



PARADIGM SHIFT

5G

## About

# GOOD FUTURES

Introducing Good Futures, the **new subscription from Good Innovation** designed to help charities get to the 'so what' behind trends and frame the current & future perspective.

What's included in your subscription?

**Good Futures Fortnightly**

● Fortnightly perspective on what's happening now and what's next, delivered to your inbox

**The Paradigm Shift Report**

● Bi-monthly deep dive report into a macro trend

**Inspiration Safari**

● One-day safari designed to unpack and explore the Shift with experts and business leaders

**Content Archive**

● Access to all editions of Fortnightly, Paradigm Shift reports and videos of previous Inspiration Safaris

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## Foreword

**Welcome to the first Paradigm Shift report!** (And wow, did we pick a whopper of a topic for our first report!) Good Futures has now been live for four weeks and I wanted to share with you some of the lessons we've learned researching and writing the first Shift.

There's lots more lessons I could share, and a lot of builds for future reports. We've come a long way in four weeks, and we have big ambitions for how we want Good Futures to grow. In the meantime I'd recommend taking an hour, sitting back and diving into the future of 5G.

***It's going to change everything.***

**Daisy O'Reilly-Weinstock**  
Director of Big Bets

# 1

## Make it Digestible

Our goal for Good Futures is to give you digestible and actionable trends that get to the 'so what' for the charity sector. This report is *slightly longer* than we'd originally envisaged. Due largely to the fact that, when we started to unpack 5G and its implications, there was so much we wanted to cover. We could probably have written a whole year of reports just on this topic. We promise the next one will be shorter.

# 2

## Make it Useful

We want this report to be the start point for innovation. To get you as inspired, excited and energised about what's next as we are. We've included hyperlinks to source material so you can dive deeper into topics, and we created a canvas to help you unpack the 'so what's for your organisation. If you want a hand exploring the implications further, give us a shout (we have a sprint designed specifically for this).

# 3

## Make it Honest

We don't have a crystal ball. There are a lot of influencing factors at play. We've tried to extrapolate from current trends to consider where the shift *could* go. In some cases we've taken it to a potential (and currently unlikely) extreme (see Purpose & Meaning on [page 63](#)). Use this as an opportunity to start asking questions of your organisation, your operations, your mission and yourself so you're prepared for whatever comes next.

Welcome to

# PARADIGM SHIFT

The Paradigm Shift is an opportunity to travel deeper down the rabbit hole to focus on a **single macro trend**.

In each report we take a look back to look forward to see how the paradigm *might* change and **what that means for you and your organisation, and your supporters**. All framed within the lens of income and impact.

# The **Paradigm Shift** Methodology

Combining rigorous analysis of a wealth of secondary data, deep client sector insight and imaginative thinking, we unpack the **macro trend** in detail, and develop a series of potential, plausible future societal shifts. We then outline what these might mean for the third sector.

## **Evidence based**

Built on evidence-based secondary research and available case studies.

## **Multiple lenses**

Using a range of lenses to consider each piece of research and understand the potential implications, including STEEPLE (Societal, Technological, Economic, Environmental, Political, Legal, and Ethical).

## **Imaginative but level-headed**

Drawing on trend and foresight expertise to develop a series of hypotheses around future societal shifts and scenarios. We're imaginative but also pragmatic.

## **Bespoke for the sector**

Developed for the sector, not from the sector - uniting an expert view on the world outside, and a firm grasp of the challenges faced within. Our team combines foresight and trends experts with charity sector specialists.

## **Gets to the 'so what'**

Considers the implications and opportunities from each shift for the sector articulating a clear '**so what**' to get your thinking started.

# How to *use* this report

**We're not oracles, and we're not here to give you a firm and concrete prediction of the future.**

The goal of the **Paradigm Shift** report is to consider the potential impact of emergent trends and their associated technologies (assuming they are taken up) on society and people, and empower you to start asking questions now to prepare for what's next.

