



**Bristol
Technology
Showcase**

Technologies of tomorrow, presented today.

Technology and Humanity: The next 10 years

Gerd Leonhard

Futurist & CEO The Futures Agency

Author of Technology vs. Humanity



[gerdtube.com](https://www.gerdtube.com)



[@gleonhard](https://twitter.com/gleonhard)

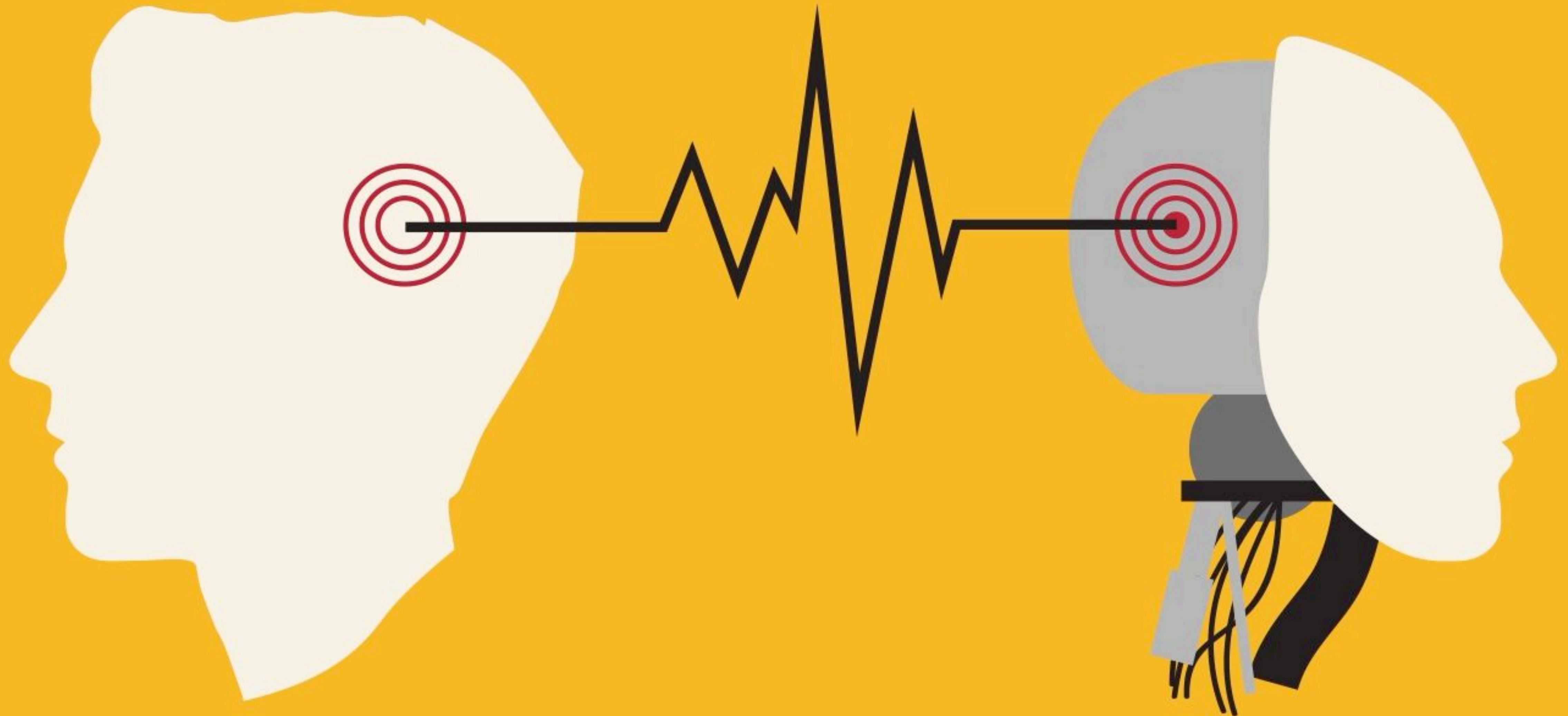


[futuristgerd.com](https://www.futuristgerd.com)

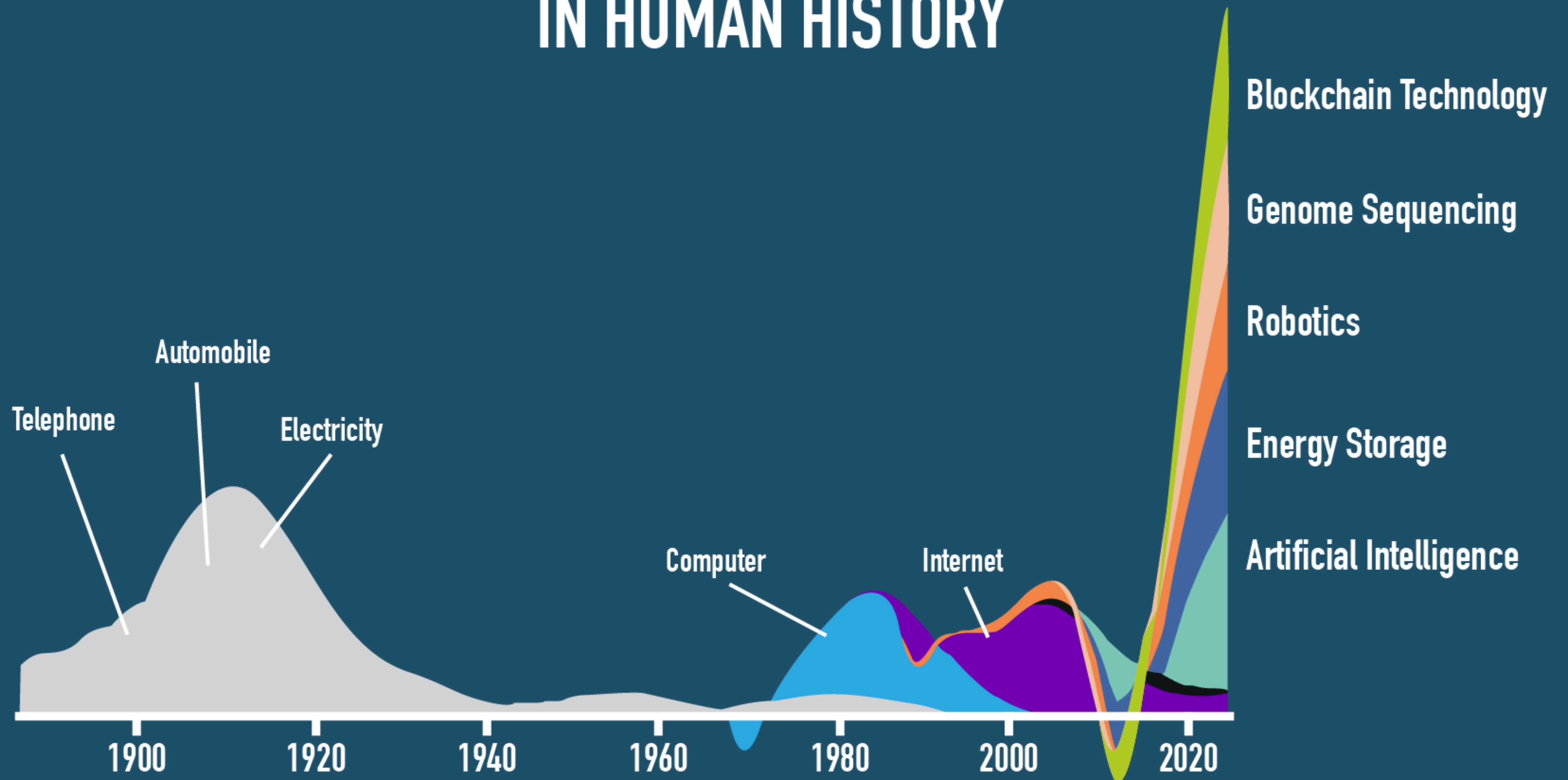
Our world will change more in the next 20 years than in the previous 300 years



Humanity 🌐 Technology



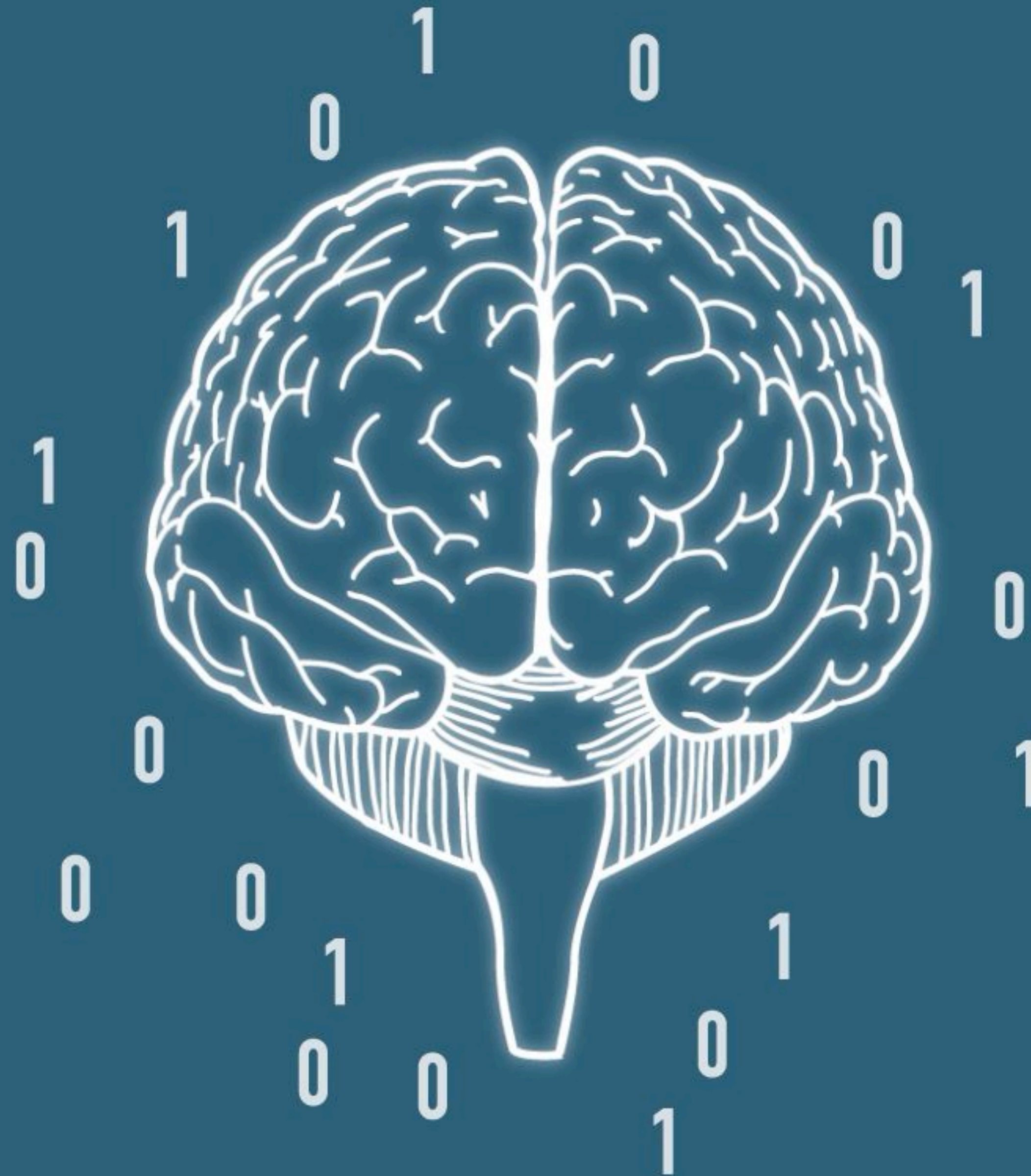
THE BIGGEST TECHNOLOGICAL TRANSFORMATION IN HUMAN HISTORY



First, we augmented human MUSCLES



First, we augmented human MUSCLES... now we are augmenting human INTELLIGENCE



Data + Cloud + IoT + AI: We are building a new META-INTELLIGENCE



#HellVen: it could be heaven or it could be hell!





