulting in a rapid increase of publicly accessible goods. People respond positively and short-term, access-driven models of consumption overtake individual ownership. Individual assets are used considerably more over their lifespan, while people have greater choice.

The mainstreaming of the collaborative economy creates demand for small-scale production of high quality, 'shareable' goods. UK manufacturing responds, resulting in modest domestic growth alongside a decline in total imported goods. Meanwhile, certain sectors – such as short-term home sharing and co-working spaces – help mitigate some of the realities of unequal economic development in the UK.

The Numbers

Around one in five households state that the value of the possessions in their homes excluding vehicles is less than £10,000 yet the average value of possessions in people's homes is nearer £35,000

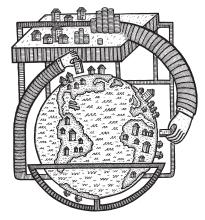
Presuming possessions owned by the bottom fifth are around the level that are essential for everyday living, around two-thirds of the total amount of physical possessions in Britain could potentially be traded at least for part of the time

The total value of physical assets held in people's main homes in the UK is around £850 billion, implying that the value of tradable goods currently situated in people's homes could be around £500 billion

Currently, around three quarters of households in England and Wales own cars and 15 million people in England and Wales - nearly 60 per cent of the workforce - travel to work by driving a car or a van. Over a million vehicles are not used for the daily commute that could be made

available to others, not to mention the vehicles that then spend most of the day parked outside a workplace

In 2011, there were 16 million households in England and Wales with at least one spare bedroom, of which half had two or more spare bedrooms. There are 1.7 million households currently on the waiting list for local authority housing in England when 8 million homes in England and Wales have two spare bedrooms



International monopolies

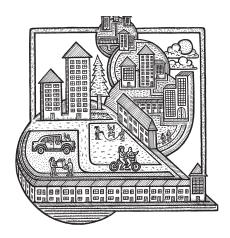
Through network effects, a handful of collaborative platforms rise to dominate different sectors and marketplaces – such as ridesharing, holiday rentals, odd jobs and household goods. Monopoly platforms are able to increase the overall productivity of assets on an international scale, which enables them to undercut smaller ventures and initiatives.

With minimal competition, monopoly platforms attempt to take a greater proportion of financial value generated through their platforms, by increasing transaction fees and manipulating cost algorithms. Competition regulators pursue abuses of market power, but are challenged to differentiate between business models (such as P2P, C2B, B2B, and B2C) and sectors. While certain monopolies receive stricter regulations, others are relatively unrestricted.

The Numbers

The current spending power of UK households is around £6.5 billion per week, or around £340 billion annually, including food, recreation and culture, clothes, communication and other household goods and services

The government's annual survey of e-commerce and ICT activity by businesses records that the current annual value of retail, hotel and accommodation e-commerce is around £30 billion



A million local economies

Local economies become increasingly selfsufficient and autonomous, drawing demand away from national and international markets. Alternative currency/time bank hybrids become the primary means of exchange within local communities. More people have a stake in local collaborative economy initiatives, thanks to a rise in community-owned assets and increased local employment. Unemployment falls and fewer needs go unmet within local communities.

Local councils connect with collaborative platforms to sweat their own assets (e.g. office space, car fleets). These schemes supplement local budgets and unlock new resources and non-financial value for communities. With reduced budgets and rising demand, local governments also begin to incorporate and experiment with collaborative models of service provision.

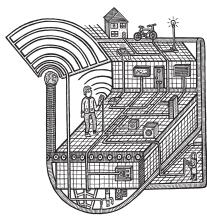
Local residents become directly involved in informing local priorities and budgets through crowdsourcing. Local councils and residents also realise more initiatives and projects through crowdfunding schemes. People can opt to pay tax by contributing time, goods, skills and knowledge that meet local demands.

The Numbers

The economic value of the voluntary activity that members of the public undertake in support of wider public service objectives is around £34 billion annually. Around £22 billion of this consists of formal volunteering, namely giving unpaid help through existing groups, clubs or organisations at least once a month. A further £10 billion consists of informal volunteering at least once a month. The remaining £2 billion comes from community action - giving unpaid help to support a community event, campaign or project run by neighbours

Around a fifth of local authority budgets in England are currently spent on social care at a cost of £22 billion of which around two-thirds is on adult social care

Similarly, the cost to local authorities of public health measures in England is nearly £3 billion, a budget line which might also become amenable to community action



On demand, convenient and embedded

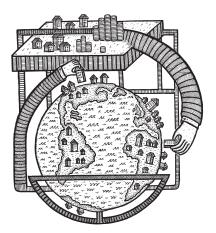
Collaborative platforms are replaced by a collaborative internet of things. Shared goods are embedded with chips, enabling people to easily access things as and when they need them. Infrastructures and supply systems within the collaborative economy also become considerably more efficient and predictive thanks to rich personal data – resulting in a parallel market where collaborative economy companies increasingly sell and trade user data.

