

MSE 2025

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# CM PRIVACY AND LAW

# NEW TECHNOLOGIES AND LAW

(a broader look to the developments)

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## TOPICS TODAY

- ▶ The farewell of the „silo-age“
- ▶ about exponential growth
- ▶ Hype Cycles 2000 - 2024
- ▶ Datafication / Datability
- ▶ Ethics / Digital Ethics
- ▶ Ethics in the Engineering
- ▶ Ethical guidelines for AI
- ▶ ISO 26000.2010 / [ecogood.org](http://ecogood.org)
- ▶ Outlook
- ▶ My Take Away...

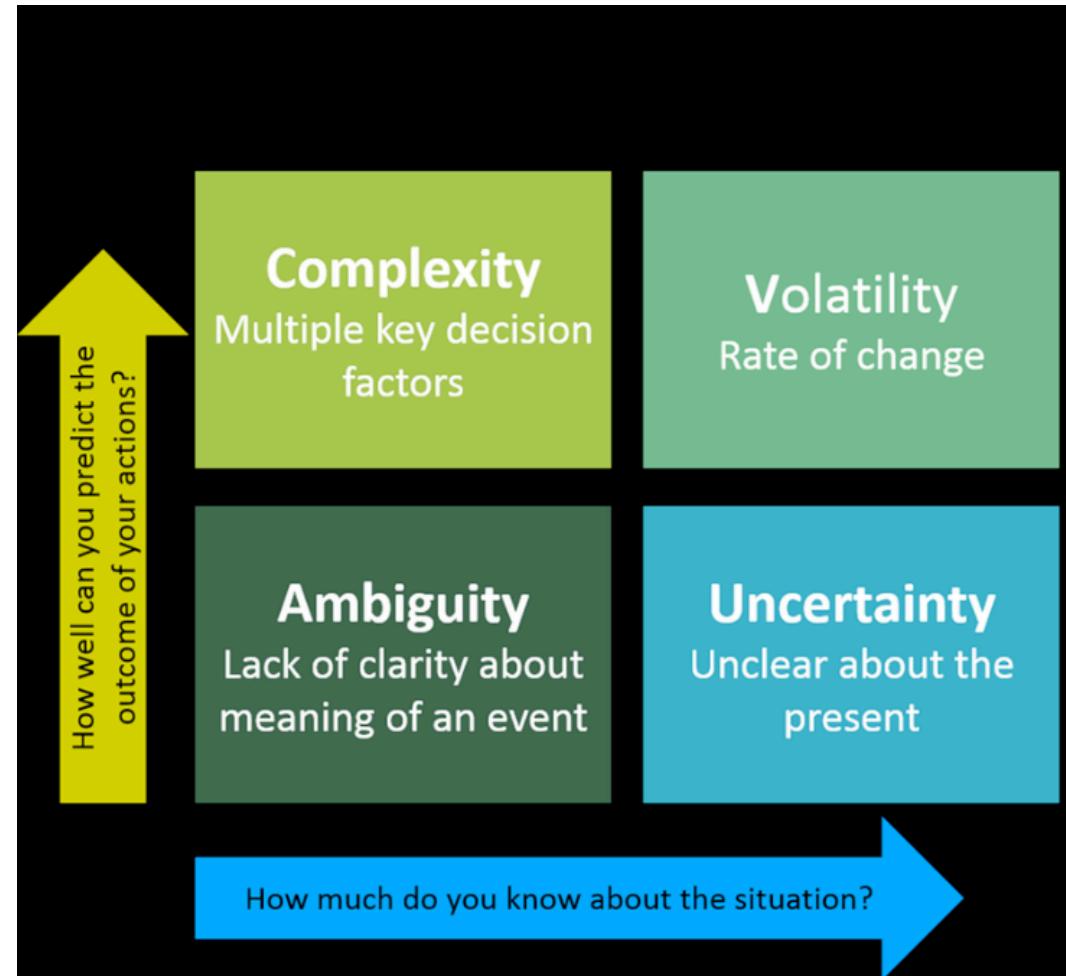
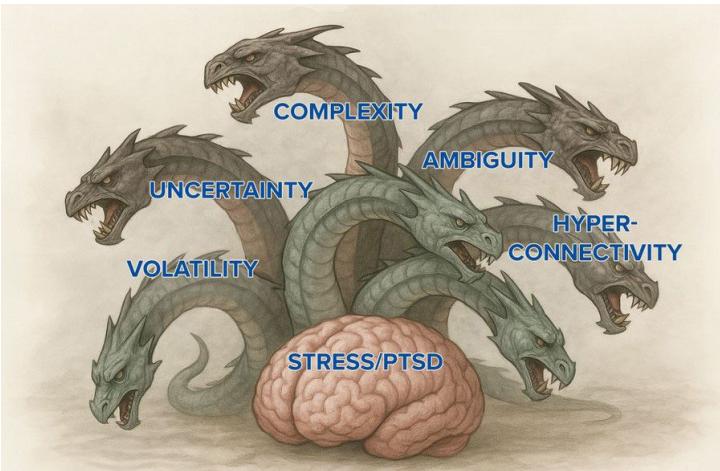
## Some actual questions...