ALJAZEERA

Gerd

What if a bionic leg is so good that someone chooses to amputate?

Jemima Kiss • Thu 9 Apr 2015 07.00 BST

Hugh Herr, a double amputee, top mountain climber and biophysicist, has done inspiring work aimed at eliminating disability



ELON MUSK BELIEVES HE CAN

MERGE OUR MINDS

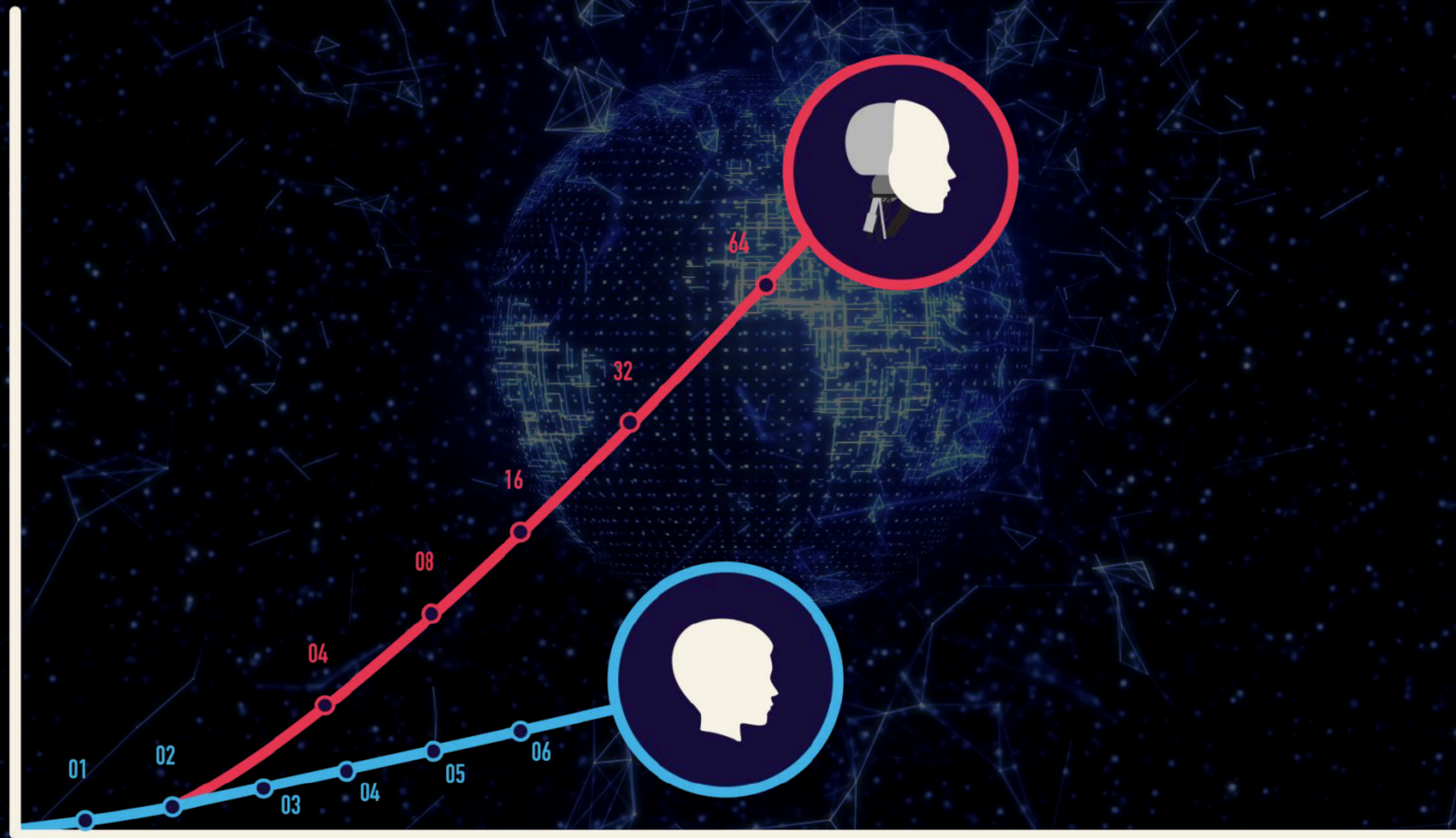
WITH MACHINES

9920 8585.0333405

His new venture, Neuralink,
is a thin mesh device

THE BRAIN-HACKING DEVICE IS MUSK'S WAY OF KEEPING HUMANS AHEAD OF AI

Technology is exponential but humans are linear. Should we UPGRADE or RESPECT the difference?



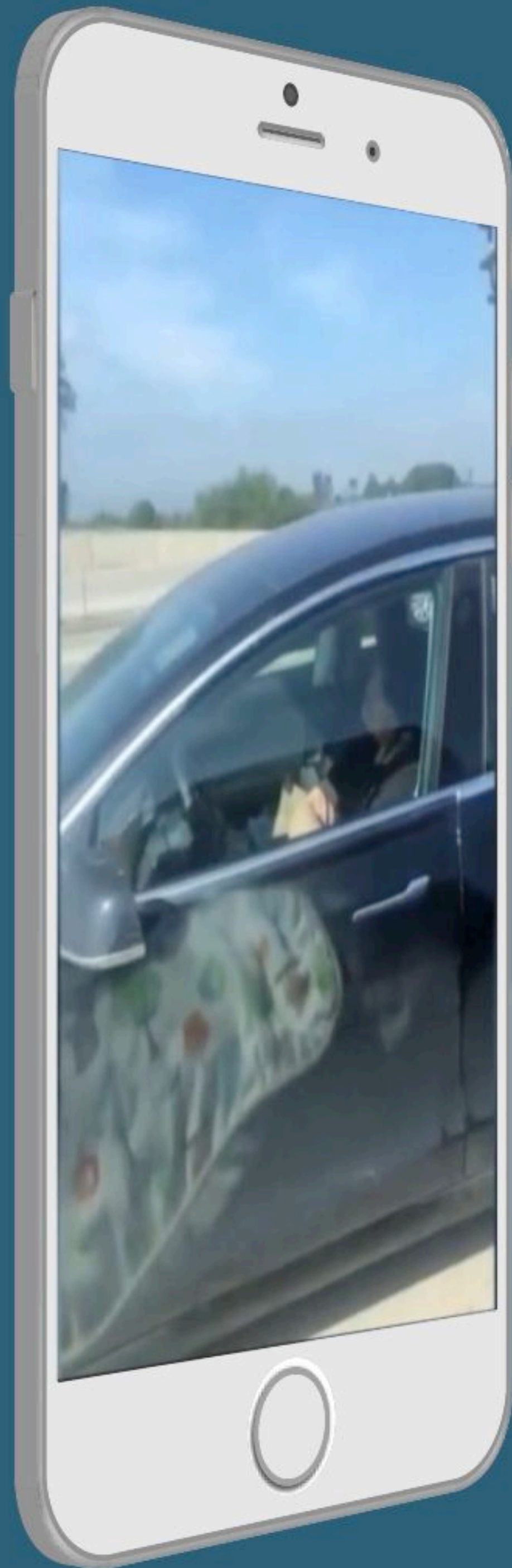
The temptation: Become superhuman! Omniscient, omnipotent, omnipresent!



How will we retain our SKILLS and our AUTONOMY?



How will we retain our SKILLS and our AUTONOMY?



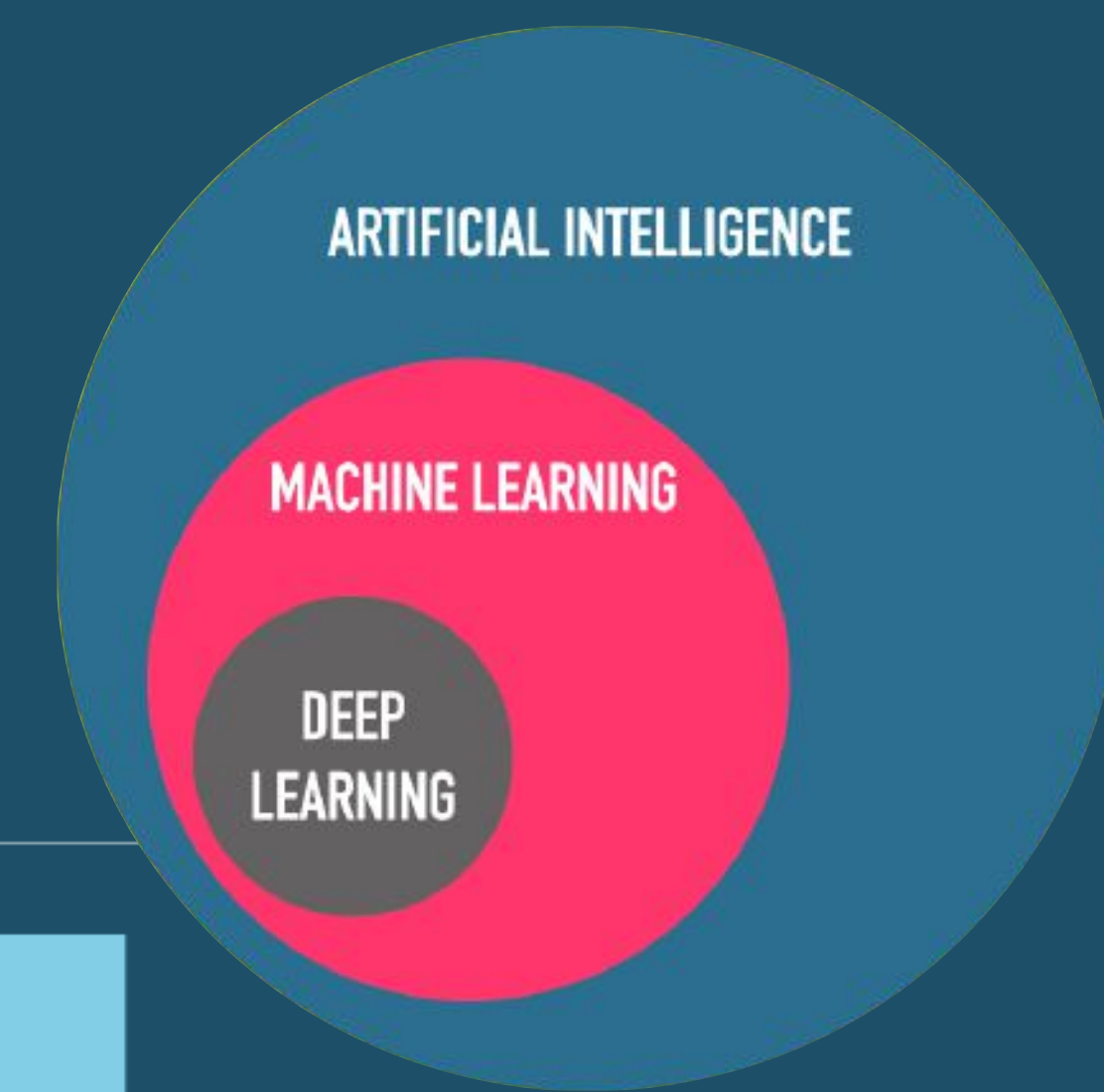
Fancy watching a
romantic film?