People no longer have to invest significant sums upfront to access most goods and services. Consequently, public attitudes and habits surrounding personal savings and debt begin to shift. Education and finance opportunities also become instantly available on any device, leading to the decline of formal, centralised institutions (such as universities or banks).

The Numbers

At present, around 20 per cent of household expenditure goes on non-food goods and transport; higher productivity in goods and transport markets has the potential to reduce this, raising standards of living and increasing disposable income

Improved identity verification systems could reduce not only the estimated £3.3 billion losses annually through identity theft, but also the estimated £1.2 billion lost annually to taxpayers through defrauding of the benefit system



Increased sustainability

Climate change and resource depletion result in greater scarcity and rising costs for basic goods. Environmental sustainability and the circular economy become default concerns of the collaborative economy. Local food and energy initiatives are linked up through collaborative economy platforms, which minimises replication and helps spread surpluses to a wider market. Bike sharing and collaborative car schemes are also promoted to minimise personal car use.

Government provides incentives for collaborative economy initiatives that markedly reduce consumption as well as environmental impact; likewise, penalties and taxes are imposed on platforms that facilitate greater consumption or waste. With greater productivity of existing assets and reduced consumption, fewer foreign goods are imported (and domestic goods produced) in the UK.

The Numbers

The proportion of people with jobs who cycle to work in England and Wales is 2.8 per cent. In inner London it has risen over the last decade from 3.5 to 6.5 per cent; in Cambridge it is nearer 30 per cent

Assuming a massive expansion in bikeshare schemes in cities, we could see an extra million cyclists in greater London, and an extra 55,000 in Manchester

Given that the population of London is expected to rise by around 13 per cent in the next decade the number of additional cyclists would rise further, say, to nearer 1.2 million by around 2025 with commensurate benefits to household incomes and individual fitness and wellbeing

See more at: http://www.nesta.org.uk/ news/collaborative-economy-2025#sthash. HveRohJh.dpuf

FUTURISTS IN ACTION

INTRODUCING STRATEGIC FORESIGHT TO HR PRACTITIONERS



During 2015 the futures foundation entered into a strategic alliance with the Australian Human Resources Institute (AHRI). We anticipate entering into similar alliances with other professional associations as this year unfolds.



As part of the alliance, the foundation presented three webinars designed to introduce HR practitioners to the principles and practices of Strategic Foresight.

Each webinar ran for an hour and participants were

able to watch a Powerpoint presentation while listening to a prepared script after which they were able to ask questions or make comments.

The actual presentations are only available to AHRI members, but any futures foundation member who would like a copy of the slides and/or the scripts is welcome to contact the office (email: info@futuresfoundation.org.au).

The first webinar, entitled:
"Strategic Foresight –
what is it and why should
HR practitioners care?"
was in two parts. First it
focused on the need for
more comprehensive ways
of engaging with the future,

and second it introduced some of the simple tools through which futurists help their clients navigate their way into the future.

The second webinar encouraged participants to systematically engage in scanning their environment for information and knowledge that might

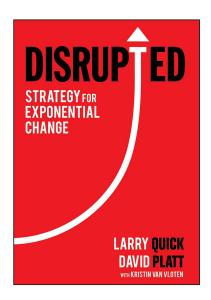
be relevant to creating the future. Doing these environmental scans regularly and effectively is one of the major ways in which high-performing enterprises remain ahead of their competitors.

The third webinar also focused on a commonly used foresight tool – using alternative future scenarios to create preferred futures. A number of examples were quoted, including the Shell Oil Company which has been using scenarios for over 50 years, and the so-called Mont Fleur scenarios which are credited with helping create modern South Africa.

A further series of webinars for AHRI members are planned for 2016.

Disrupted

Strategy for Exponential Change by Larry Quick and David Platt with Kirstin van Vloten Published by U2B Pty Ltd t/a Resilient Futures, 2015



Helping people navigate their way through uncertain futures is what futurists do. One reason for the inevitable uncertainty inherent in the future is the speed at which so much of the modern world is changing. Far from the simple incremental change that most of our ancestors lived through, much of the modern world is changing exponentially. And as the first quote in this book (from Nicholas Negroponte twenty years ago): "People don't get exponential".