- ▶ How to organise/coordinate the human power of this world in favour of the most and to protect the biological framework.
- ▶ How do we handle the climate change? Tipping points... How long can our ecosystems withstand stress. What happens after a not unlikely volcano eruption or meteorite impact?
- ▶ How do we gain reliable information?
- ▶ Are our political systems to solve actual challenges functional?
- ▶ Are our schools/educational institutions functional?
- ▶ Who owns the software we use?
- ▶ What can humans better than AI/LLMs/Computers/Roboters?
- ▶ How do you have to organise productive social organisations (companies) to perform best in a constant changing field?
- ▶ What mindset do we need to fit best (and stay healthy)?



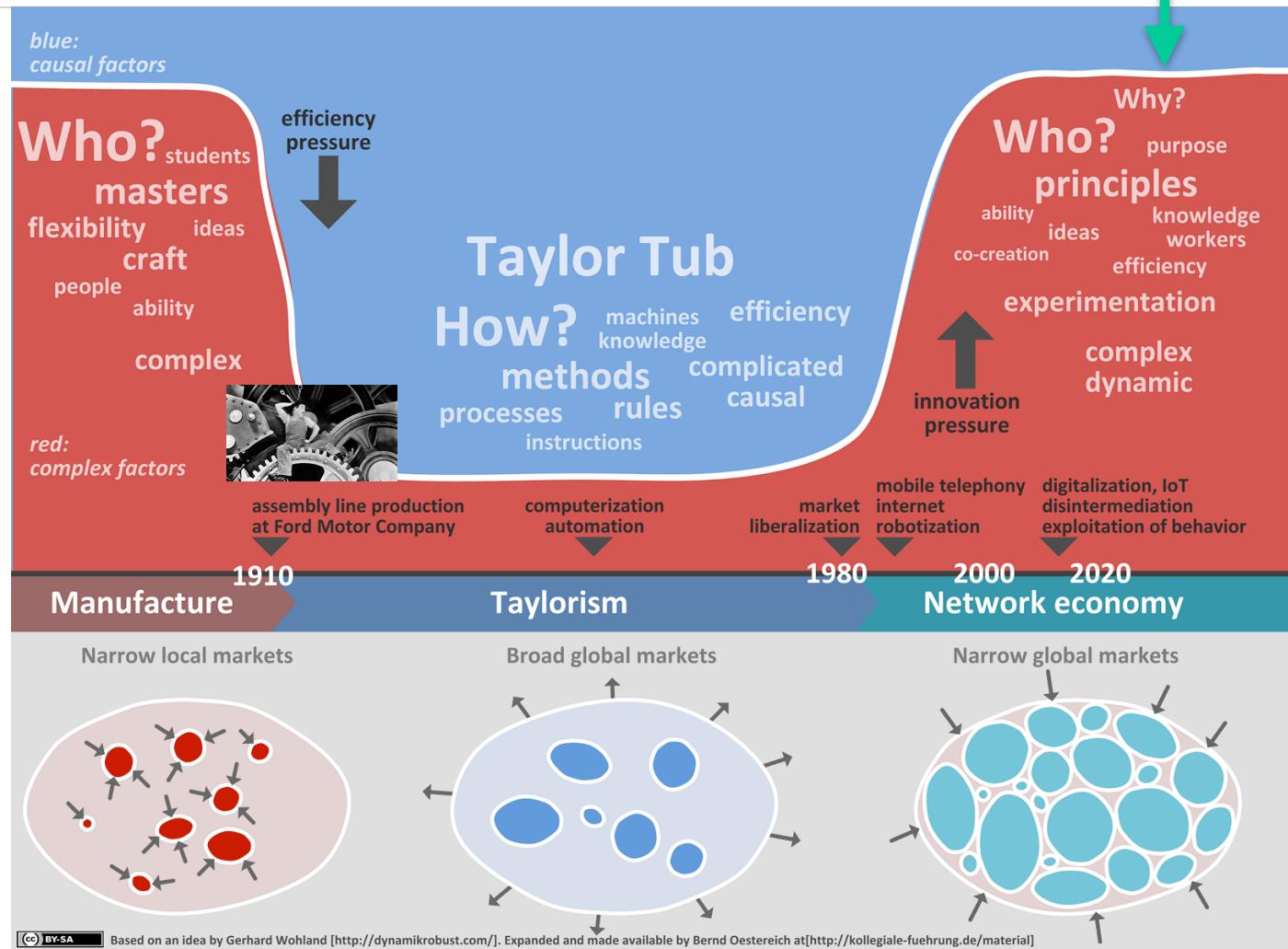
## „VUCA-WORLD“

But: VUCA produces stress!