He likes
action movies

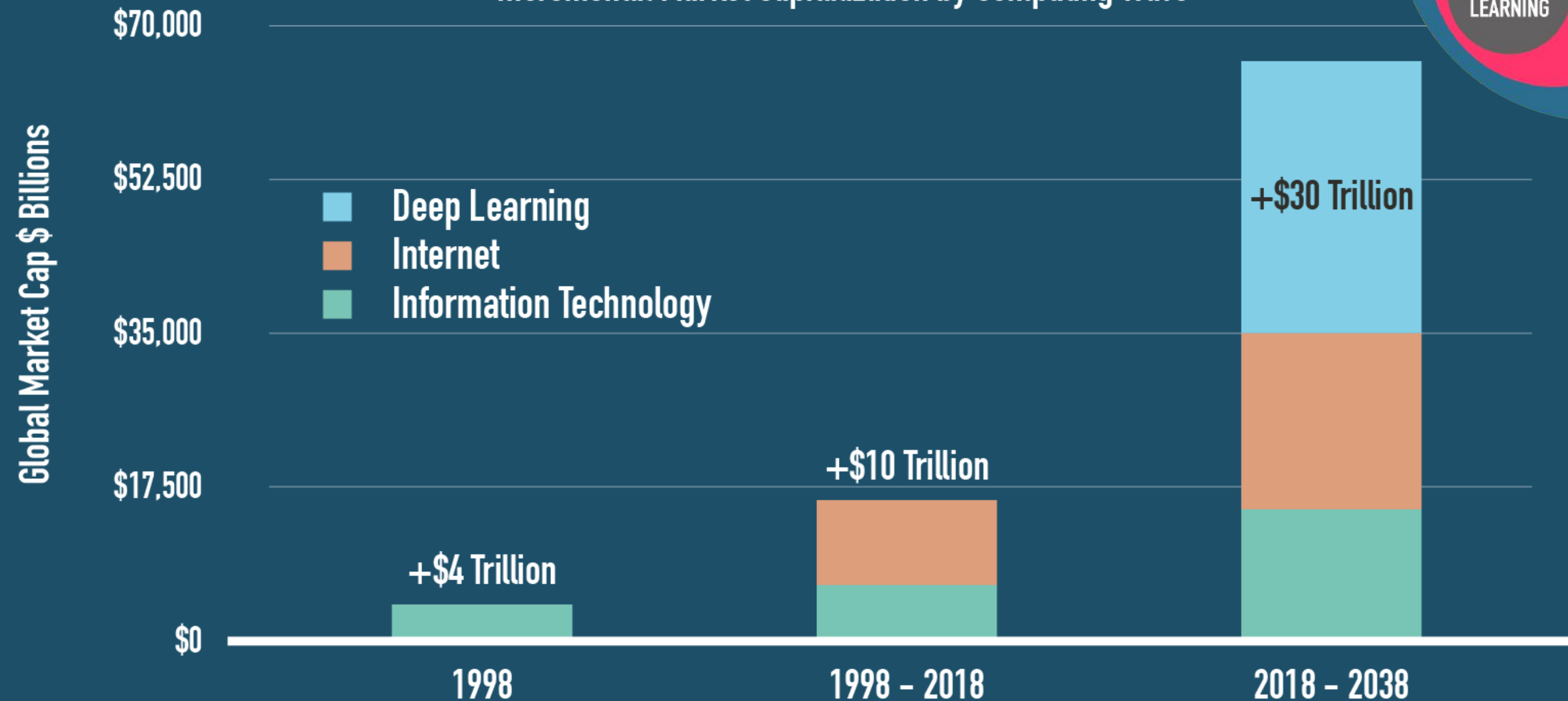


SIZING THE OPPORTUNITY

DEEP LEARNING COULD CREATE 3x THE VALUE OF THE INTERNET

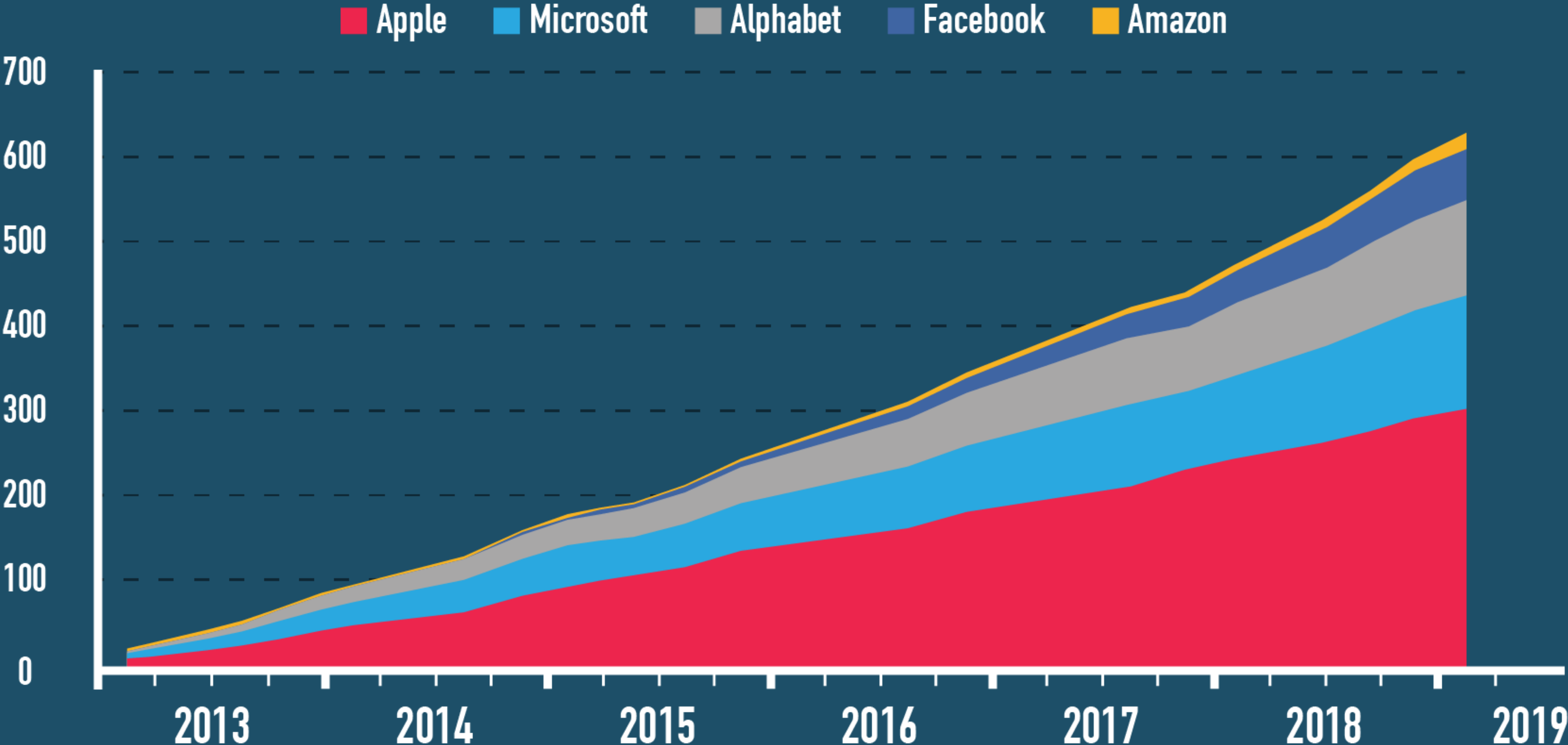


Incremental Market Capitalization by Computing Wave



REALLY BIG TECH

CUMULATIVE PROFITS SINCE Q1 2013, \$bn



If?

How?

e^x

EXPONENTIAL Gerd

Why?

