

How to tell when a tech is *not* ready

Jon Crowcroft

<http://www.cl.cam.ac.uk/~jac22>

<https://www.turing.ac.uk/people/researchers/jon-crowcroft>

Three Techs, Three aspects

1. Confusing New names for old things
2. Things older than you may think
3. New things slower than old

With 3 examples from dlt,ml,iot

1. Distributed Ledger Technology
2. Machine learning (and ai)
3. Internet of Things

dlt

- Do not mix up cryptocurrency and blockchain
- Immutable record of transactions
 - But so is a database
- Smart contracts
 - But so was e-commerce
- Why not gov? 3 essential requirements:
 - Decentralised - nope
 - No single point of trust - nope
 - Long term persistent - maybe

Dlt #2

- Ask someone peddling blockchain:
 - What transaction rate do you support (read/write)?
 - What is the latency per transaction commit?
 - Where's your open source/spec repo?

ML (AI)

- Do not mix up ml & ai
- ml is just
 - better stats with
 - bigger faster compute/storage
 - Please use, more!
- Already used in much gov
- But what of AI
 - Anything that isn't explainable
 - How would gov use black boxes, ever, pray?

ML(AI)#2

- Ask an AI peddler:
 - What's your interpretability model?
 - How did you de-bias your training data?
 - Where are your reproducibility results?

IoT

- Do not mix up internet (of things) and smart X
 - For X=home, car, city
- Most IoT systems are silos
 - CCTV, smart meter, fitness monitor/actuator
 - For good reasons
 - not just privacy
 - **Safety** is paramount (car brakes, defibrillator etc)
- What would gov do: regulate safety, please...
 - E.g. Liability, if don't match MUDs.
 - Require data minimisation

IoT#2

- Ask the IoT dealer:
 - Where are your product liability statements?
 - What are the published APIs for me to integrate with other IoT products?
 - What are your software update/supprt plans 6-10 years for now for any current product?

Generic tech lessons

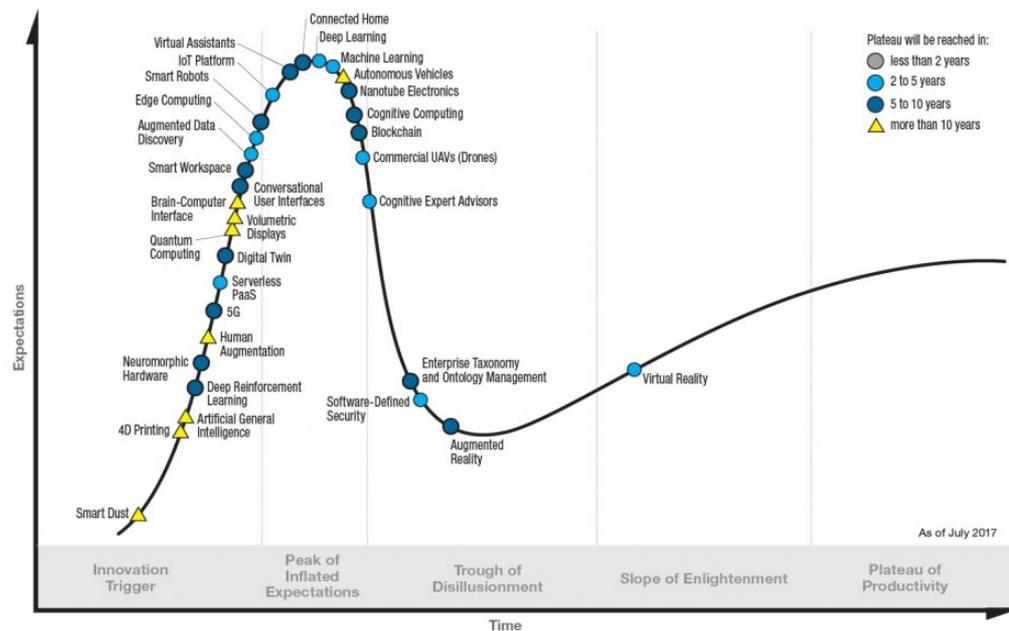
- Most tech is older than you think
 - Possibly even older than you are
- Beware of Mutton Dressed as Wolves
 - Or sheep in lamb's clothing
- Is it a Solution in search of a problem
 - Or are there fine boring pre-existing solutions
- If the new lamb appears slower than the old ram
 - It probably isn't just an engineering problem

QC&A

- Questions....?
 - Do not ask me about Quantum Computing
 - Ask the QC product vender:
 - What is the biggest number your device can reliably factorise?
 - It probably isn't just an engineering problem

Over hyped hype curve

Gartner **Hype Cycle** for Emerging Technologies, 2017



gartner.com/SmarterWithGartner

Source: Gartner (July 2017)
© 2017 Gartner, Inc. and/or its affiliates. All rights reserved.

Gartner.