Book Review

by Charles Brass - Chair, futures foundation

Disrupted by Larry Quick and David Platt sets out to convince its readers of the ubiquity of exponential change and then to offer some ways of managing its consequences.

The book begins by explaining the concept of exponential change and why it causes such disruption. Then in the remaining seven chapters it sets out the "Strategy in Action" process which the authors and their colleagues at Resilient Futures have been using and developing for over 20 years.

Strategy in Action (SIA) is a five step process, but one that moves both forwards and backwards (following the "Adaptive Cycle" developed by 'Buzz' Holling in the 1970s) to ensure that action is followed by reflection and learning.

The SIA process is shown in this diagram:

THE SIA WHEEL REVOLVES CONSTANTLY AND IN REAL-TIME

IMMEDIATE

Strategic
Opportunity-Risk

Capabilities

Conditions

The Sia Algorithm
The five precepts of Strategy in Action – Conditions,
Strategic Opportunity-risk, Sustainable Value Generation,
Capabilities and Catalytic Action

and is conceived of as a wheel that revolves constantly.

The five steps in the SIA process are:

- reading, understanding and continually monitoring immediate and emergent conditions
- perceiving the Strategic Opportunity-Risks (SOR) that those conditions reveal
- identifying the sustainable value you and your team can generate out of those SORs
- determining the capabilities that allow you and your organisation to generate the sustainable value available within those SORs
- developing catalytic actions that build and launch the capabilities driving sustainable value generation (p68).

and the book describes these in greater detail, giving case study examples of their use in various organisations.

The first and last of these SIA stages should be well known to practising futurists – scanning the environment and turning analysis into action. The real interest in this book is in the middle three stages.



The key stage in the second stage is the recognition that risk and opportunity are two sides of a single coin – and hence the creation of the acronym SOR for Strategic Opportunity-Risk.

Quick and Platt lobby hard for their clients to actively pursue SORs. For the many risk averse managers in the world this must present a challenge; but the authors persuasively argue that in a disrupted world there is no real alternative. They provide a quote from Winston Churchill to make their point: "A pessimist sees the difficulty in every opportunity, an optimist sees the opportunity in every difficulty" (p124).

Successfully seeing and seizing SORs is difficult to do inside siloed organisations, and the authors provide a detailed case study of Apple in 1997 to underline the point that while one person (in this case Steve Jobs) can identify the need for change it takes an entire organisation to successfully navigate it.

Then the authors move on to the notion of generative sustainable value. After a detailed discussion of just what value means in an organisational context, the authors come up with this picture of its various elements:

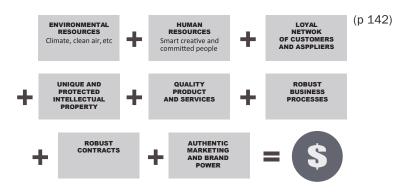


Diagram 5.1 | THE SIA VALUE EQUATION

Financial gain is a real but relatively small input and output in the SIA value equation. There are a diversity of factors that need to be valued before realizing sustainable financial gain.

Next they explore the key capabilities that any organisation must be able to demonstrate if they are to succeed in a disrupted world. After exploring the connections between capability, capacity and competence the authors conclude there are three general classifications of capability: general, specialised and value adding. Then they argue that all three are essential, and that differing organisational systems are required to generate and cultivate each type of capability.

Throughout the book the experience of Kodak is a recurring theme. Many people may not know that the first digital camera was developed in a Kodak lab in 1975 (the book even has a photo of the engineer responsible, Steve Sasson, receiving the national medal of science and technology from the US president in 1990) but the leaders at Kodak weren't interested and by 2012 Kodak was bankrupt.

The last chapter of the book explores this and other case studies, and looks closely at what needs to be done to embed SIA thinking into modern organisations.

It is clear that the authors and their colleagues have a long history of helping their clients navigate their way into uncertain futures. They should be thanked for sharing their insights with the rest of us.

Signals in the Noise

THE 40 MOST EXCITING INNOVATIONS OF 2015

From the first-ever \$9 computer to lab-grown rhino horns, 2015 has been filled with innovations that give us hope for the future.

The TI Innovation team compiled a list of their favourite world-changing products and ideas that made significant progress over the last year. They saw scientists make progress on some of the most intractable diseases, buildings become smarter, and gender take centre stage.

Some of these innovations are still nascent, while others have already had a big impact. All have the potential to change the way we live.

A sample of these 40 innovations can be found below. The entire article can be found at: http://www.techinsider.io/the-most-exciting-innovations-of-the-year-2015-10

Ikea makes a much better shelter.