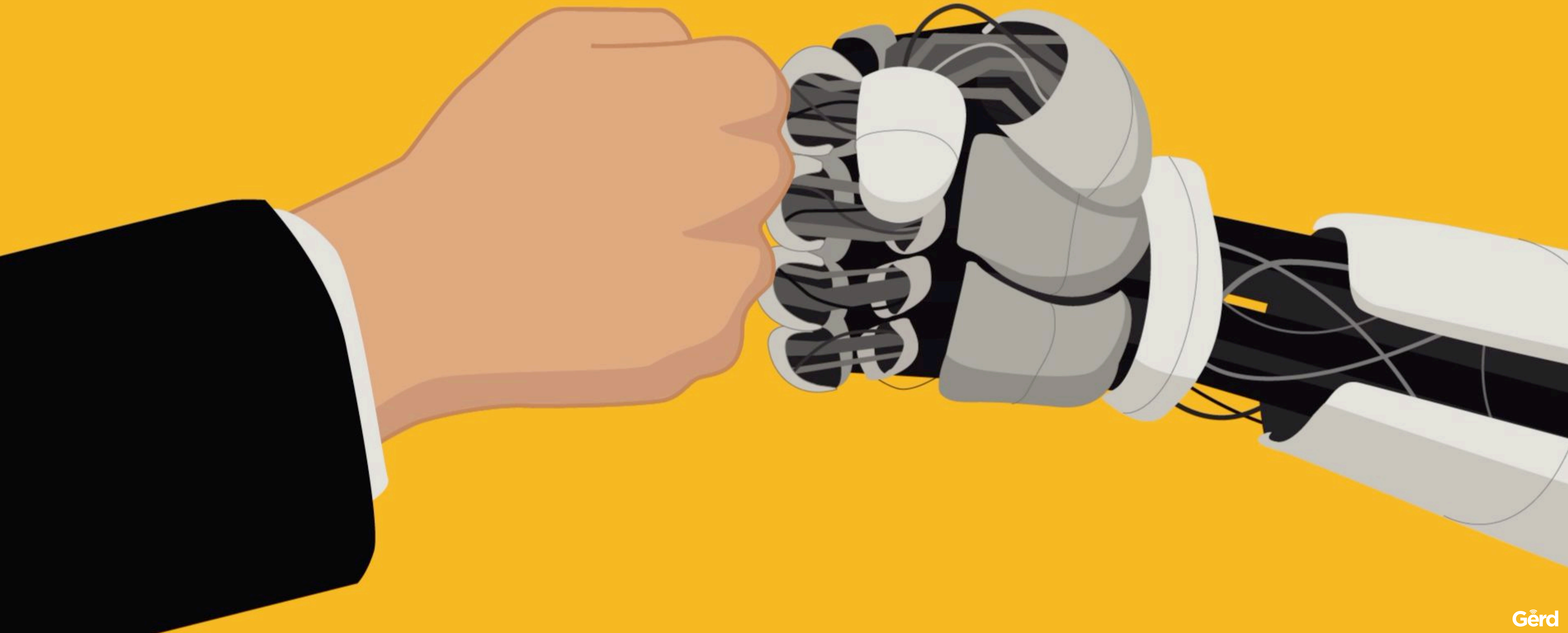
Who?

**SOCIETY GIVES EACH OF US
A LICENSE TO OPERATE.
IT'S A QUESTION OF WHETHER
SOCIETY TRUSTS YOU OR NOT.”
—GINNI ROMETTY, CEO, IBM**

#DigitalEthics



#DigitalEthics



"Ethics is knowing the difference between what you have a right (or the power) to do and what is the right thing to do"

adapted from Potter Stewart



TECHNOLOGY HAS NO ETHICS

**“The social-media
meltdown results
from optimizing the
wrong objective on
a global scale with
fairly unintelligent
algorithms”**

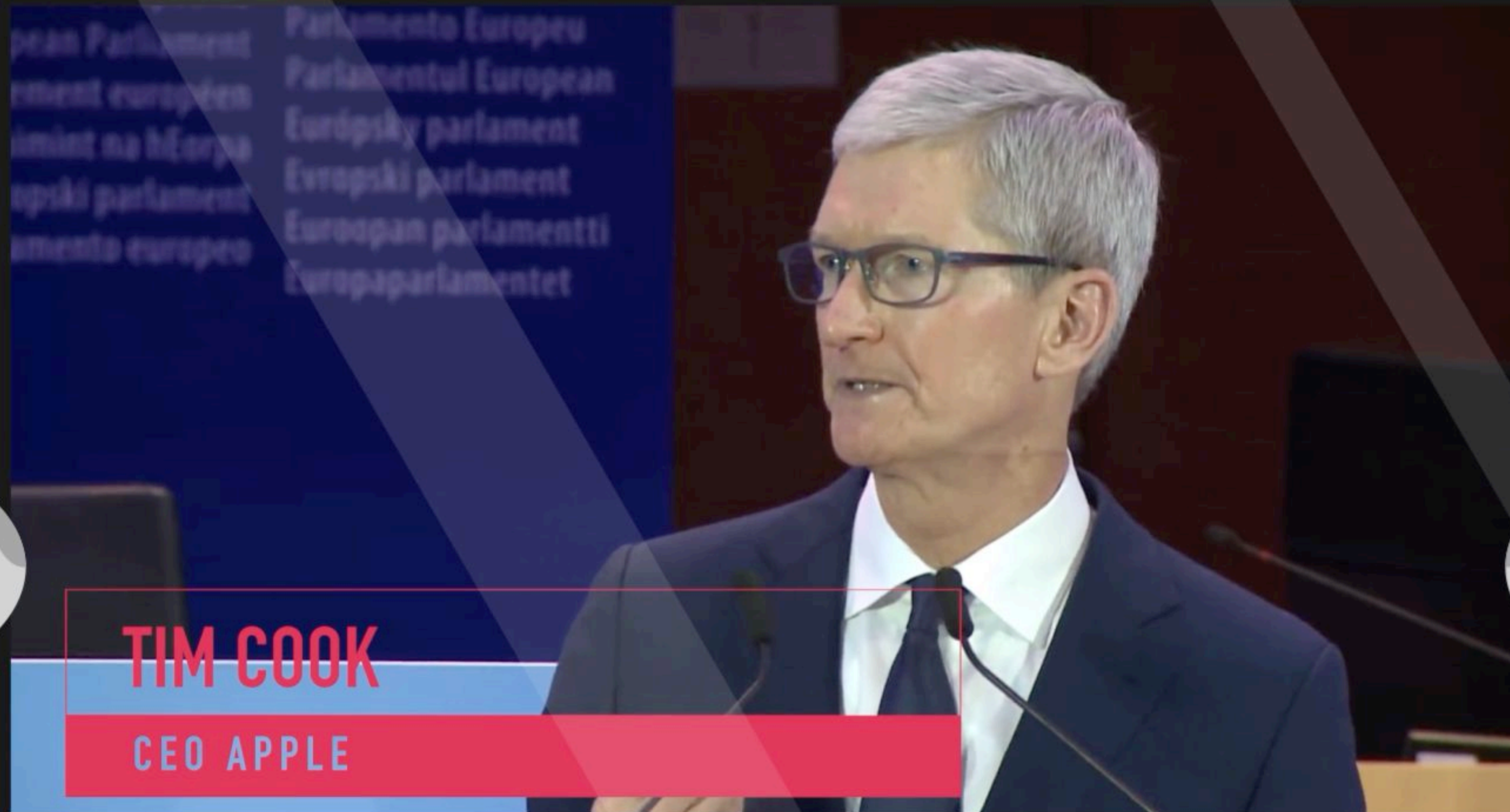
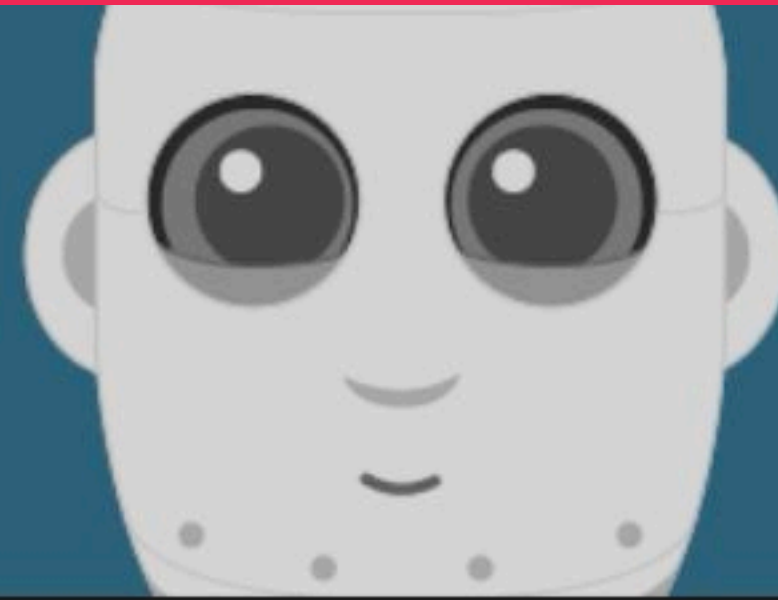
Stuart Russell in ‘Human Compatible’





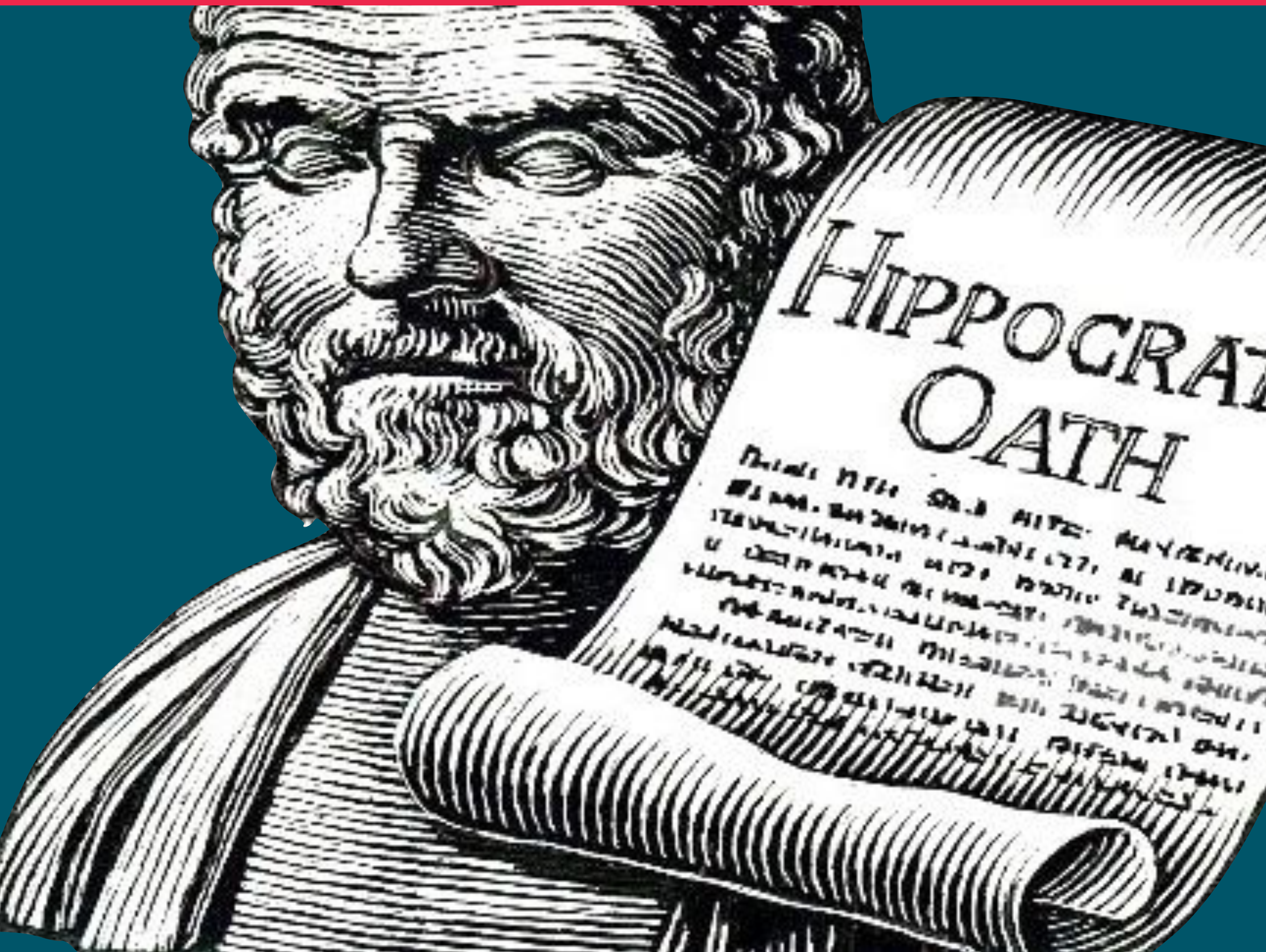


Technology can do great things, but it does not want to do great things – it doesn't want anything (Tim Cook)



