# High tech digital health solutions enabling high touch relationships
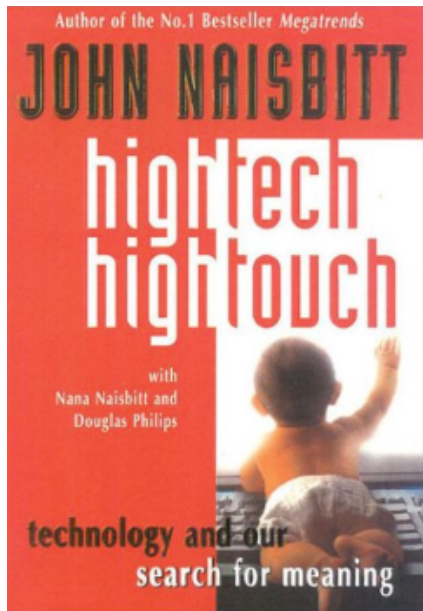
Bob Gann

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# High tech, high touch



"At its best, technology supports and improves human life; at its worst, it alienates, distorts and destroys"

John Naisbitt, *High tech, high touch: technology and our search for meaning* 1999

# Is technology out of step with emotion?

God-like technology
Medieval institutions
Paleolithic emotions

E.O. Wilson
*The origins of creativity*, 2018

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# Technology downgrading humans

While companies have been **upgrading technology,** they've been **downgrading humans:**

⬇ Shortening attention spans

⬇ Rewarding outrage over dialogue

⬇ Addicting children

⬇ Polarizing the democratic process

⬇ Turning life into a competition for likes and shares

*Center for Humane Technology www.humanetech.com*

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# Check out free shopping

**Amazon's automated grocery store of the future opens Monday**

Jeffrey Dastin

4 MIN READ

SEATTLE (Reuters) - Amazon.com Inc (AMZN.O) will open its checkout-free grocery store to the public on Monday after more than a year of testing, the company said, moving forward on an experiment that could dramatically alter brick-and-mortar retail.

Welcome to roboshop - Singapore's first cashless, automated supermarket

**Express shopping: No more checkout lines in Kerala's first automated supermarket**

Watasale is India's first checkout-free store, where the bill is autogenerated and automatically deducted from the store's app.

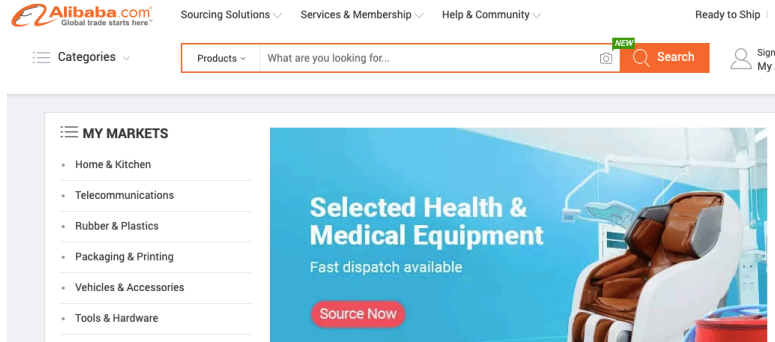Shilpa S Ranipeta | Thursday, September 13, 2018 - 12:16

Follow @Shilparanipeta

**Sainsbury's mimics Amazon with launch of 'first' checkout-free store in London**

Supermarket's SmartShop tech will let customers skip the queue

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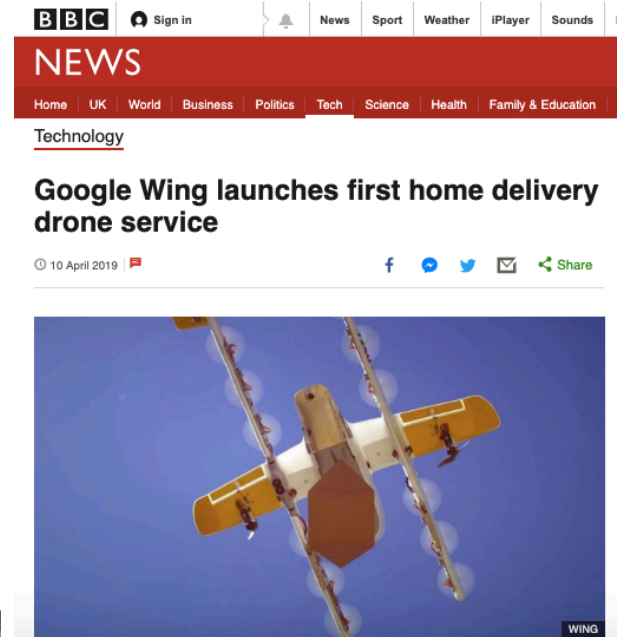**H**ospitals & Health Services