Ikea brought its ethos of simple, well-designed products into a new genre: refugee shelters that have already been deployed across the planet, from Iraq to Ethiopia.

Better Shelter, a collaboration between the Ikea foundation and the UN, is a modular, flat-pack, solar-powered shelter that just takes four hours to put together and can last up to three years.

The 188-square-foot shelter accommodates five people. It's a lot nicer than the tarp-covered metal frames found in most refugee camps, and it scales up too.

"The modular design enables the shelters to be linked together, creating larger structures," Better Shelter's Märta Terne said in an email. "In Nepal ... a number of shelters were linked together at the gable walls forming longer structures providing space for both a reception area, storage and an examination area at the back."

Better Shelter will deliver 10,000 shelters this year.

An algae-based gel stops bleeding in seconds.

VetiGel, an algae-based gel that can stop bleeding in just 12 seconds, is set to start shipping to veterinarians this fall. After further testing, humans may get it, too.

Created by biotech company Suneris, the gel quickly seals wounds and stops traumatic

bleeding, the leading cause of preventable death in trauma victims.

Joe Landolina, Suneris' CEO, was just 17 when he invented VetiGel. Five years later, Suneris is about to ship its first batch. VetiGel takes the fibers inside your everyday algae plant and injects them into a wound. The fibers link together like LEGO blocks within seconds, forming a leak-proof seal and stopping the bleeding process. VetiGel doesn't cause clots and it integrates over time into the damaged tissue, so it never needs to be removed.

"The ability to stop a bleed quickly with no applied pressure is a game-changer," says Landolina.

This \$9 computer is incredibly good.



Hardware is expensive. Chip is not. The world's first \$9 computer, which began shipping this fall, can be used for everything from editing spreadsheets to learning to code.

All you have to do is connect it to a monitor, keyboard, and mouse with adaptors, and you're



in business. Amateur inventors can also create new gadgets, like mobile printers or media players that use Chip as their processors, keeping the overall cost of parts down.

Dave Rauchwerk, CEO of Next Thing Co., previously created a GIF-generating camera powered by the ever-popular Raspberry Pi, but the microcomputer's \$35 price tag drove up the cost of the camera beyond what's reasonable for a toy.

Rauchwerk decided that in order to get the cost down his team needed to create a new computer. Chip is a Linux-based mini-PC with a 1 gigahertz processor, 512 megabytes of ram, and four gigabytes of storage. All those specs add up roughly to a low-end smartphone with WiFi and Bluetooth.

Ever since Next Thing Co. first started shipping units to its Kickstarter backers in October, tinkerers have been sharing their progress and ideas. "This will be my first ever foray into working with small devices," one backer writes. We suspect she's not alone.

The first 3D printed drug is here.

This summer, the FDA approved the first 3D printed prescription drug, a pill for epileptic seizures called Spritam. Eventually, this technology could revolutionize the pharmaceutical world, making it possible to create highly customized drugs.

"This is a milestone in the entire field," says Michael Cima, an engineering professor at MIT who helped develop the 3D printing used to make Spritam. "You're making millions of the same thing. The benchmark is now higher for all these 3D printing technologies,"

One immediate advantage of 3D printed drugs is that they are porous and will dissolve in your mouth with just a sip of water, making them easier for people who have difficulty swallowing — such as people who are having a seizure. It's possible to make porous drugs the traditional way, but it's a lot harder and more expensive.

Looking ahead, the ability to print drugs might allow for more customized medication. Other researchers have theorized that 3D printing could be a cheaper way to produce drugs for the developing world.

This solar-powered aircraft could bring internet to the world.



Facebook's plan to bring internet access to the developing world had two breakthroughs this summer: prototyping a solar-powered, internet-delivering aircraft, as well as a lab-tested laser that can transmit data from that aircraft at 10 gigabits per second.

Together, the two could offer wireless internet to even the most isolated regions.

Aquila, as the carbon-fiber plane is named, has the wingspan of a Boeing 737 and one-third the weight of an electric car. It can fly for 90 days straight at an altitude above commercial air traffic and weather patterns and beam connectivity down to people using lasers.

"We started the Connectivity Lab at Facebook to try to change this paradigm by developing a new range of technologies to help accelerate the process of bringing connectivity to the unserved and underserved," Yael Maguire, the company's engineering director, tells Tech Insider.

Facebook says test flights for its aircraft should begin later this year. Meanwhile, the company also recently announced a deal with French satellite operator Eutelsat Communications that will use satellites to beam internet across 14 countries in Africa.

Thirsty concrete can absorb 880 gallons of water a minute.