The goal of the report is to stimulate thinking and act as a springboard for ideation. At the end of the report you'll find the **Good Futures Trend Exploration Canvas** - a framework designed to help you unpack each of the 'so what's and act as stimulus for thinking and ideation.



**We've also split the report into two parts...**

# 1

## Technologies that 5G will supercharge

There are lots of technologies that will be impacted by 5G or will, by the adjacent societal changes, see growth and expansion. We've focused on the three key technologies we believe 5G will supercharge and, as a result, create new opportunities for the third sector.

Just like our Good Futures Fortnightly trends we've broken each technology down into four sections:

1. **What is it?**
2. **Why is it important?**
3. **Reasons to believe:** Future-facing case studies that put people at the heart of the technology
4. **So what?:** Thought starter questions regarding the potential opportunities presented by each technology

# 2

## The Societal Shifts

We've looked at these technologies through a range of lenses to develop five societal shifts likely to emerge as a result of current trends and cultural intelligence. These shifts are focused on the changes that could occur in society if the full potential of these technologies are realised.

We've structured each shift to explore:

1. **Technological Shift:** What behaviour is the technology enabling/creating?
2. **Connected Implications:** What emerges more directly out of this change? How will we feel as a result of this change? What questions are we likely to begin to ask?
3. **Societal Shift:** What could happen as a result at a broad societal level?
4. **Reasons to believe:** Current available evidence of these changes
5. **So what?:** What questions do you need to start asking now in order to be ready for what's next?



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# Introducing 5G



## What *is* 5G?

### **5G is technically the 5th generation of cellular networks.**

It runs on the same radio frequencies that are currently being used for your smartphone but utilises higher frequencies to transfer exponentially more data over the air for faster speeds, reduced congestion and lower latency.

**The rollout of 5G will do a lot more than just improve your network connection.** 5G is core to the 4th Industrial Revolution - the blurring of boundaries between the physical, digital, and biological worlds.

Imagine billions of connected devices gathering and sharing information in real time to predict or prevent road accidents, power early warning systems for natural disasters or deliver sensory experiences, like touch, through digital devices. Imagine a world where augmented reality will become truly ubiquitous. Where patients get treated at home with the help of VR, AR, and mixed reality.