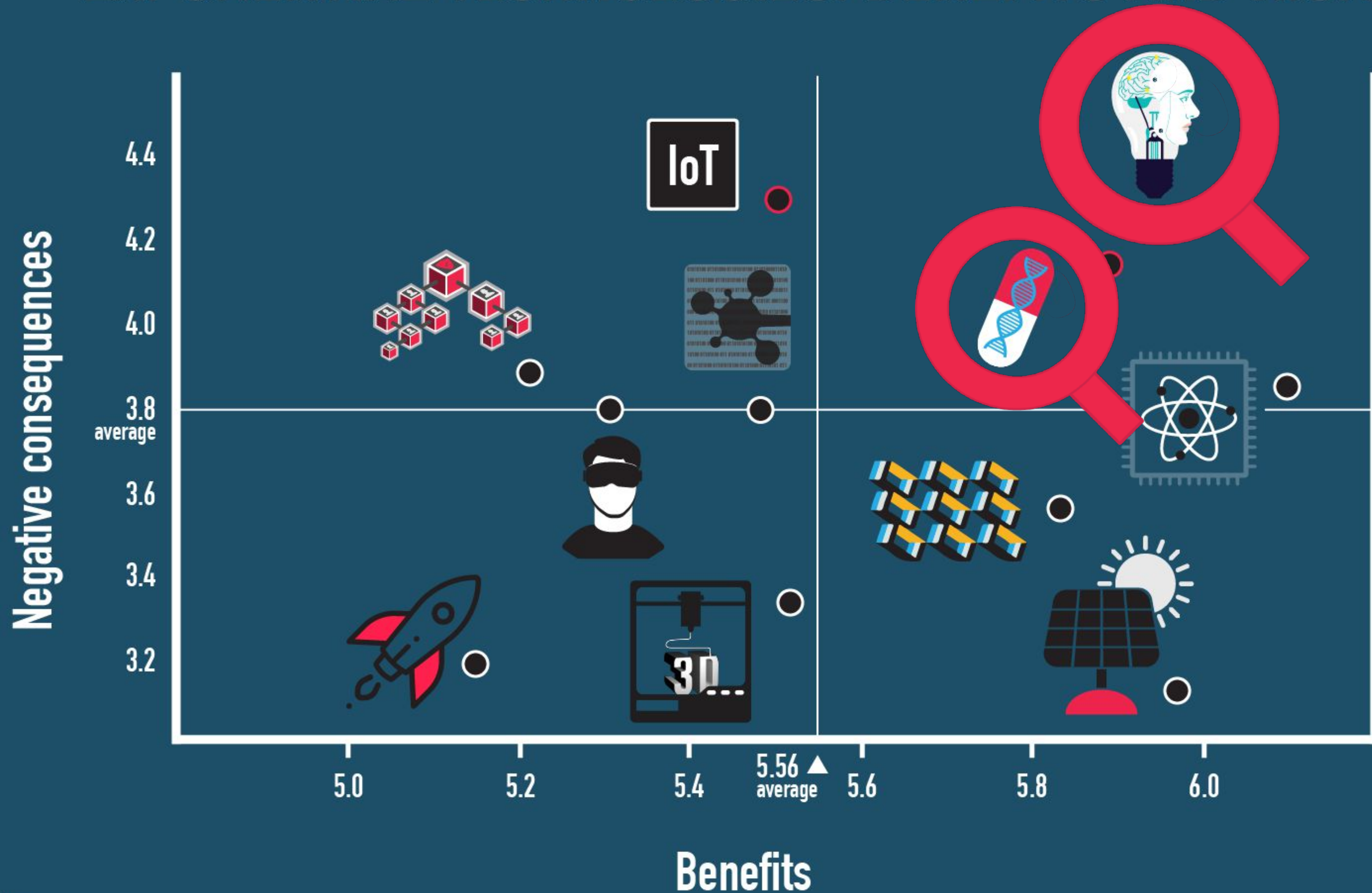


Do we need a 'HIPPOCRATIC OATH' for technologists and technology companies?



“I will ensure that
everything I invent,
enable, provide or sell
is
designed to further
HUMAN FLOURISHING”

EXPONENTIAL TECHNOLOGIES: BENEFITS AND RISKS



AI RISKS FALL UNDER SIX BROAD CATEGORIES WITH VARYING IMPACT ON INDIVIDUALS, BUSINESSES AND SOCIETY

Societal Risks

- Risk of Autonomous Weapons proliferation
- Risk of “intelligence divide”

Performance Risks

- Risk of Errors
- Risk of Bias
- Risk of Opaqueness or “black box” risk
- Risk of Explainability
- Risk of stability of performance

Economic Risks

- Job displacement risks
- “Winner-takes-all” concentration of power risk
- Liability risk
- Reputation risk

Security Risks

- Cyber intrusion risks
- Privacy risks
- Open source software risks

Ethical Risks

- “Lack of Values” risk
- Value Alignment risk
- Goal Alignment risk

Control Risks

- Risk of AI going “rogue”
- Inability to control malevolent AI



GLOBAL RISK OUTLOOK FOR 2019

■ Environmental

■ Technological

Top 5 Global Risks in terms of LIKELIHOOD

1  Extreme weather events

2  Failure of climate-change mitigation and adaptation

3  Natural disasters

4  Data fraud or theft

5  Cyber-attacks

■ Environmental

Bristol council votes to ban diesel cars in first for a UK city

Scheme to begin in 2021 in attempt to tackle illegal levels of air pollution



▲ Traffic in Bristol city centre. The ban would operate between 7am and 3pm in a central zone. Photograph: Ben Birchall/PA

Bristol is to become the first UK city to ban diesel cars from its streets as part of action to tackle illegal levels of air pollution.

