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Drones: the 4IR technology which is here today

Presentation to IT Matters Drones Forum
Drones: is the insurance sector ready for take-off?
Lloyd's of London
21 February 2019

Image credit: Yuneec

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About techUK

techUK represents the companies and technologies that are defining today the world that we will live in tomorrow.

More than 950 companies (>700 are SMEs) are members of techUK.

These companies collectively employ about 700 000 people - about half of all tech sector jobs in the UK.

They range from leading FT-SE 100 companies to new innovative start-ups.

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techUK's objectives

UK Good for Tech

Making the UK the best place to locate, start or grow a technology business

Tech Good for UK

Harnessing the power and potential of tech for the benefit of the UK

Tech Good For People

Technology is used to enhance and improve the quality of life in the UK

techUK represents the future

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Where techUK focuses its resources

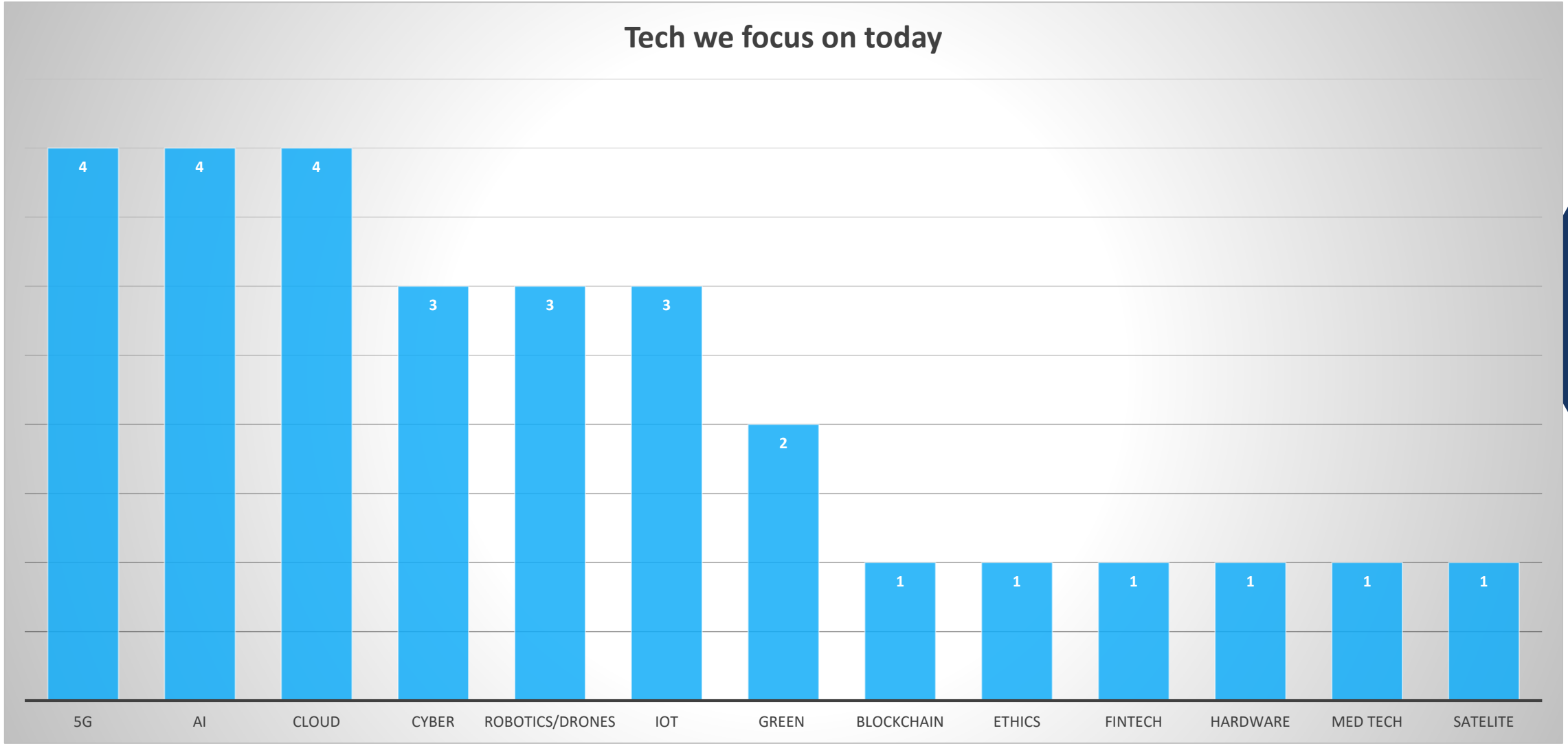

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Image credit: John Stillwell/PA