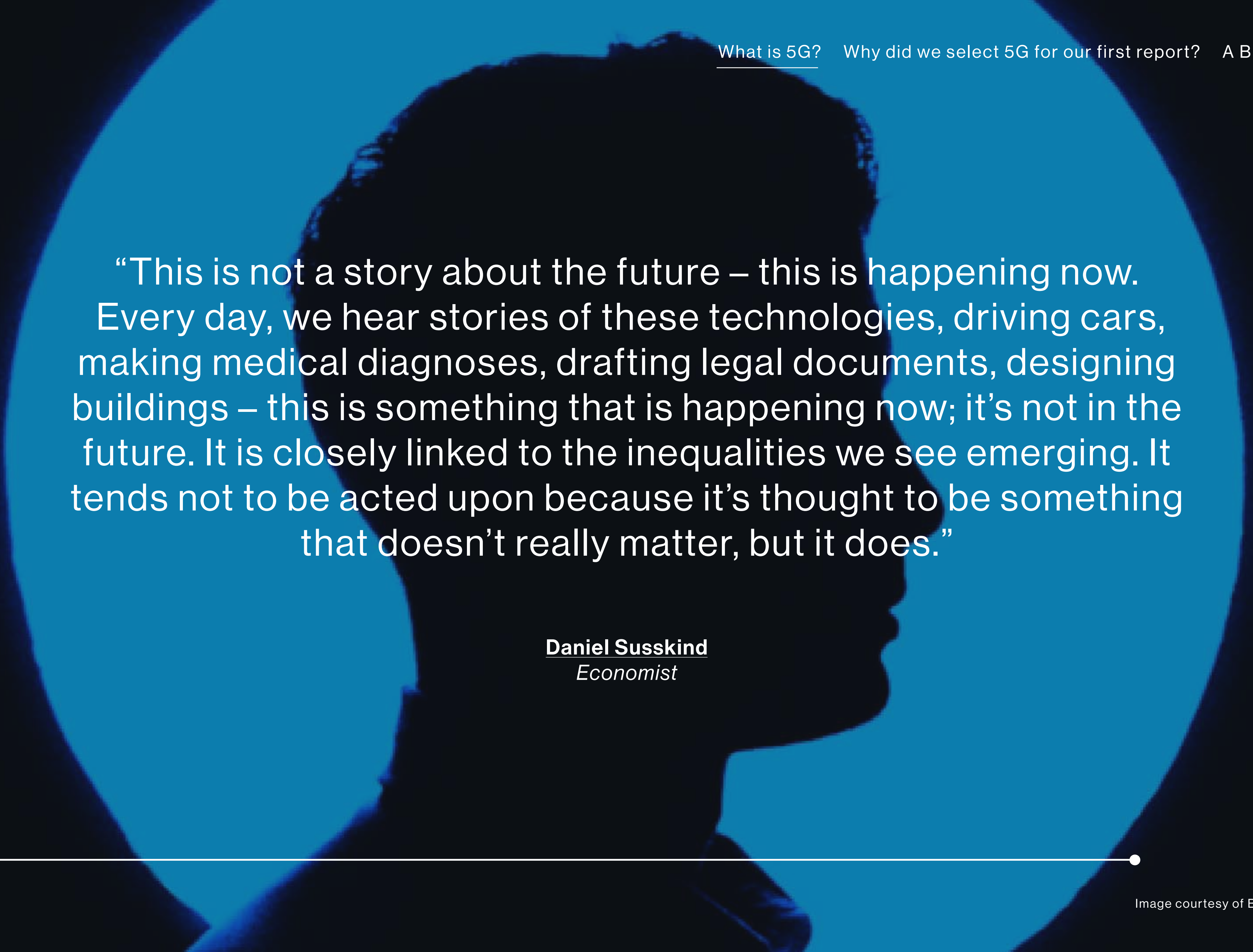
### **With big potential comes big risks.**

Surveillance and data capture pose risks to privacy. And in this new technological era, when things fail--and they will--they could fail spectacularly. Imagine petabytes of sensitive data being siphoned off by hackers in an instant. In the world of IoT it's one thing to hack someone's doorbell, but another to hack into an autonomous vehicle or a hospital's medical devices.

It may take a couple of years for 5G to blanket our country, but when it does, **data will flow freely between more people, more places, and more devices** at speeds and volumes we've not seen before. 5G will unleash a new wave of entrepreneurs and innovators.

5G doesn't just create new opportunities for connecting with people. 5G fundamentally - directly or indirectly - will shift our behaviours, attitudes, values and expectations.

### **Welcome to the Paradigm Shift.**



“This is not a story about the future – this is happening now. Every day, we hear stories of these technologies, driving cars, making medical diagnoses, drafting legal documents, designing buildings – this is something that is happening now; it’s not in the future. It is closely linked to the inequalities we see emerging. It tends not to be acted upon because it’s thought to be something that doesn’t really matter, but it does.”

**Daniel Susskind**  
*Economist*

## Why did we select **5G** for our first report?

1

### We're at a critical moment

5G is on the precipice of becoming a reality for a wider audience, and its transformative societal impact - across those with and without access to it, will grow exponentially. **The pandemic has expedited this shift.** *"The disruption to our everyday lives brought about by the Covid-19 pandemic has created a 'watershed moment in the awareness of how important connectivity is to our culture', according to Mark Melling, head of Verizon Media's Ryot Studio EMEA." ([Contagious](#))*

2

### That impact of 5G is set to be fundamental and far-reaching

The impact of 5G will not be limited to enhanced connectivity. In providing the genuinely "game-changing" supporting infrastructure of emergent technologies like AI, XR and IoT (amongst others), 5G is the platform that will, quite literally, "change everything".