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# Shop online, delivered by drone



Manna from heaven

How e-commerce with drone delivery is taking flight in China

*Chinese e-commerce giant JD.com is investing in drones to bring online shopping to a 600m-strong rural population*


Google Wing launches first home delivery drone service

10 April 2019

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# Driverless transport



**Self-driving taxis to be launched in London by 2021, Addison Lee says**

Firm announces alliance with self-driving software company Oxbotica

Shehab Khan | @ShehabKhan | Monday 22 October 2018 08:59 | |

Like Click to follow The Independent

An autonomous self-driving vehicle being tested in a pedestrianised zone in Milton Keynes ( Getty )



**Ugly But Useful: Stockholm Introduces Driverless Buses**

Heather Farmbrough Contributor

**TWEET THIS**

So driverless buses and cars in Sweden seem a no-brainer. Think how many more hours you could spend on your startup as you cruise your autonomous vehicle down the long and empty motorway through the forests.



© VCG via Getty Images

China's internet giant Baidu has started mass producing the country's first autonomous minibus as the company prepares to roll them out in tourist spots and airports

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# Robot chefs



**Restaurants are now employing robots – should chefs be worried?**

From burger-flipping robots to android waiters, automated systems that can cook and serve are no longer the preserve of sci-fi

▲ Flippy, a robot cook that works at Caliburger in Pasadena. Photograph:



**Will Chefs Lose Relevance In A Robotic Kitchen?**

Naveen Joshi Contributor
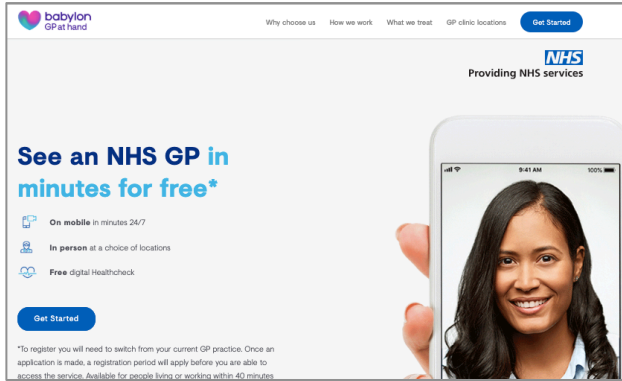COGNITIVE WORLD Contributor Group ⓘ
AI & Big Data

*It's quite unbelievable that robots have reached our kitchens already. Days are not far away when we will encounter a robotic kitchen in nearly every restaurant and household, where robot chefs will cook delicious foods for us on demand.*

Have you read, *A Room of One's Own*? If so, then you might be aware of the famous quote by Virginia Woolf, who says, "One cannot think well, love well, sleep well, if one has not dined well." True, right?



news.com.au  National  World  Lifestyle  Travel  Entertainment  Technology

Almost one third of people admit they use their phone at every meal. Picture: iStock  *Source:istock*

# High tech healthcare



Digital primary care with video consultation driven by artificial intelligence
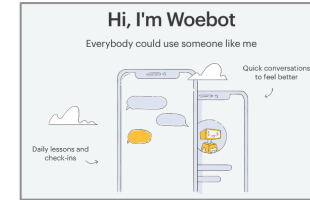


**NHS to sign up patients for 'virtual' A&E in tech revolution**

**Exclusive: Patients checking systems will be told by chatbot if they need to go to hospital**
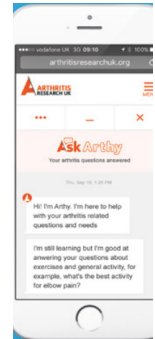
▲ Patients using technology to communicate with the NHS would avoid long queues in A&E. Photograph: Dan Kitwood/Getty Images

Millions of patients will be encouraged to use digital technology to assess how ill they are under a groundbreaking initiative by a leading NHS hospital, as part of a drive to reduce the use of A&E and outpatient appointments.