Credits

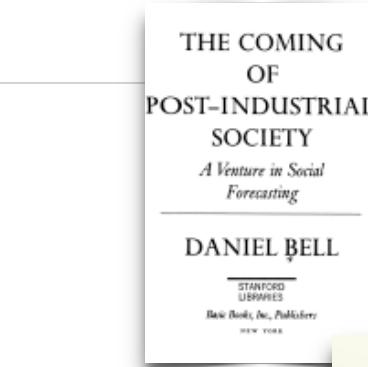
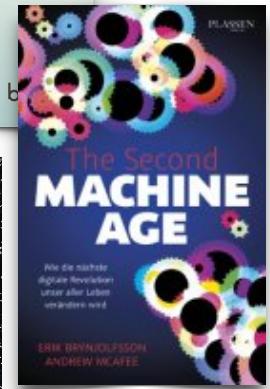
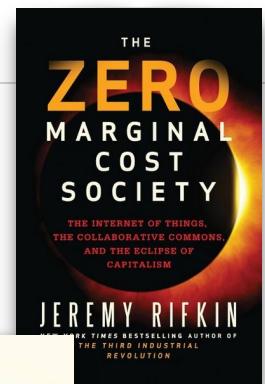
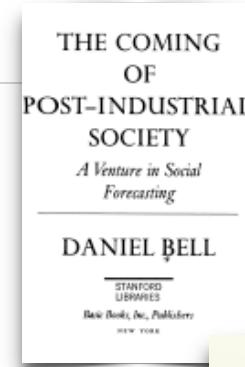
# „Silo-Culture“ - the Taylor Tub



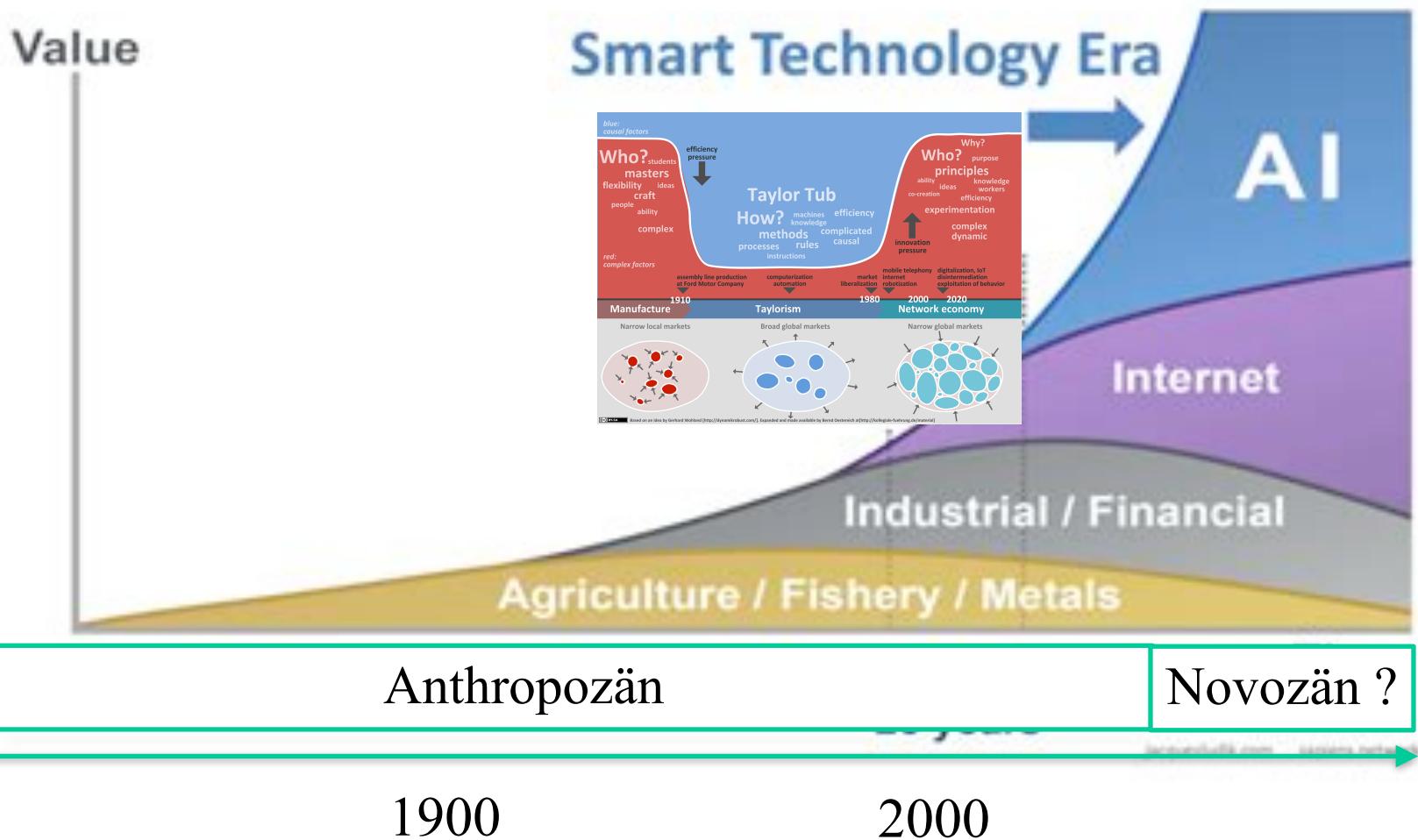
see also: [www.youtube.com/watch?v=XeG57LF8JL8](https://www.youtube.com/watch?v=XeG57LF8JL8)