3

### Increasing digital exclusion

As with all technological revolutions, the future will not be evenly and equally distributed. **5G could widen the bridge between the connected and the disconnected.** Those who can't, won't or don't connect. We believe there's a role for the third sector to not only bridge the divide but tackle the factors that influence digital exclusion.

4

### We need to make meaningful sense of it

To thrive in the future, organisations need to be proactive, rather than responsive to change. That requires an informed perspective on the future. But we're not oracles. The future impact of something like 5G cannot be predicted with 100% accuracy, but hyperbolic proclamations are no use to anyone. There's a lot of technology that 5G will supercharge, but **we've selected the three that we believe will offer the greatest opportunity (and potentially the greatest risk)** to the third sector. This report aims to provide intelligent speculation to deliver a broad perspective on what plausible potential future scenarios might emerge and what they mean for the sector, your mission and your supporters.

“There are an estimated 20 billion connected devices in the world today. If there were to be a fundamental shift in the tech that connects these devices we would also see a shift in the way that we as humans live, work and play, and therefore a massive impact on our culture.”

**Mark Melling**

*Head of Verizon Media's Ryot Studio EMEA ([Contagious](#))*

# A Brief History of the Gs

## 1G

## 2G

## 3G

## 4G

## 5G

### Brick Phone

Year: 1979

New Capabilities:

- Calls



Think: *doing bicep curls with your £1700 Motorola to impress your power-suited colleagues*

### Burner Phone

Year: 1991

New Capabilities:

- Dial-up Internet
- Text Messaging
- Picture Messaging



Think: *playing snake on your Nokia instead of filling in your Excel spreadsheet*

### Smart Phone

Year: 2001

New Capabilities:

- Mobile Internet
- Video Calling



Think: *tapping out e-mails to an ex on the tiny keys of your Blackberry*

### iPhone

Year: 2009

New Capabilities:

- Mobile TV and Gaming
- HQ Video Conferencing



Think: *in an Uber back from the club, blasting the Spotify playlist on your iPhone*

### Future Phone

Year: 2020-2030

New Capabilities:

- Remote Control
- Extended Realities



Think: *using your Huawei to track the drone delivering your takeaway*

# 2

## 5G Technologies





# Internet of Things (IoT)

**What is IoT?**  
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**A Brief History of IoT**  
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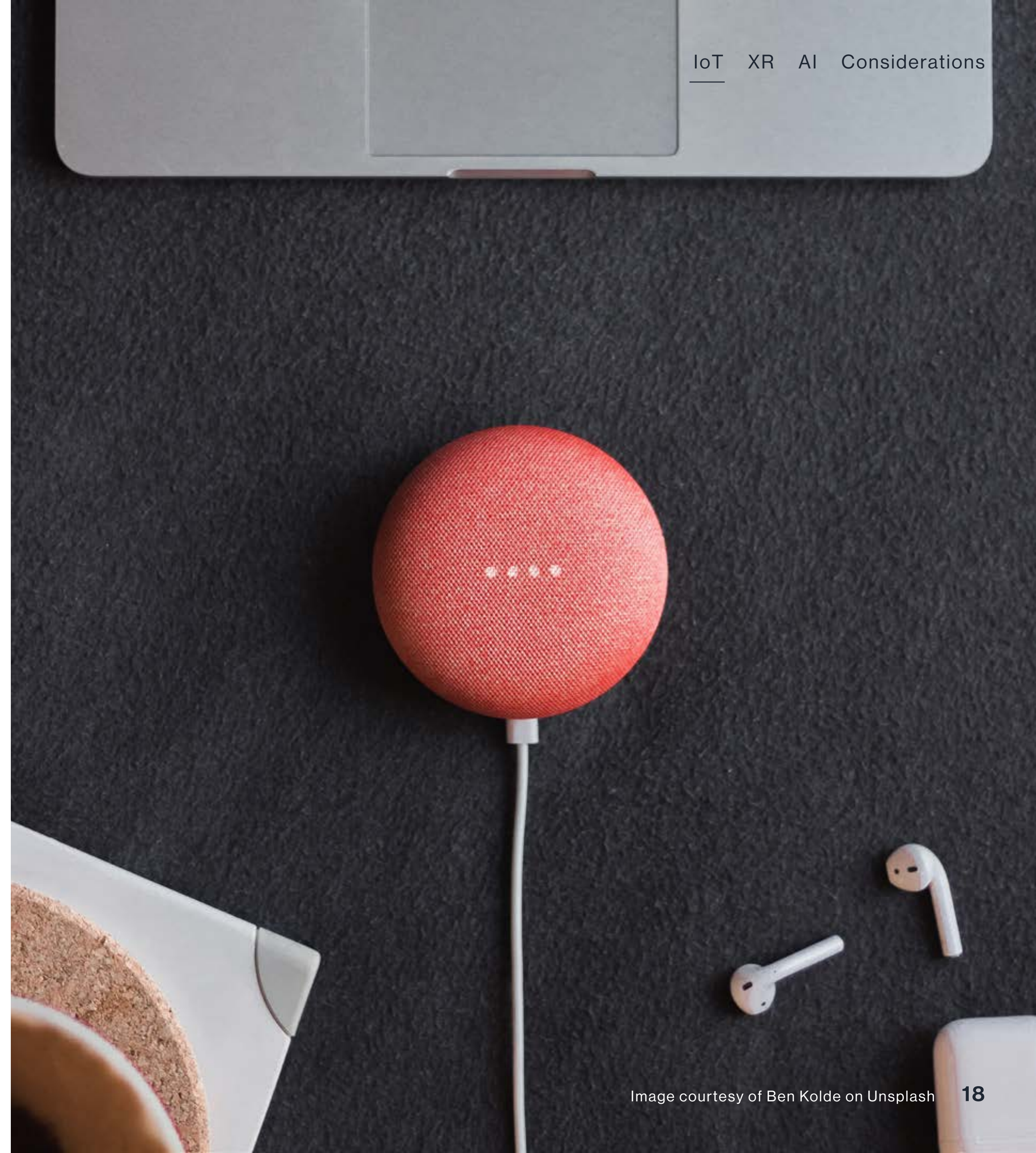
**Case Studies**  
[Page 21](#)