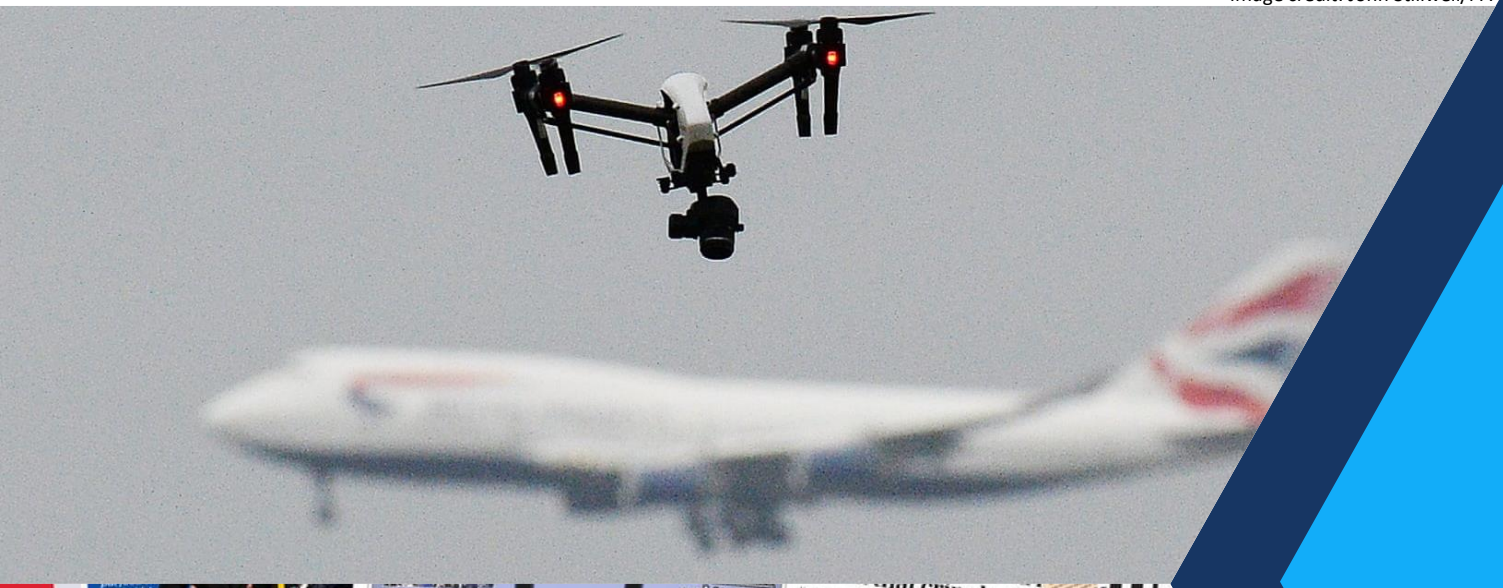

Image credit: The Guardian

You may have heard of drones – the new UFO/scapegoat for everything unexplained at airports