## THE DEVELOPMENT WAS PREDICTABLE...

- ▶ Daniel Bell, **the Coming of the Post-Industrial Society, 1976** (1969)
- ▶ Nicolas Negroponte, former MIT Director, WIRED, **Being Digital (1995)**, one child one laptop
- ▶ Ray Kurzweil, **The Singularity is Near, 2005**
- ▶ Jeremy Rifkin, **The Zero Marginal Cost Society, 2014**
- ▶ Brynjolfsson/McAfee, **The Second Machine Age, 2014**
- ▶ Anders Indset, **Quantenwirtschaft, 2019**
- ▶ James Lovelock, **NOVOZÄN, 2021**



## Broader view...



# ...and even broader...

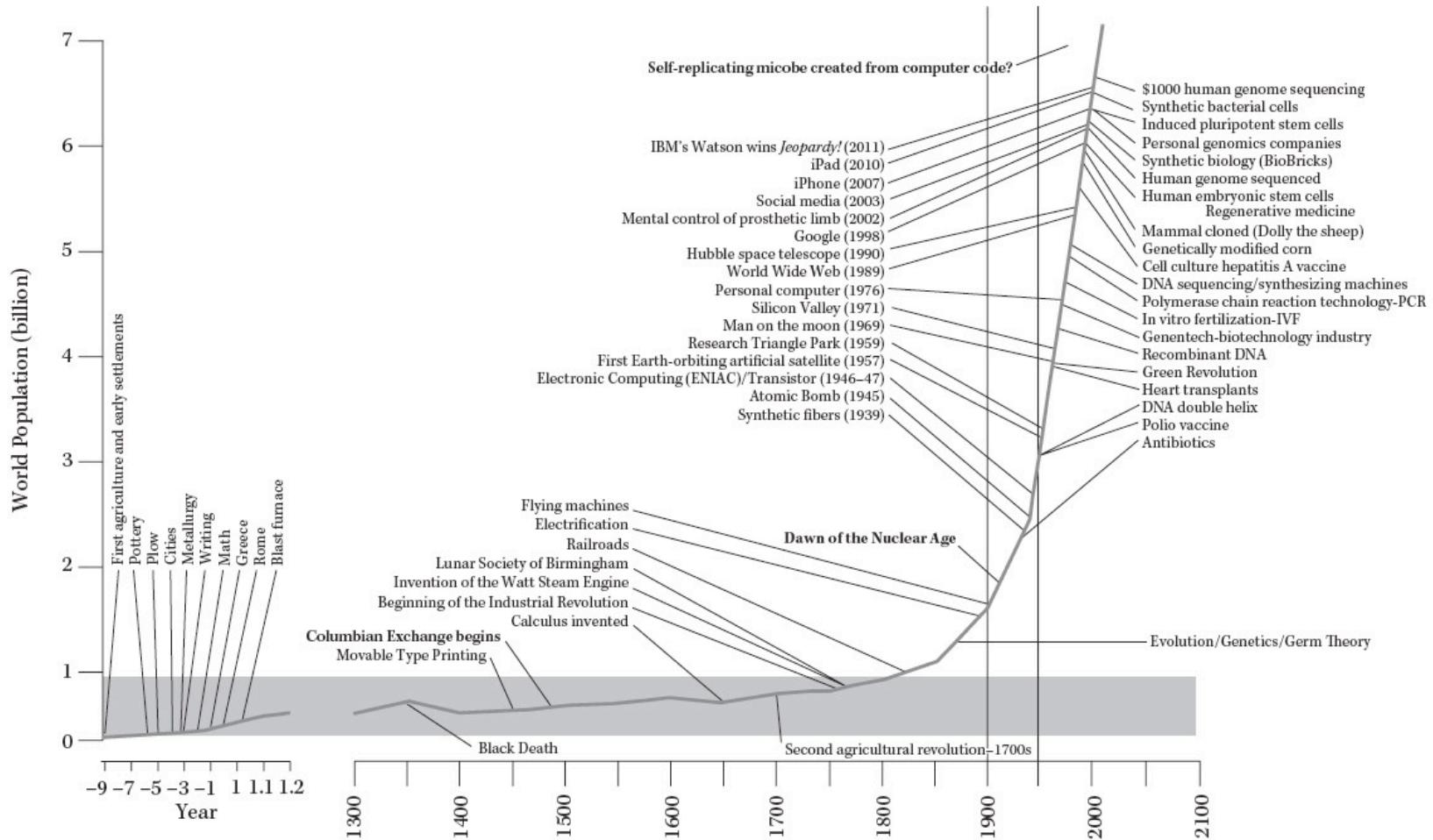


FIGURE C.1 Journey of *Homo innovatus* since the dawn of agriculture highlighting recent advances in technology and bioscience.