Earlier this year, British materials company Tarmac unveiled a seemingly magical solution to flooding: a porous concrete that absorbs 880 gallons of water a minute, potentially saving vulnerable regions from roads overrun by water.

Topmix Permeable concrete is made out of a coarse, pebble-like material called no-fines concrete, which contains small gaps in the surface, allowing water to quickly pass through.

Craig Burgess, product-development manager at Tarmac, says typical concrete is porous enough to let through 300 millimeters of water an hour. Topmix lets through 36,000 millimeters, which means it can divert huge quantities of water that might otherwise cause flooding.

So far, Topmix has been installed in a golf course and car park in the UK. It's for sale across the country, but we have a feeling its reach could be much larger.

CRISPR-Cas9 unlocks the building blocks of life.



This year, scientists modified the building blocks of life using CRISPR, a gene-editing tool that gives us the ability to rewrite DNA, ushering in a new era of disease prevention and elimination, genetically edited plants and animals, and possibly even "designer babies."

The CRISPR-Cas9 system, dubbed "the biggest biotech discovery of the century" by MIT, is essentially a "search-and-replace" tool for the genome. Don't want the code that's related to a particular disease? The tool can be used to snip or potentially swap it out.

"We're basically able to have a molecular scalpel for genomes," Jennifer Doudna, a biologist credited as one of the co-discoverers of this genetic editing system, told Tech Insider. "All the technologies in the past were sort of like sledgehammers ... This just gives scientists the capability do something that is incredibly powerful."

As Dustin Rubinstein, the head of a lab working with CRISPR at the University of Wisconsin at Madison, told us, genetic editing could transform everything from cancer research and neuroscience to chemical engineering and even energy production.

"You're only limited by your imagination," Rubinstein said.

The Omni Processor makes clean water profitable.



Who could forget the image of Bill Gates drinking poop water?

It was a cold January morning, and Gates was demoing the Omni Processor, a new Gates Foundation-funded water purifier made by Janicki Bioenergy. The machine turns human feces into drinkable water and valuable energy.

The Omni Processor is already being tested in Dakar, Senegal, and Janicki is slated to sell the first full-size processor, which can convert 14 tons of sewage into electricity and drinkable water each day, to a utility company in Dakar next year, with more communities to follow.

The key to the machine's success is its ability to make money by creating power.

"If you go into developing countries, it's not the government providing services," says Gates Foundation's senior program officer, Doulaye Koné. "It's entrepreneurs."

So the Gates Foundation is helping create a system where the profit margins are right for entrepreneurs who clean out the latrines in Dakar neighborhoods to sell human waste to the utility company that owns the Omni Processor.

Sanitation is usually a money-losing proposition in the developing world, which is part of why governments and corporations aren't invested in making it better. But if you can make money on sanitation, suddenly it's a public health boon that pays for itself.

A tableware set makes it easier to eat with Alzheimer's.



Eatwell is a new tableware set that uses bright colors, ergonomics, and clever design to make eating with cognitive decline easier. After garnering attention as the winner of the 2014 Stanford Design Challenge, it's finally being released this month.

By 2050, an expected 131 million people will live with dementia, mostly due to Alzheimer's disease. There is no cure, but smart design can restore some of the confidence that disease takes away.

Creator Sha Yao designed Eatwell's bowls with a slanted basin that collects food on one side, so contents can be easily scooped up. Spoon handles are curved to fit the natural alignment of the human hand, and an antitipping cup includes a wide, sturdy base.

Yao selected shades of blue, red, and yellow because research shows that a person with dementia can consume 24% more food and 84% more liquid when they are served in brightly colored containers.

Brookdale, a leading assisted living provider, will host a pilot program in its facilities for large-scale user testing later this year.

Giving people free money actually works.



Basic income — a system in which people receive unconditional salaries, regardless of whether they have a job — quickly spread across the Netherlands in 2015 and is now poised to expand even further.

If implemented properly, it could eliminate extreme poverty and cut down on the bloated bureaucracy of the welfare state.

Less than two months after the University of Utrecht, in the Netherlands, launched a program to give welfare residents a regular, no-strings-attached income in June, similar programs expanded to nearly two dozen nearby cities.

In 2016, Switzerland will begin discussing the feasibility of a basic income system.

Thanks to these programs and more, basic income as a system has never been more widely discussed, says professor Almaz Zelleke at NYU Shanghai.

"The Utrecht pilot contributes to that conversation, which is a good thing," Zelleke says. "But ultimately, it's the conversation about what a basic income could mean if permanently adopted on a national or regional level that will bring about change, not the results of another temporary pilot."