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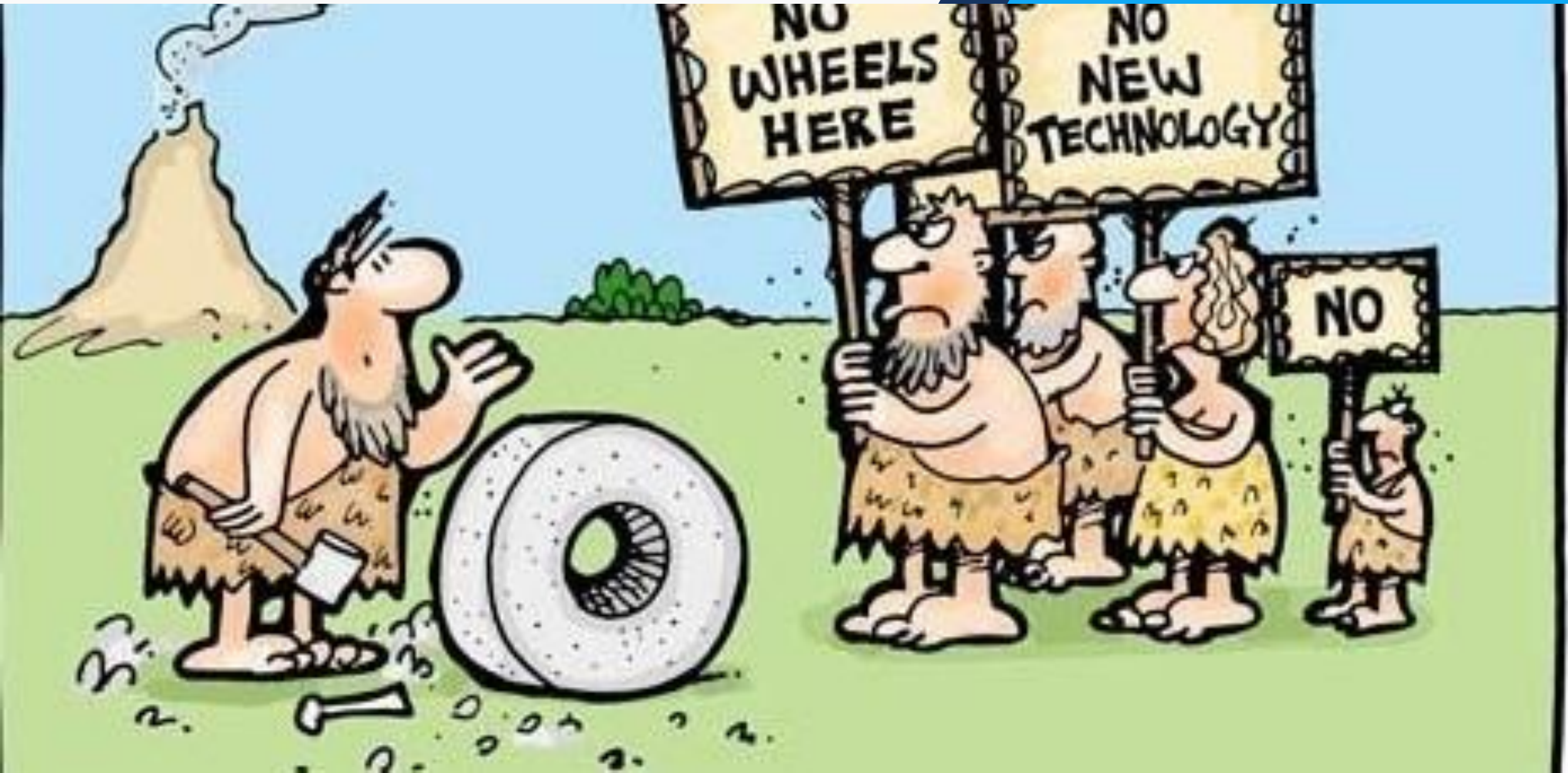
Haven’t we always been concerned about new technologies?



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Technologies governments used to worry about (sedition, crime, immorality …)

- Printing press
- Radio
- Television

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Technologies governments worry about now

- Internet
- AI/ML/Facial recognition
- Robotics/Drones
- Data security
- Gene editing

Image credit: The Financial Express

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So what is a drone?

- A drone is simply an Unmanned Aerial Vehicle (UAV)
- Made of light composite materials to reduce weight and increase manoeuvrability
- Often a quadcopter which can take off, fly, hover and land vertically
- Low battery life –
  - Hobbyist drone could be as little as 10 minutes
  - Enterprise/prosumer may be 20-30 minutes.

Image credit: Intellisystem Technologies

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But drones are increasingly autonomous

- Drones already have autocorrection - unlike helicopters.
- Increasingly context aware & able to avoid obstacles.
- Geofencing (which isn't easy to circumvent) prohibiting operation over prisons, near airports etc.
- "follow me" selfie mode.
- Most of the latest drone have 3 types of Return to Home technology -
  1) Pilot initiated
  2) Low battery level
  3) Loss of transmission between drone & controller.

So are today's – legitimate – concerns about airport safety & privacy a short-medium term issue?

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…and may change shape "on the fly"

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What have drones ever done for us?

Surprisingly quite a lot!

And there’s a lot more to come…

Image credit: HandMade Films

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In enterprise, drones raise productivity, improve health & safety

- Inspecting civil engineering (e.g. rail, bridges, nuclear power plants, oil & gas, wind farms)
- Logistics – Amazon/Ocado (perhaps more "hub & spoke" than "direct to bedroom")
- Agriculture, including weed identification & micro-delivery of weedkiller
- Measuring radiation off mobile base stations
- Maybe even as flying cellular base stations (but in the UK they'd need to be tethered to the ground!)

Image credit: *Burlington Northern Santa Fe*

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Drones also have many public service uses

- Search & rescue (police, fire, RNLI) –
  - Most police requests for helicopters rejected
  - but drones are currently small pockets of use & only one area has joint police/fire fleet
- Traffic accident evaluation
- Delivery of blood & medicines
- Identification of plastic in oceans & on beaches
- Flying taxis?

Image credit: DJI Europe

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Even drones as entertainment

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Drone technology is developing so quickly, it's surprising there are still some key user asks:

- IR camera with a zoom
- LIDAR attachment
- Inflight lens cleaning & IP rating for cameras to deliver video in rain

Also issues with:

- prop wash
- average wind speed in London above many manufacturers' tolerance
- Issue with spectrum & urban GPS loss

Image credit: AFP

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Seizing the moment

The recent PWC report highlighted that increased drone adoption across the economy could **increase UK GDP by £42 billion** (or 2%) by 2030.