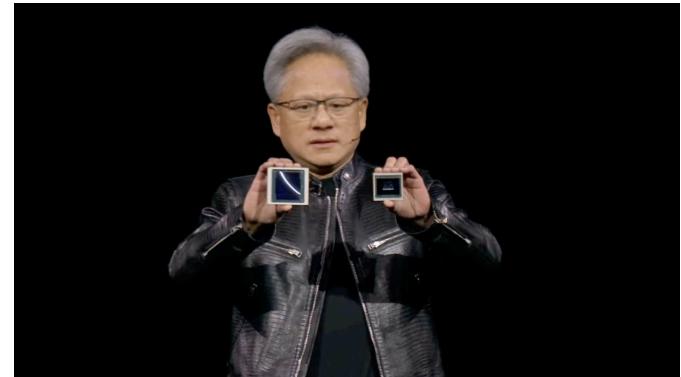
Source: The authors with the assistance of James Hudak. Modified from Figure 1 of Robert W. Fogel, "Catching Up With the Economy," *American Economic Review* 89/1 (1999): 2, with permission.

## What are the drivers?

- ▶ **Internet!** (= communication standards/networks) ca. 5.5 billion users (= **68%** of world population have access to internet (**2024**). Conservative counted. Most of them use a smartphone!
- ▶ **AND:**  
recent developments in key technologies (medical-, chemistry-, materials-, electronics-, energy-, bio-, opto-electronics, robotics, nano-, neuro-, genom-, AI-technology etc.) have a **self-amplifying effect!** Results to an (hyper-)exponential technological development.

## Moor's Law & its consequences...

- ▶ Moore's law from 1965 is just the observation that the number of transistors in an integrated circuit (IC) doubles about every two years (there are also other explanations).
- ▶ Actual technologies (2025) are still pushing its (quantum physical) limits.
- ▶ Exascale Computing:
  - **Cerebra** WSE-3: 900'000 cores on 46'225mm<sup>2</sup>
  - Nvidia H100: ca. 17'000 cores on 814mm<sup>2</sup>

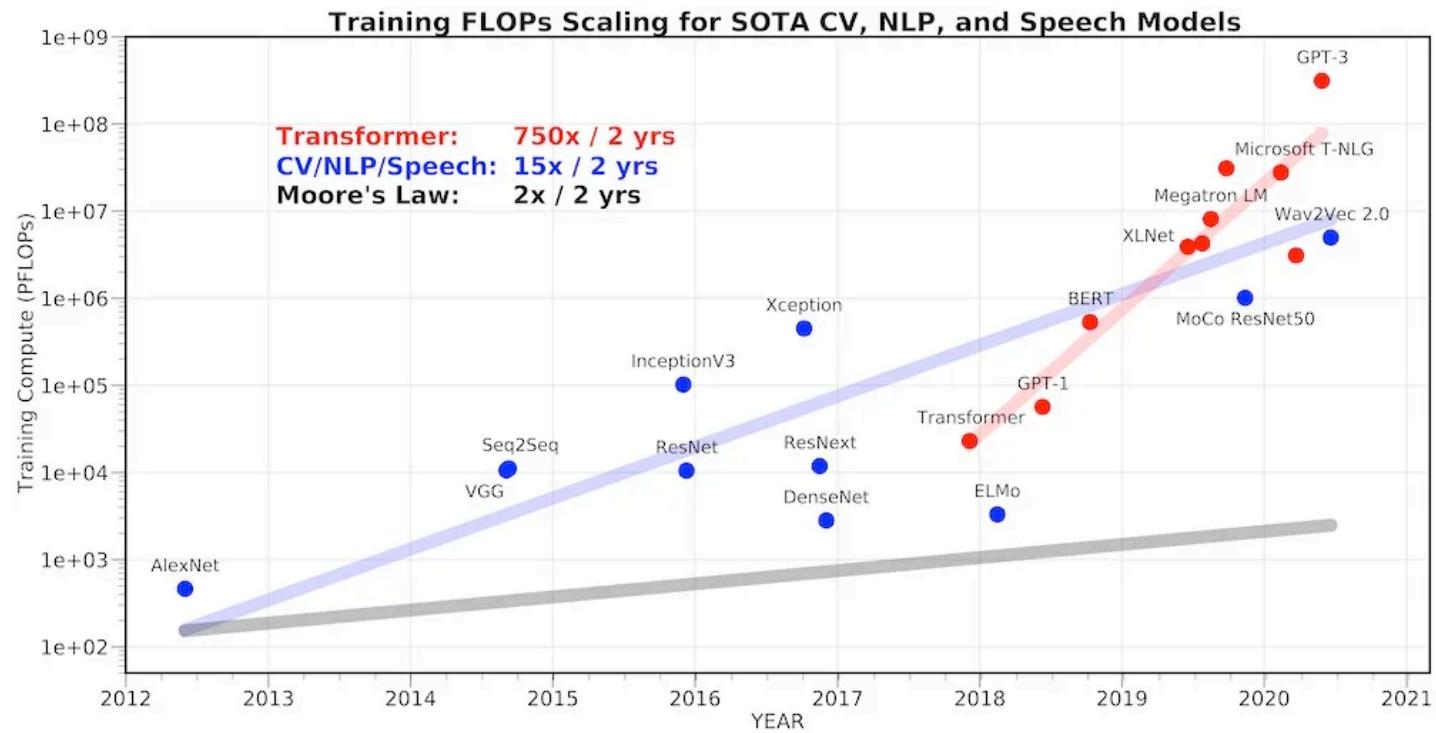


Jen-Hsun Huang:  
Nvidia Blackwell: within 2 years from 4000 to 20'000 TeraFLOPS. (200 Mio. Transistors on 1mm<sup>2</sup>)

But: Cerebra Condor Galaxy 3 has 8 ExaFLOPS...