■ Technological

Top 5 Global Risks in terms of LIKELIHOOD

1  Extreme weather events

2  Failure of climate-change mitigation and adaptation

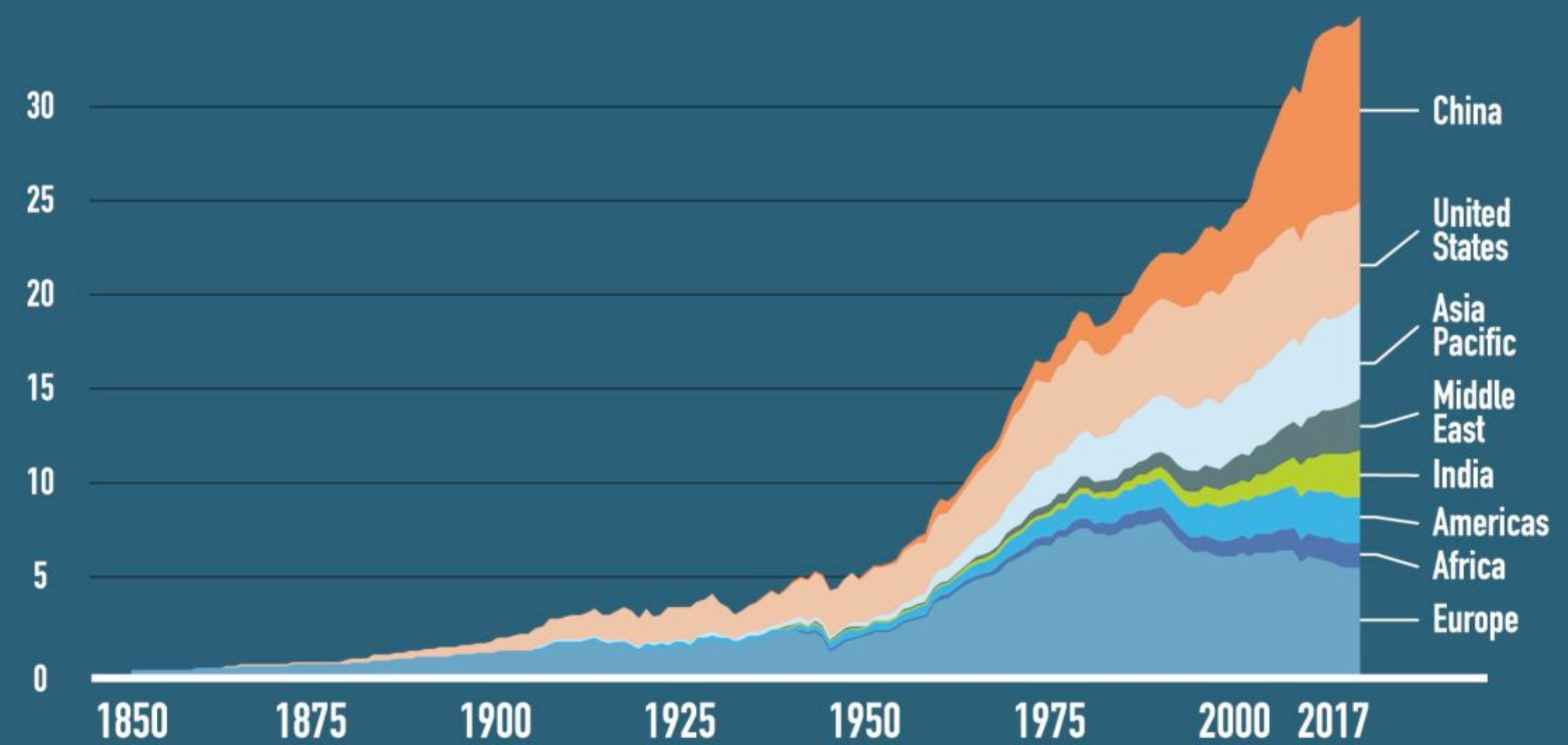
3  Natural disasters

4  Data fraud or theft

5  Cyber-attacks



CO2 EMISSIONS - IN GIGATONES



Source: The Economist

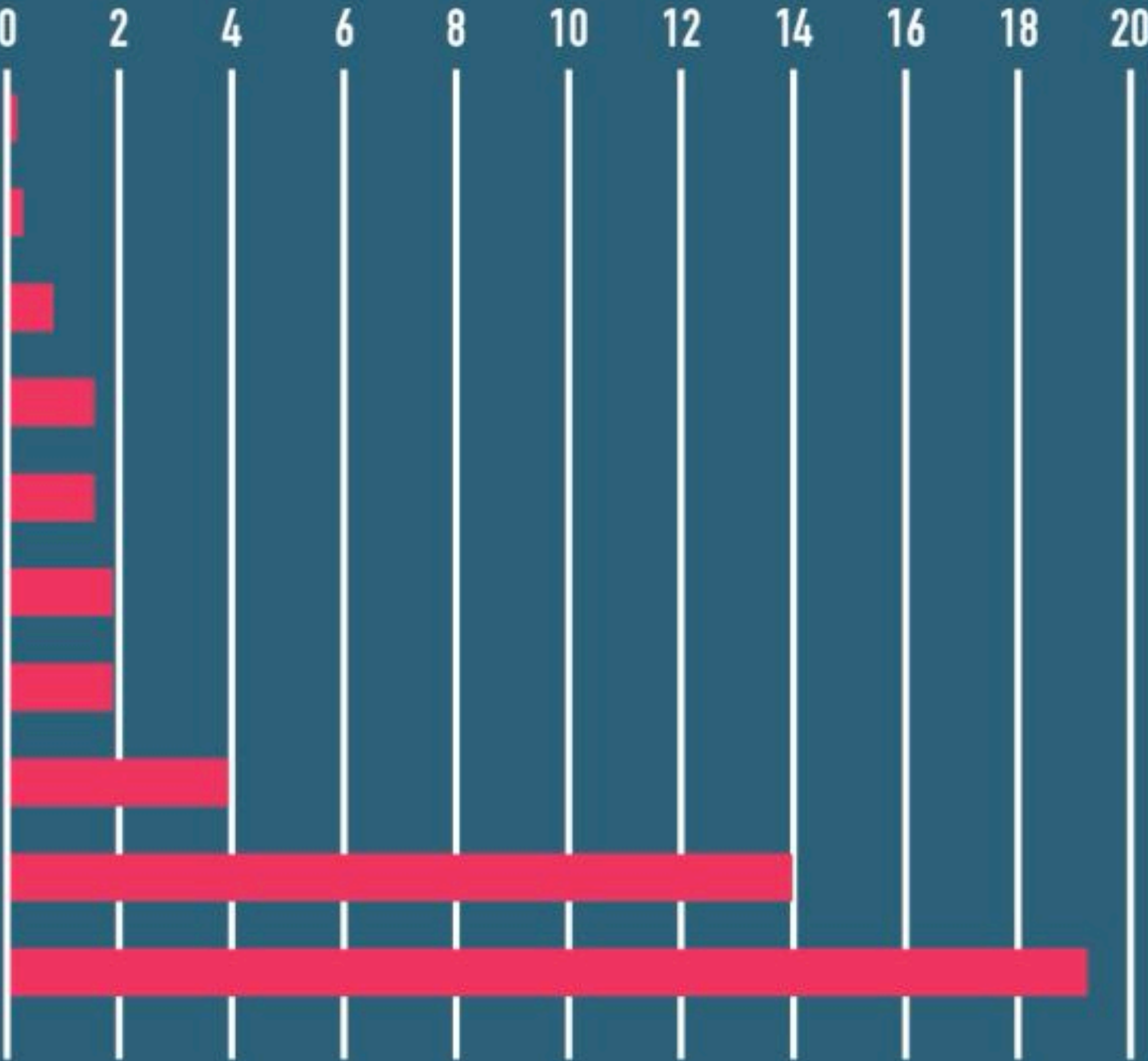
Gerd



GREENHOUSE GAS EMISSIONS FROM AGRICULTURAL PRODUCTION

(metric tons of carbon dioxide equivalent per million calories consumed)

- Sugar
- Wheat
- Rice
- Dairy
- Eggs
- Poultry
- Pork
- Fish (farmed)
- Sheep and goat meat
- Beef



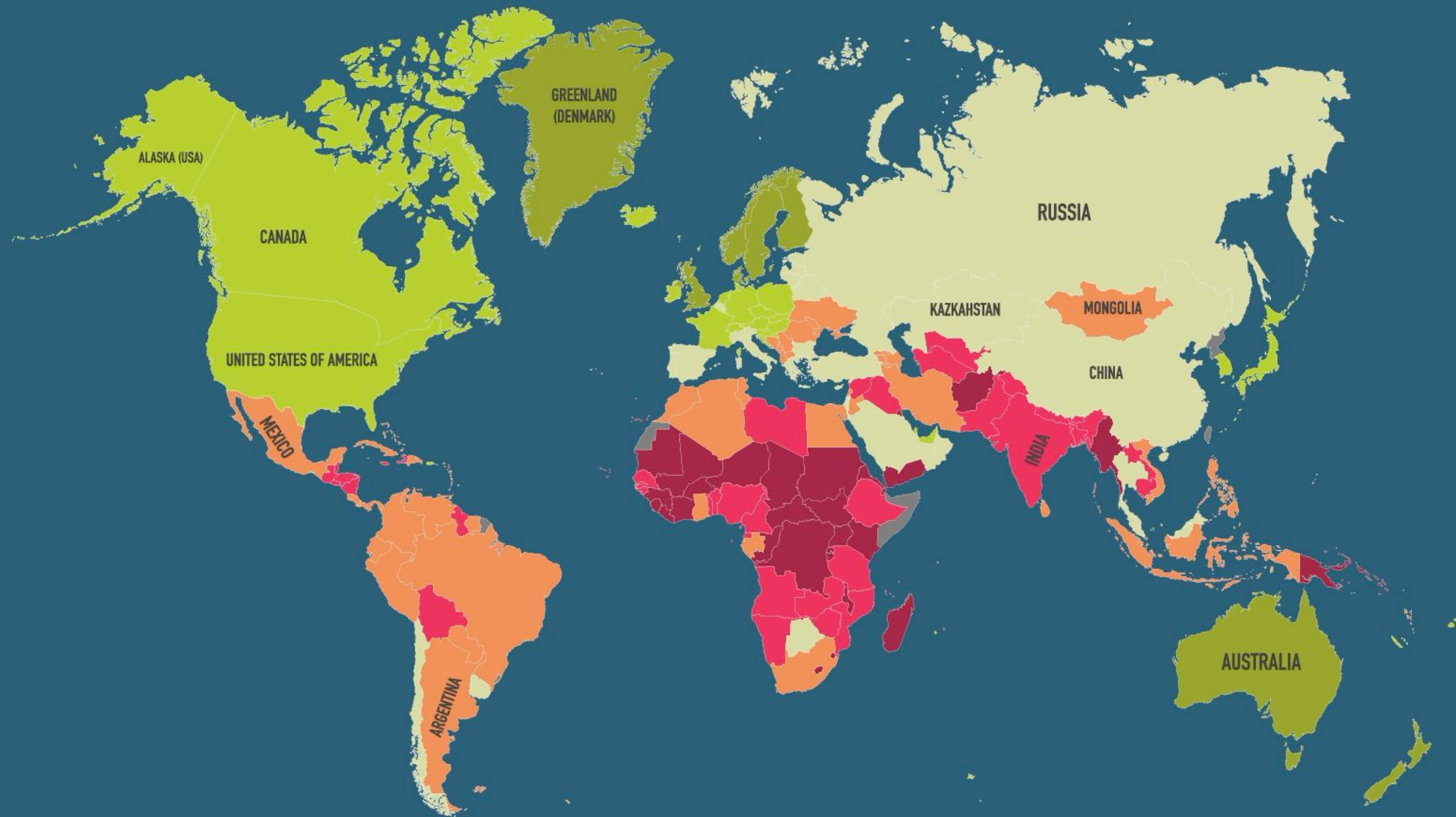
Source: World Resources Institute

Gerd

Least
at risk



Most
at risk



2 challenges: #ClimateEmergency (now) | #HumanEmergency (soon)