Potential for UK plc is vast, helping to address historic lack of productivity growth.

Opportunity for UK to:

- champion safe enterprise drone use
- encourage innovative uses
- position UK as a world leader in drone technology/application.

UK aspires to be a leader in 5G, AI, autonomous vehicles – why not drones?

EU regulation being finalised. Essential that forthcoming UK Drone Bill doesn't pander to Daily Mail but strikes balance & preserves regulatory flexibility.

DfT needs to listen to BEIS as much as to the Home Office.

Thank you

DANGER SIGNALS
1%
Danger signals you should care about
Danger signals you actually care about

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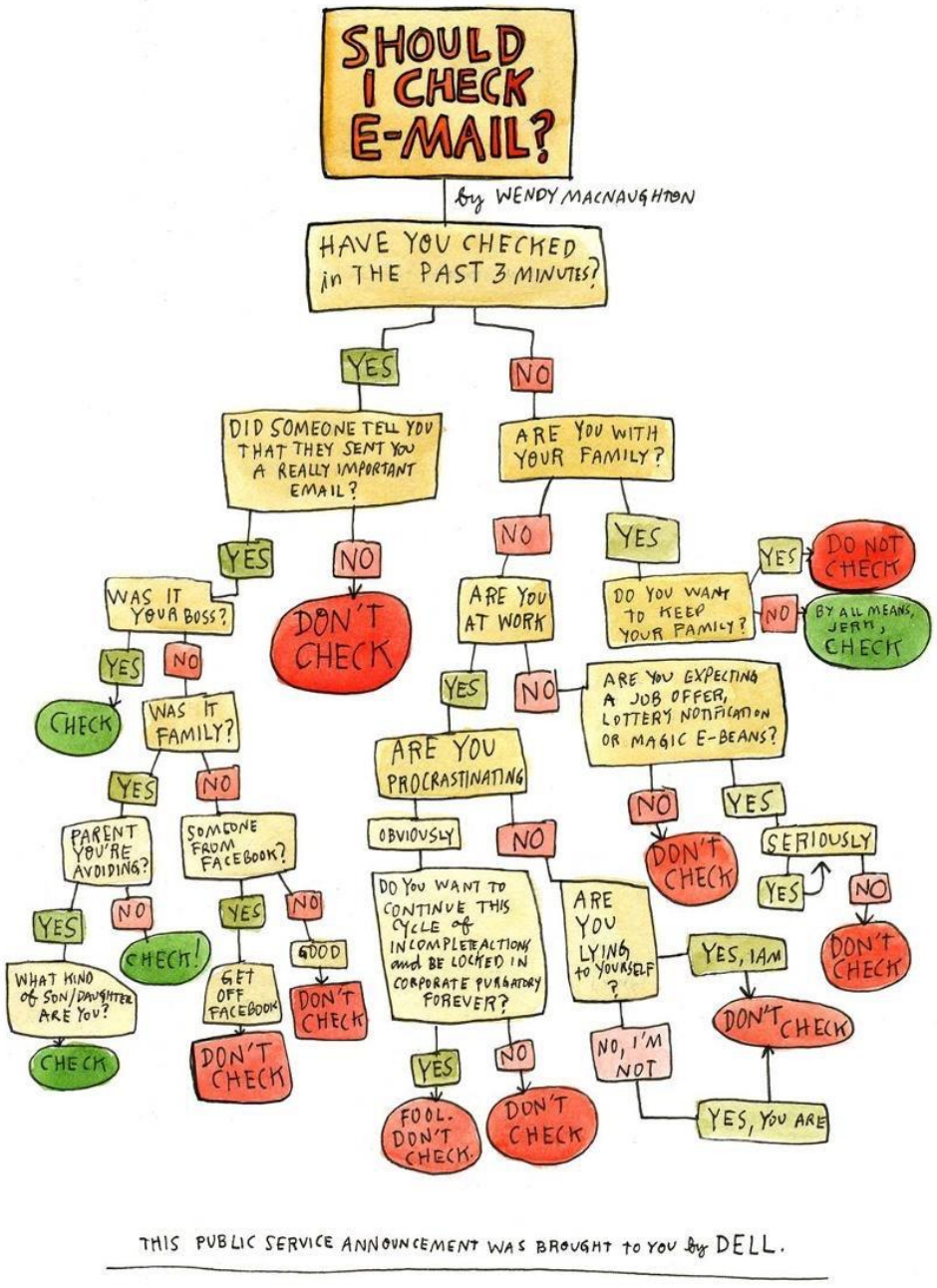
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