Online triage and virtual consultations to manage demand in accident & emergency services



Online support using chatbots

# Are we eliminating the human?



**MIT Technology Review**

**Connectivity**

## Eliminating the Human

We are beset by—and immersed in—apps and devices that are quietly reducing the amount of meaningful interaction we have with each other.
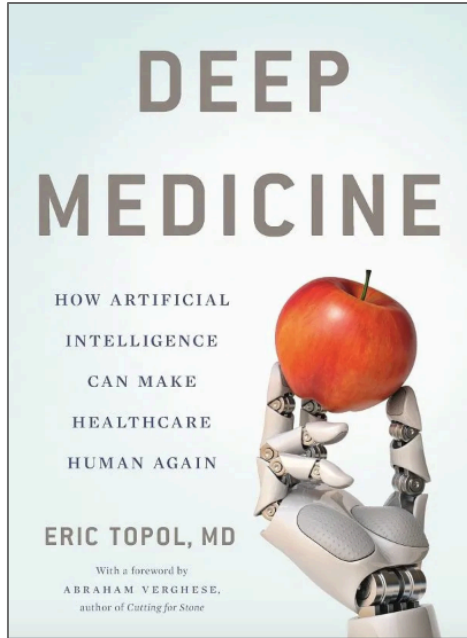
by **David Byrne**                    Aug 15, 2017

"We are beset by – and immersed in – apps and devices which are quietly reducing the amount of meaningful interaction we have with each other".

David Byrne 2017

# Or can high tech make healthcare humane?



Technology can make medicine more efficient, for example:

- Analysing scans and screening images
- Carrying out repetitive tasks
- Decision support
- Designing more personalised care
- Robotic surgery

**"The rise of machines has to be accompanied by heightened humaneness — with more time together, more passion and more tenderness — to make the 'care' in healthcare real".**

# Tech for human connection: five case studies from Wales and Cornwall



- Southwest of the United Kingdom
- Predominantly rural
- Ageing populations
- Areas of social deprivation
- Poor transport infrastructure
- Community assets (village shops, pubs, post offices, libraries) closing
- Poor broadband and mobile phone connectivity

*Working to engage people who may be digitally excluded*

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# The digital inverse care law

## THE INVERSE CARE LAW

### JULIAN TUDOR HART

*Glyncorrwg Health Centre, Port Talbot, Glamorgan, Wales*

**Summary** The availability of good medical care tends to vary inversely with the need for it in the population served. This inverse care law operates more completely where medical care is most exposed to market forces, and less so where such exposure is reduced. The market distribution of medical care is a primitive and historically outdated social form, and any return to it would further exaggerate the maldistribution of medical resources.

*Lancet, 1971*

- Those who most need healthcare are least likely to be online
- We face a new "digital inverse care law" where technologies widen inequality

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# Leave no-one behind



World Health Organization

Global Strategy
on Digital Health
2020-2024

"The strategy will promote the ethical and appropriate use of digital technologies

– to bridge the digital divide and ensure no-one is left behind"

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# Loneliness: a public health crisis

- More than 75% of women and a third of men over 65 in Wales live alone. 25% say they are lonely
- Lonely and isolated people tend to smoke and drink more, have a poorer diet, and skip medication
- Falls among lonely and isolated people tend to go unnoticed and unreported
- Lonely and isolated older people are at an increased risk of dementia
- Loneliness can have the same health impact as living with a long term condition or smoking 15 cigarettes a day

*Inquiry into loneliness and isolation. National Assembly for Wales, 2017*

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# Being online can promote social activity & human connection

People who use the internet regularly are more likely to:

- go to a cultural event

- take recreation outdoors

- take part in sport

- volunteer in their community



Digital Participation and Social Justice in Scotland

*Digital participation and social justice. Carnegie UK Trust, 2016*

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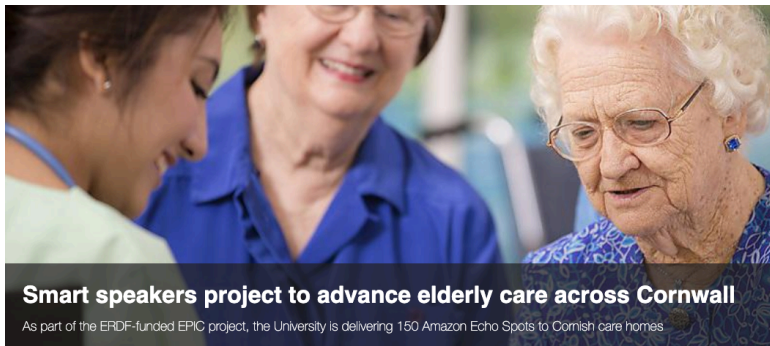**H**ospitals & Health Services

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# 1. Remote consultations can be a humane environment for care



- Familiar technology (eg Skype)
- Patients spared cost, stress, time and inconvenience of travel
- Can support a more personal relationship – invited into home
- Humane environment, even for breaking bad news

*Wales: CARTREF (Care Delivered with Telemedicine to Support Rural Elderly and Frail)*
*London: Scaling Up Virtual Consultations at Barts NHS Trust*

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# 2. Smart speakers can open up digital world



**Smart speakers project to advance elderly care across Cornwall**

As part of the ERDF-funded EPIC project, the University is delivering 150 Amazon Echo Spots to Cornish care homes

**92-year-old Pat uses Amazon Echo and iPad to boost her wellbeing**

RNIB 'Technology for Life' service helps blind and partially sighted people. This builds on partnership work between Digital Communities Wales and RNIB Cymru.

- Voice activated devices including Amazon Echo (Alexa) & Google Home
- People who lack digital skills or have sight or dexterity problems can use voice recognition
- Set up spoken reminders for medication, appointments etc
- Access websites, apps and social communication

*EPIC: eHealth Productivity & Innovation in Cornwall*
*Digital Communities Wales*

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# 3. Wearables can motivate physical activity & digital confidence



- Older people in Wales provided with Fitbits had increased physical activity, and were motivated to improve digital skills and confidence
- Joining communities increased social interaction
- Doctors in Swansea Bay prescribing Fitbits and digital health course
- New report from Social Market Foundation advocates social prescribing of wearables on NHS to equalise access

*Delivering digital health for all. Social Market Foundation, May 2019*
*Population health in a digital age. Public Health Wales, May 2019*

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# 4. Robopets can improve wellbeing of older people in care homes



Image provided courtesy of and copyright to Sense Medical limited.
www.paroseal.co.uk

Paro the robot seal reduced anxiety in people with dementia

*EPIC: eHealth Productivity & Innovation in Cornwall*

- First systematic review of therapeutic
- robotic animals
- Robopets increased social interaction between residents, family members and staff
- Reduced blood pressure & improved social and psychological functioning
- Lower maintenance and lower risk of harm to patients than live animals

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# The Simpsons: Replaceable You



*"In this 2011 episode, Bart creates a mechanical baby seal for his science project. It brings joy to the seniors at the Springfield Retirement home".*

# 5. Virtual reality can help people connect with a positive world



- Digital Heroes programme in Wales
- Intergenerational mentoring between schoolchildren & care home residents
- Case study at Woffington House Care Home, Tredegar
- Reduction in anti-psychotic medication and falls
- Ambulance call-outs reduced by 28%

*Digital Communities Wales*

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# For more information

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Twitter: Bob_Gann

Cornwall
www.plymouth.ac.uk/research/epic

Wales
www.digitalcommunities.gov.wales



Digital Inclusion in Health and Care in Wales

The potential for digital inclusion to improve the health and well-being of older people and people with a limiting long-standing illness, disability or infirmity in Wales.