TRUST: Accountability | Responsibility | Transparency | Control | Regulation

COUNSEL

CONVENIENCE

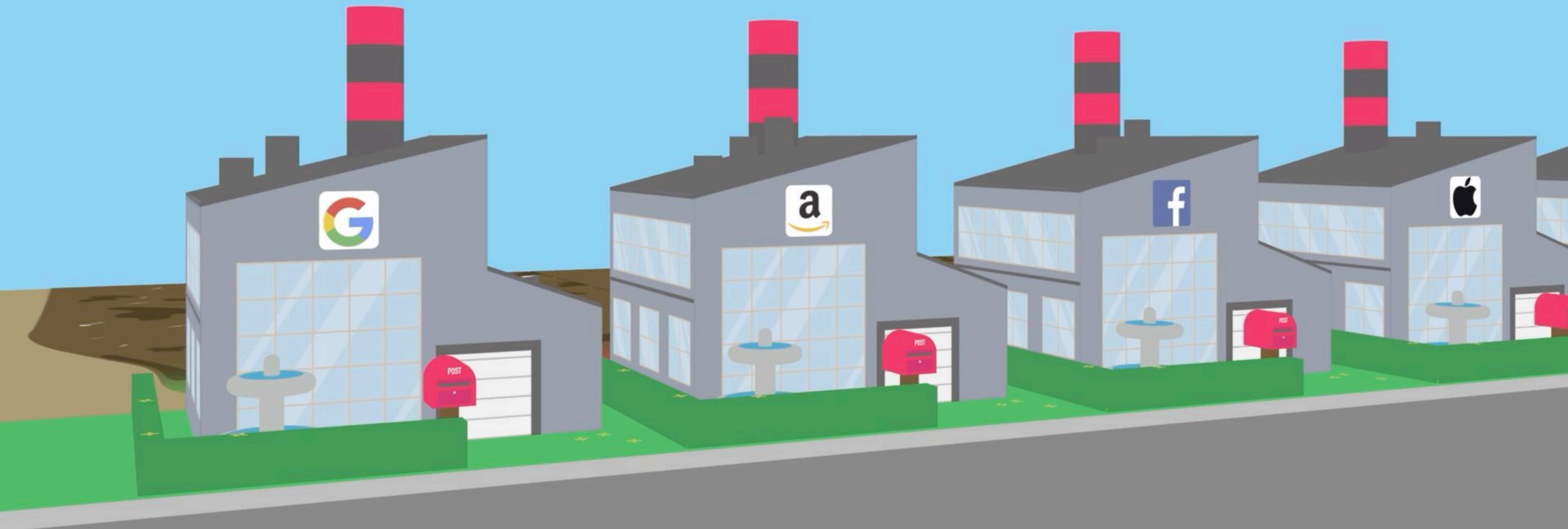
COMMERCE

CONTENT

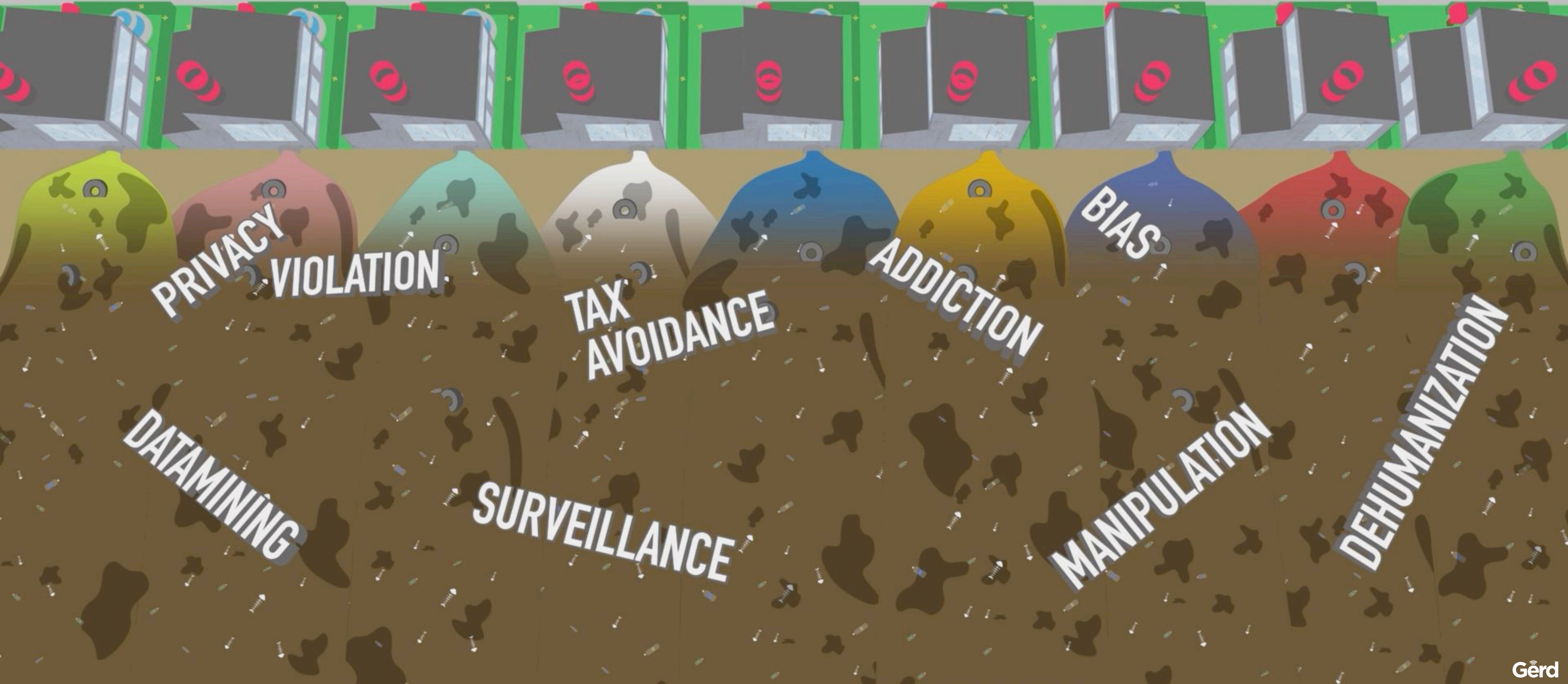
COMMUNICATION

COMMUNITY

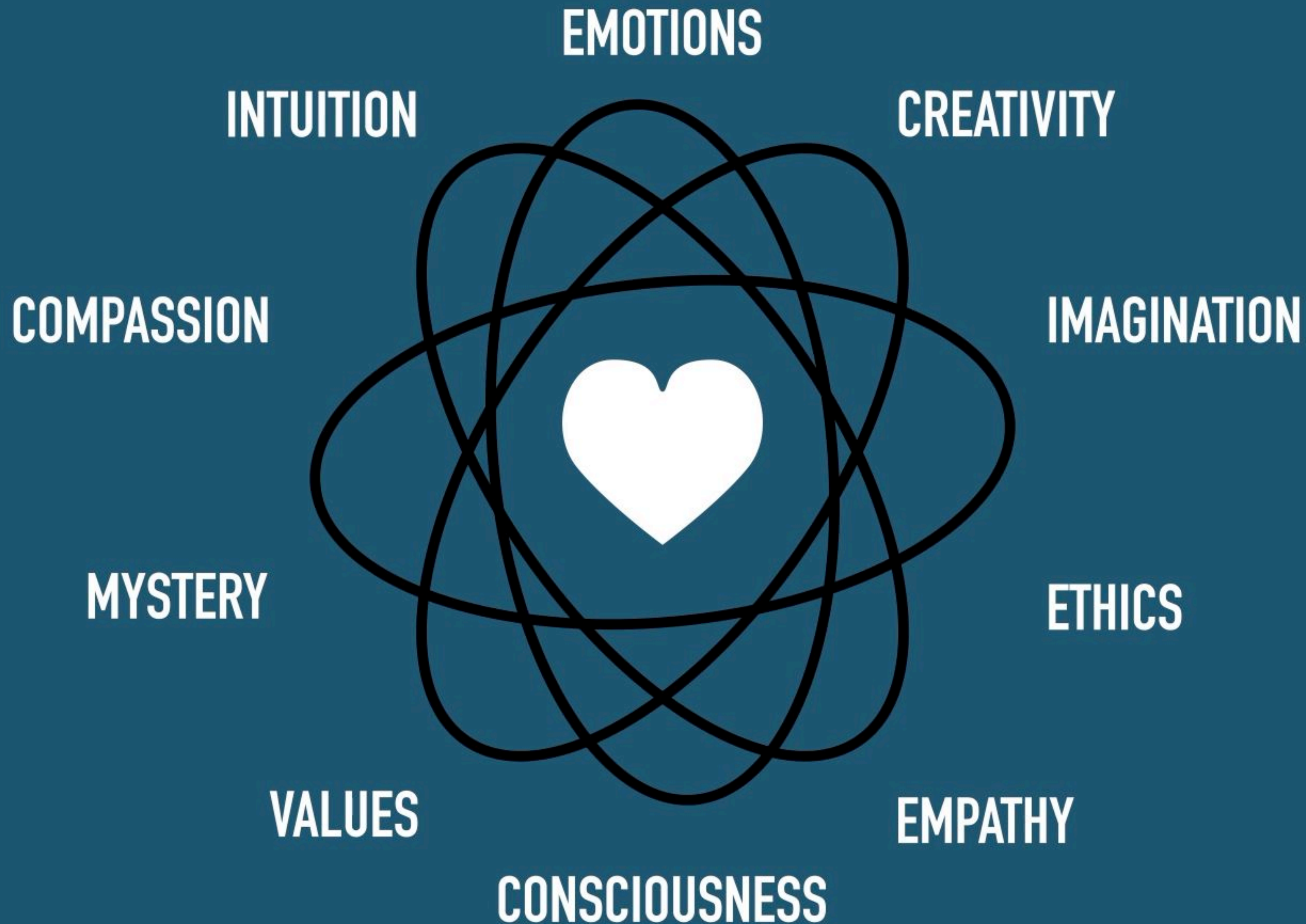
TRUST: Accountability | Responsibility | Transparency | Control | Regulation



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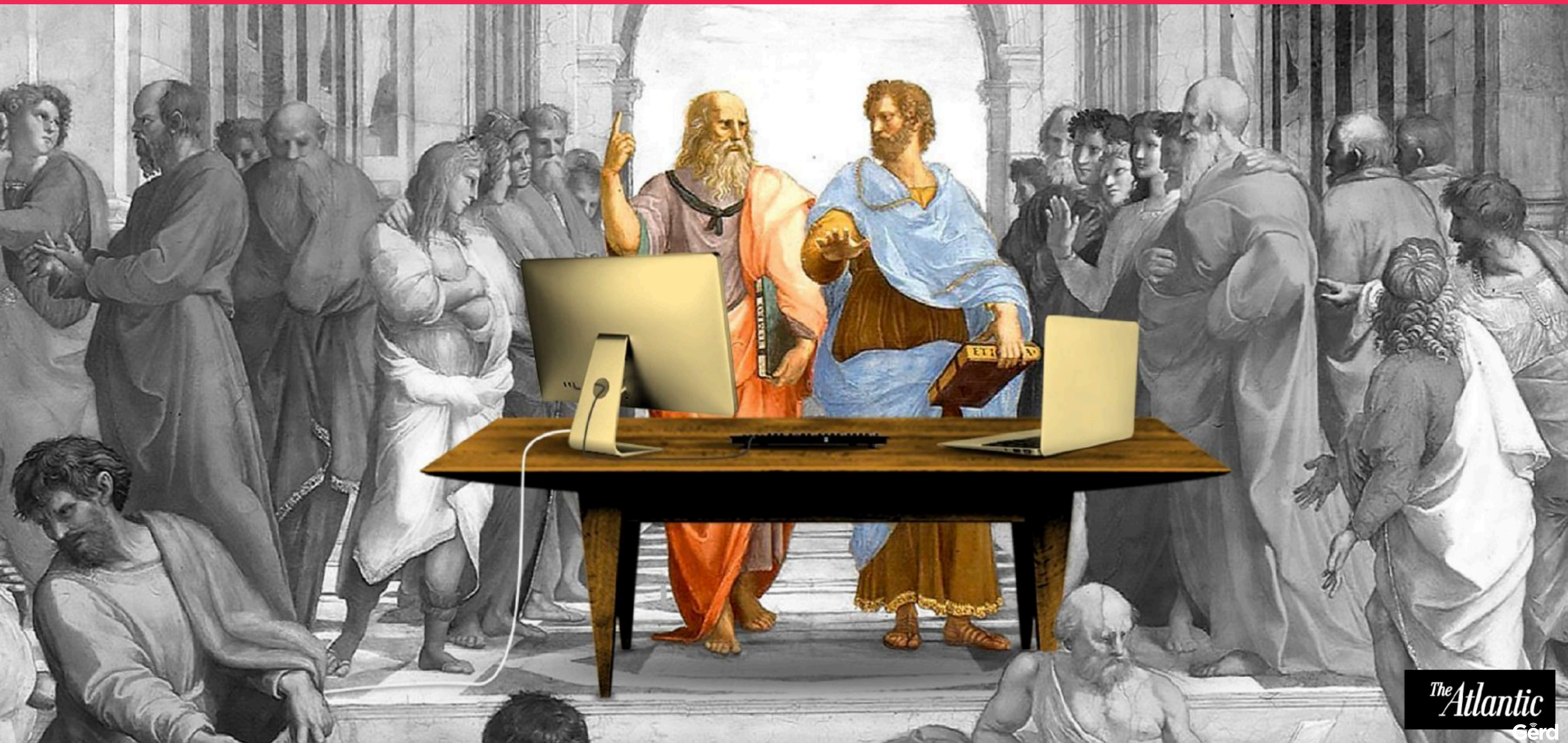


Do we need an EPA* for Humanity?





