Lack of Digital Understanding

Examples

- **Digital blindspots -** where unclear policies or business models lead to disempowerment and lack of trust. (1)
  Findings of the Doteveryone People, Power, Technology reports: "They know no one is going to read all those terms and conditions – and so you don't know what rights and information you're giving away."

- **Lack of representation -** different experiences are not understood by those creating technology and this leads to blindspots in how it can affect others. (2)
  Case Study Propublica: "Machine Bias: There's software used across the US to predict future criminals. And it's biased."

- **Lack of understanding -** Those who buy or procure technology do not understand how it works or its potential consequences. (3)
  Abandoned NHS IT system has cost £10bn so far - Richard Bacon, a Conservative member of the committee, said the report was further evidence of a "systemic failure" in the government's ability to draw up and manage large IT contracts.

Unintended users & uses
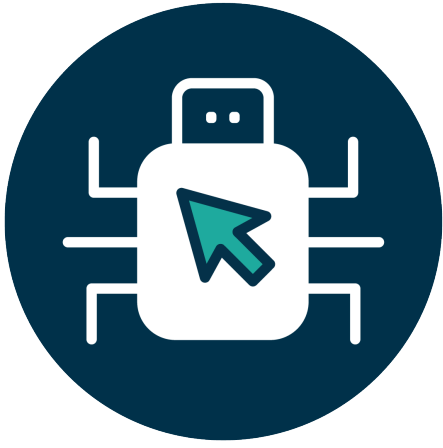
Examples

- **A use not imagined**

  When Classical Musicians Go Digital (4)

  Increasing numbers of players are using iPads and laptops instead of sheet music, especially now that the latest generation of tablets come in the same size as a standard score.

- **Users never imagined**

  The Me Too Movement Comes to China (5)

  Assault Victims Use Blockchain To Document Assaults After Xi Ping Uses The Great Firewall Censors

Weak Reliability, Security, Monitoring & Support

Examples

- **Not providing reliability for everyone** - Cheap Smartphones Leave the Poor More Vulnerable (6)
  More expensive devices receive much stronger security protections.

- **Not designing for those with bad intent** - Hacked Facebook accounts found for sale on the dark web (7)
  If exploited by criminals, security experts warn that the data could be used to commit identity theft or blackmail Facebook users with compromising information.

- **Not monitoring for unexpected results** - Tumblr booted from App Store due to child porn.
  Tumblr released a statement which explained that it discovered content during an audit that wasn't included in the industry database it was using

- **Not providing support needed** - Barriers to Technology Adoption in Education (8)
  A serious barrier to technology in the classroom is the lack of effective training to teachers and instructors.

Changes in Norms & Behaviours

Examples

- **Changing Behaviour -** 5 Ways technology is changing behaviour (9) Digital walls, less patience, searching for a like button offline, lack of focus, less safety conscious

- **Changing Relationships -** It's much easier to injure friendships online (10) because of the ease of creating misunderstandings electronically. When a friend is going through a rough time, not even the most clever emoticon can substitute for a heartfelt hug

- **Changing Social Norms -** How mobile dating has (and hasn't) changed our love lives (11)

- **Changing Language -** How Digital Technology Has Changed Language (12) The Good, The Bad and The Smiley

- **Codifying Societal Bias -** Smiley - An Examination of Hiring Algorithms, Equity, and Bias. (13) Predictive hiring tools can reflect institutional and systemic biases

Displacement

Examples

- **Automating functions, jobs or sectors -** Technology Has Already Taken Over 90% Of The Jobs Humans Used To Do (14)

- **Changing the need for public institutions or services** What are Coding Bootcamps and Why are they Better than Traditional College? (15)

- **Displacing communities while creating new ones** Online AA meetings for those who don't live near meetings or are homebound (16)

- **What does it means to be human?** Girl with 3-D printed hand hopes to break first pitch record (17)

Negative impact on the planet

Examples

- **Energy and materials that go into the creation of tech that harm the planet.**

  "…data centres in the U.S. alone are projected to consume approximately 73 billion kWh in 2020. Data centre efficiency and sustainability is a universal challenge that transcends companies, geographies, and workloads – and there's no simple solution." **(18)**

  Conflict minerals & Coltan: Tantalum from coltan is used to manufacture batteries for electric cars, and in tantalum capacitors it is used in electronic products. Coltan mining has helped to finance serious conflict in the Democratic Republic of Congo, for example the Ituri conflict and the Second Congo War.

- **The energy usage of people using a technology that demands high consumption**

  Alex de Vries, a bitcoin specialist at PwC, estimates that the current global power consumption for the servers that run bitcoin's software is a minimum of 2.55 gigawatts (GW), which amounts to energy consumption of 22 terawatt-hours (TWh) per year—almost the same as Ireland. **(19)**

References

(1) https://doteveryone.org.uk/project/peoplepowertech/

(2) https://www.propublica.org/article/machine-bias-risk-assessments-in-criminal-sentencing

(3) https://www.theguardian.com/society/2013/sep/18/nhs-records-system-10bn

(4) https://www.nytimes.com/2016/06/12/arts/music/when-classical-musicians-go-digital.html

(5) https://www.wnycstudios.org/story/rice-bunny-me-too-movement-comes-china

(6) www.slate.com/articles/technology/future_tense/2017/04/cheap_smartphones_leave_the_poor_vulnerable_to_fraud_and_harassment.html

(7) https://www.independent.co.uk/life-style/gadgets-and-tech/news/facebook-hack-data-dark-web-login-details-cost-dream-market-a8564671.html

(8) https://www.huffingtonpost.com/suren-ramasubbu/the-barriers-to-technolog_b_6961708.html

(9) https://www.pcalaw.com/5-ways-technology-changing-human-behaviour/

(10) https://www.psychologytoday.com/us/blog/happiness-in-world/201006/the-effect-technology-relationships

(11) https://www.glamourmagazine.co.uk/article/how-tinder-has-changed-dating

(12) https://www.gooeydigital.com/2017/06/02/digital-technology-changed-language/

(13) https://www.upturn.org/reports/2018/hiring-algorithms/

(14) https://www.forbes.com/sites/quora/2018/01/18/technology-has-already-taken-over-90-of-the-jobs-humans-used-to-do/

(15) https://techlaunch.io/blog/coding-bootcamps-better-traditional-college/

(16) aa-intergroup.org/directory.php

(17) https://www.ctvnews.ca/sports/girl-with-3-d-printed-hand-hopes-to-break-first-pitch-record-1.3581050

(18) https://www.youtube.com/watch?v=yrcTxCOkuWA

(19) https://www.economist.com/the-economist-explains/2018/07/09/why-bitcoin-uses-so-much-energy