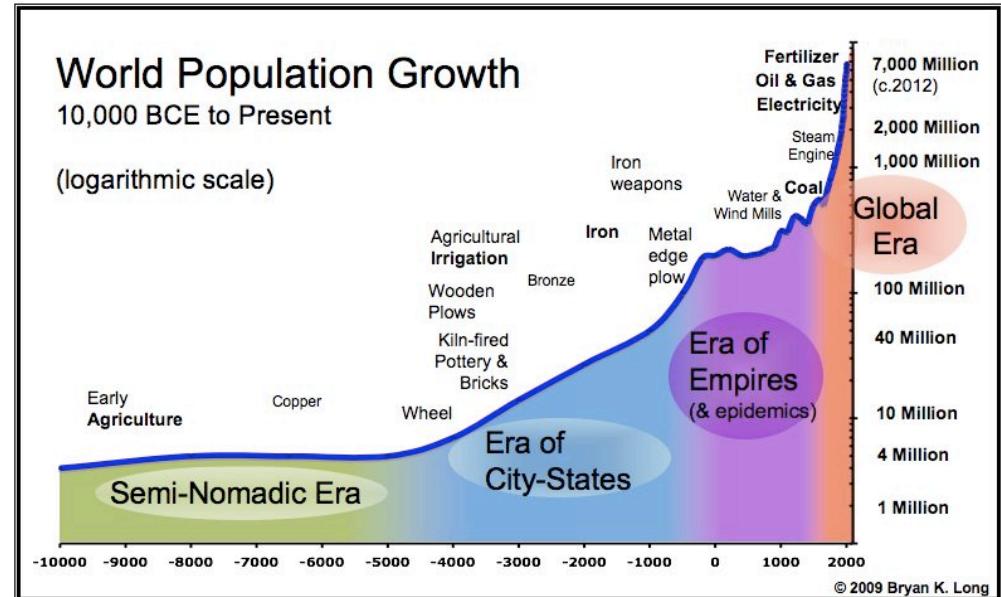
New methods need more calc.power for LLMs but these produce much better results

Compared:  
The human  
brain needs  
about 0.3  
kWh per  
Day = ca.  
260  
calories/  
day  
[source]

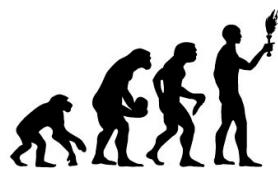
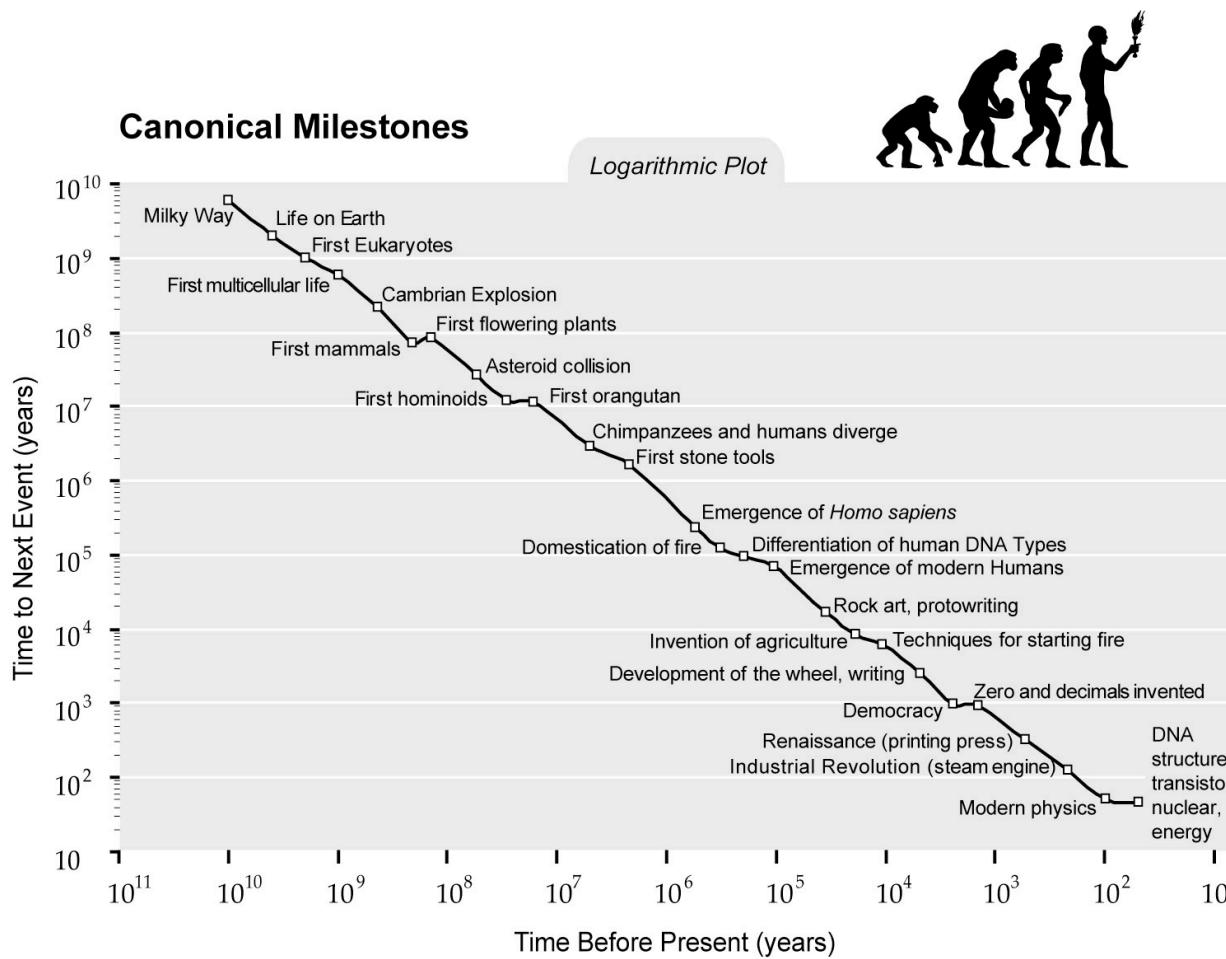