**So what?**  
[Page 23](#)

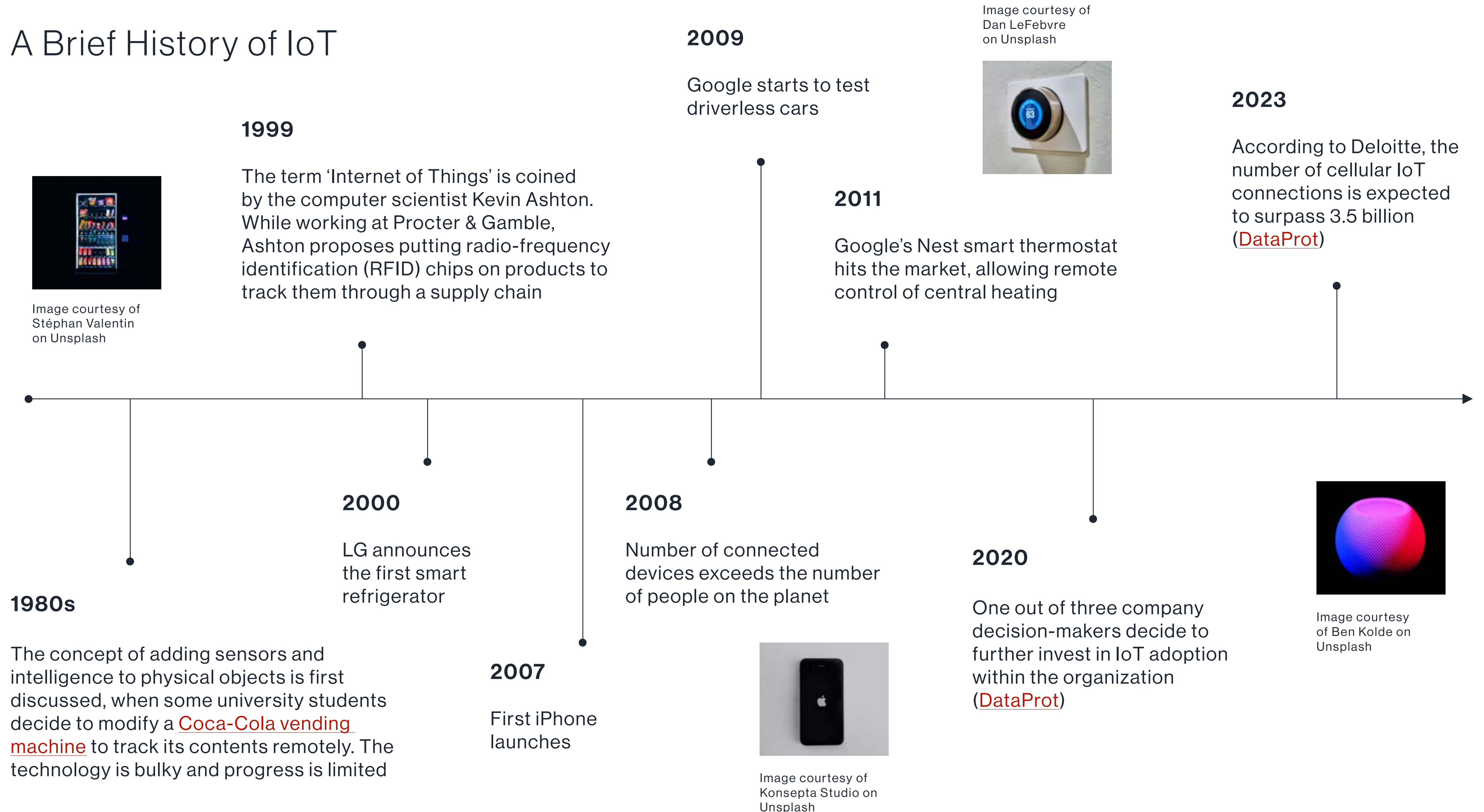
## What *is* IoT?

Our devices are now talking to each other. The **Internet of Things**, aka **IoT**, is the sum total of all the devices that are connected together by the Internet.

Often referred to as 'Smart Objects', these devices use the Internet to communicate with each other - and with us. Our homes are increasingly populated by these Smart Objects, from Smart speakers to Smart thermostats.



# A Brief History of IoT



## Why does it matter?

### Geographical distance will no longer be a barrier to connection or action

5G's ultra low latency and hyperconnectivity allows for the emergence of phenomena like the [tactile internet](#), where humans can use connected tech to complete physical tasks remotely yet as effectively as if they were in the room. If 3G facilitated advice over the phone, and 4G enabled guidance via video-stream, 5G enables remote task completion.

We don't think we can be in two places at once - [embrace our family from another country](#), or perform [heart surgery outside of the operating theatre](#). Thanks to IoT, this no longer seems so impossible. We'll be able to construct buildings without having to be on-site, with a 5G-connected device there to seamlessly mirror our every movement.

### More data = great insight but amplified security focus

The IDC predicts data generated by IoT devices will reach 73.1 ZB by 2025, which equals 422% of the 2019 output. ([DataProt](#)). In supercharging IoT, 5G will help us gather and analyse more data, delivering smarter insight, and enabling more precise decision-making - across infrastructure and our own devices.

With more and more Smart devices connected to the internet and 'talking' to one another, the security of this digital space becomes a greater concern. Between 2018 and 2019 Cyberattacks on IoT devices skyrocketed a staggering 300%, growing from 813 million in 2018 to 2.9 billion the following year. ([DataProt](#)). IoT search engines such as [Shodan](#) and [Thingful](#) are already able to 'discover' internet-connected devices. Though incredibly rich resources, they point to the vulnerability of our personal data captured by these IoT-connected Smart devices. A breach to our technology becomes more and more of a threat to ourselves.

Want to read the rest of the report and find out  
what's next?

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