A new renaissance



A new economic logic to match exponential change: SUSTAINABLE CAPITALISM



PEOPLE



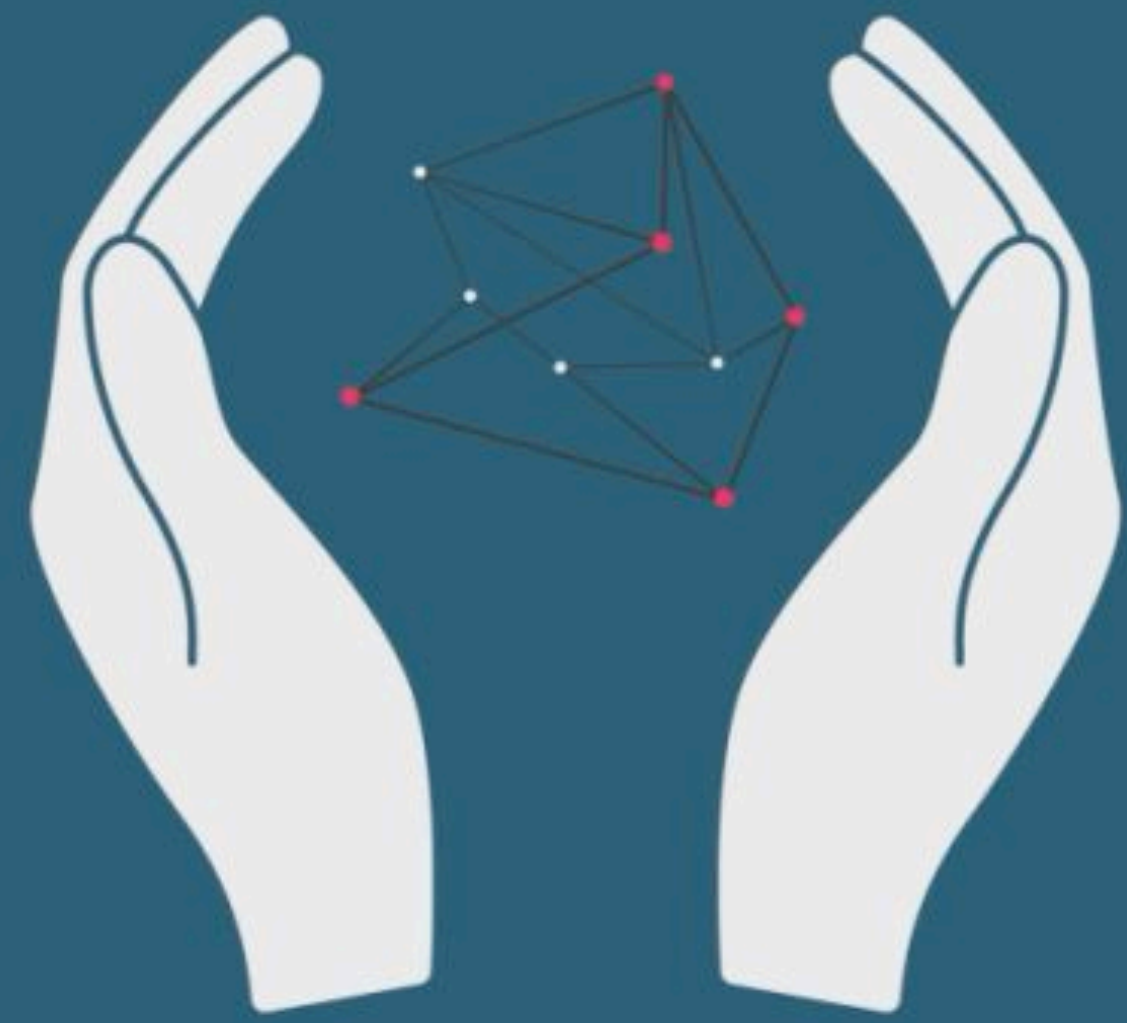
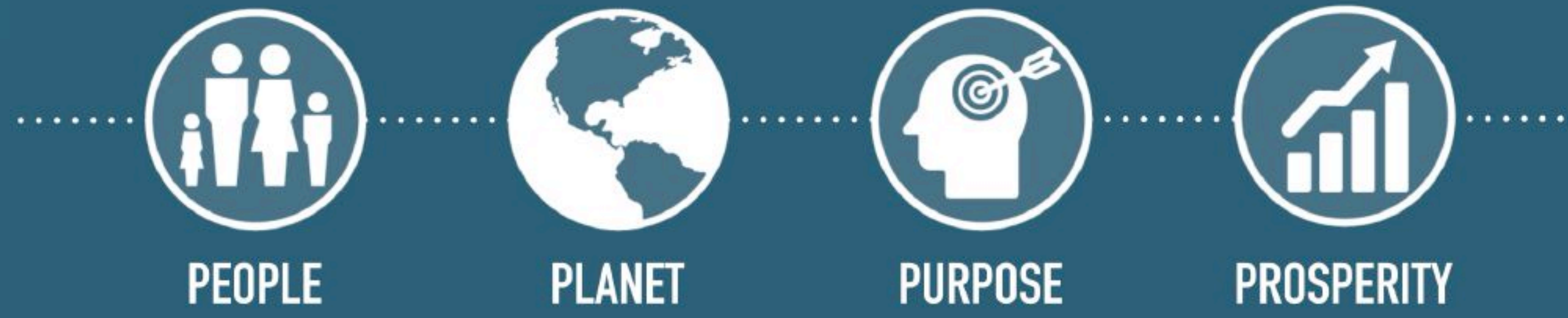
PLANET



PURPOSE



PROSPERITY



HOLISTIC



CIRCULAR



HUMAN

Not just shareholder return but STAKEHOLDER return

Shareholder Value Is No Longer Everything, Top C.E.O.s Say

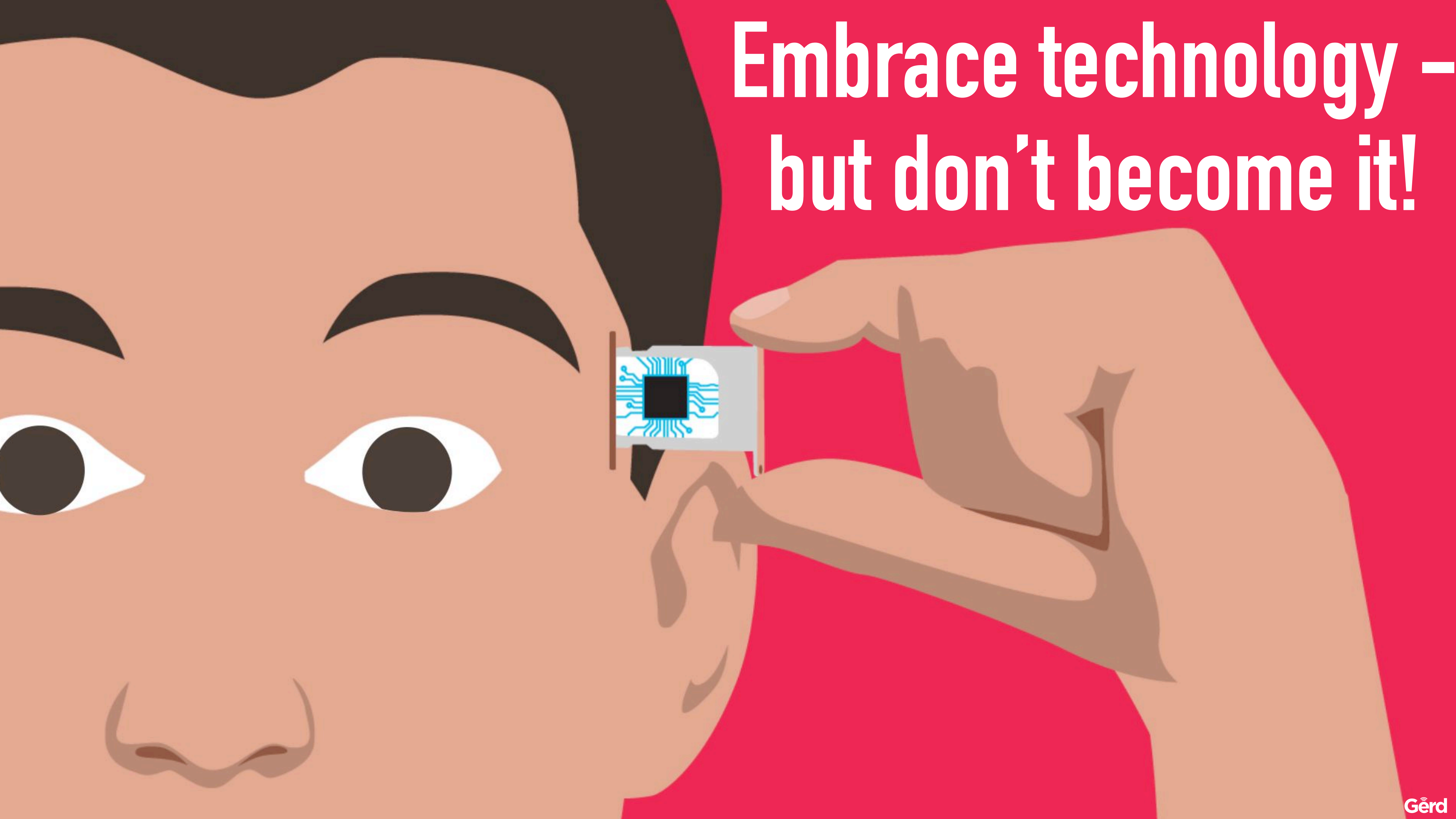
Chief executives from the Business Roundtable, including the leaders of Apple and JPMorgan Chase, argued that companies must also invest in employees and deliver value to customers.



The Future: Awesome humans on-top of amazing technology



**Embrace technology –
but don't become it!**





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