# Datafication (collecting and sharing information)

- ▶ Human culture means datafication  
(collecting data about „the world“ to plan & predict)
- ▶ 3'000 b.c - early Egyptians (taxes, crop, people, army)
- ▶ 16./17. Century - towns & kingdoms collected more and more data (taxes, crop, people, army)
- ▶ 18. Century - age of enlightenment (taxes, crop, people, army, companies)
- ▶ It's unmistakable: we try to build „**digital twins**“ of our world! That has advantages but also dangers („**the map is not the territory!**“). We need a constant validation!

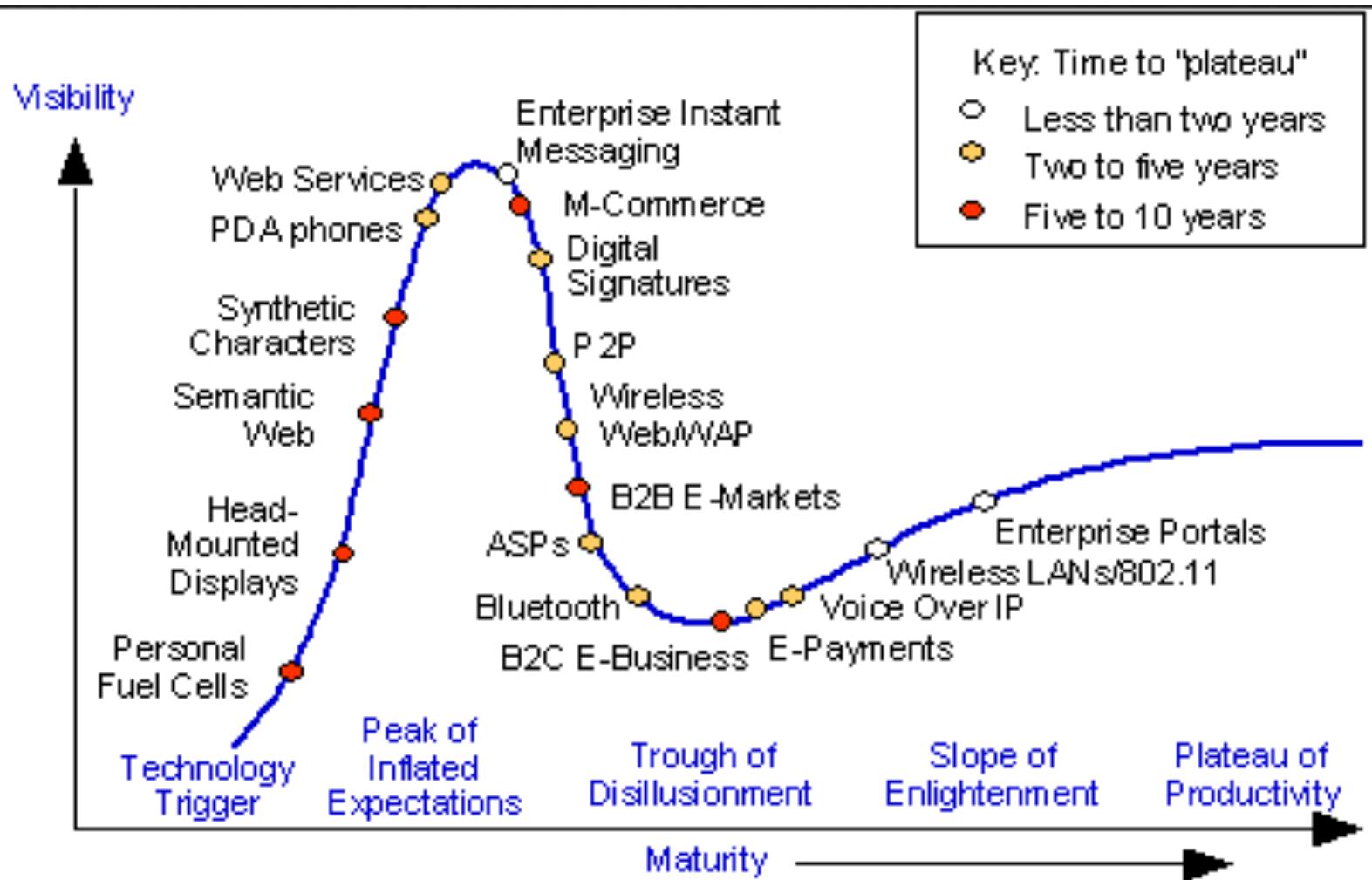


## DOES EXIST IN NATURE A LOGIK FOR AI ? (RAY KURZWEIL)



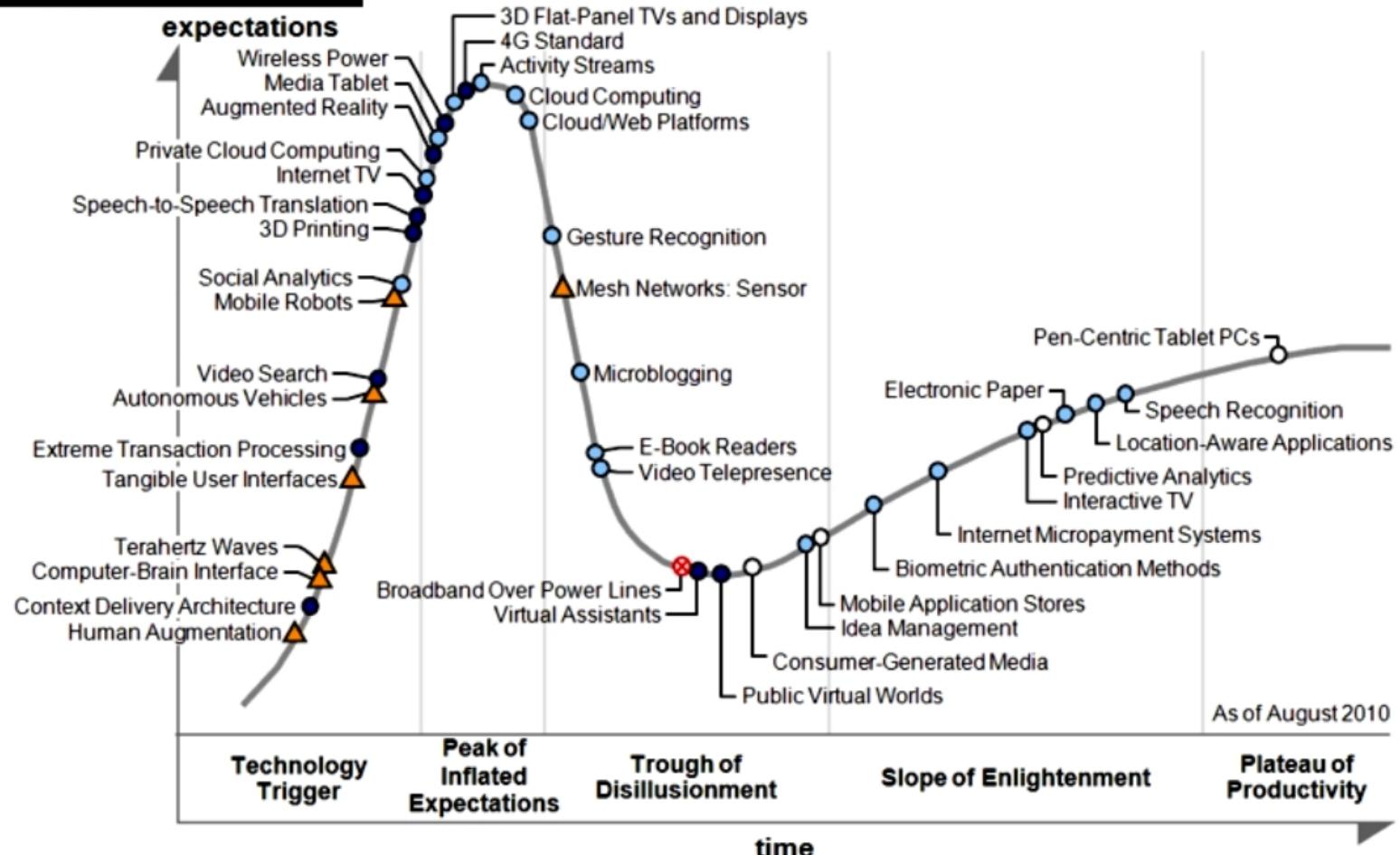
James Lovelock follows that idea also - but coming from biological science (GAIA-hypothesis)

## HYPE CYCLE - YEAR 2000...



# HYPE CYCLE - YEAR 2010...

## 2010 EMERGING

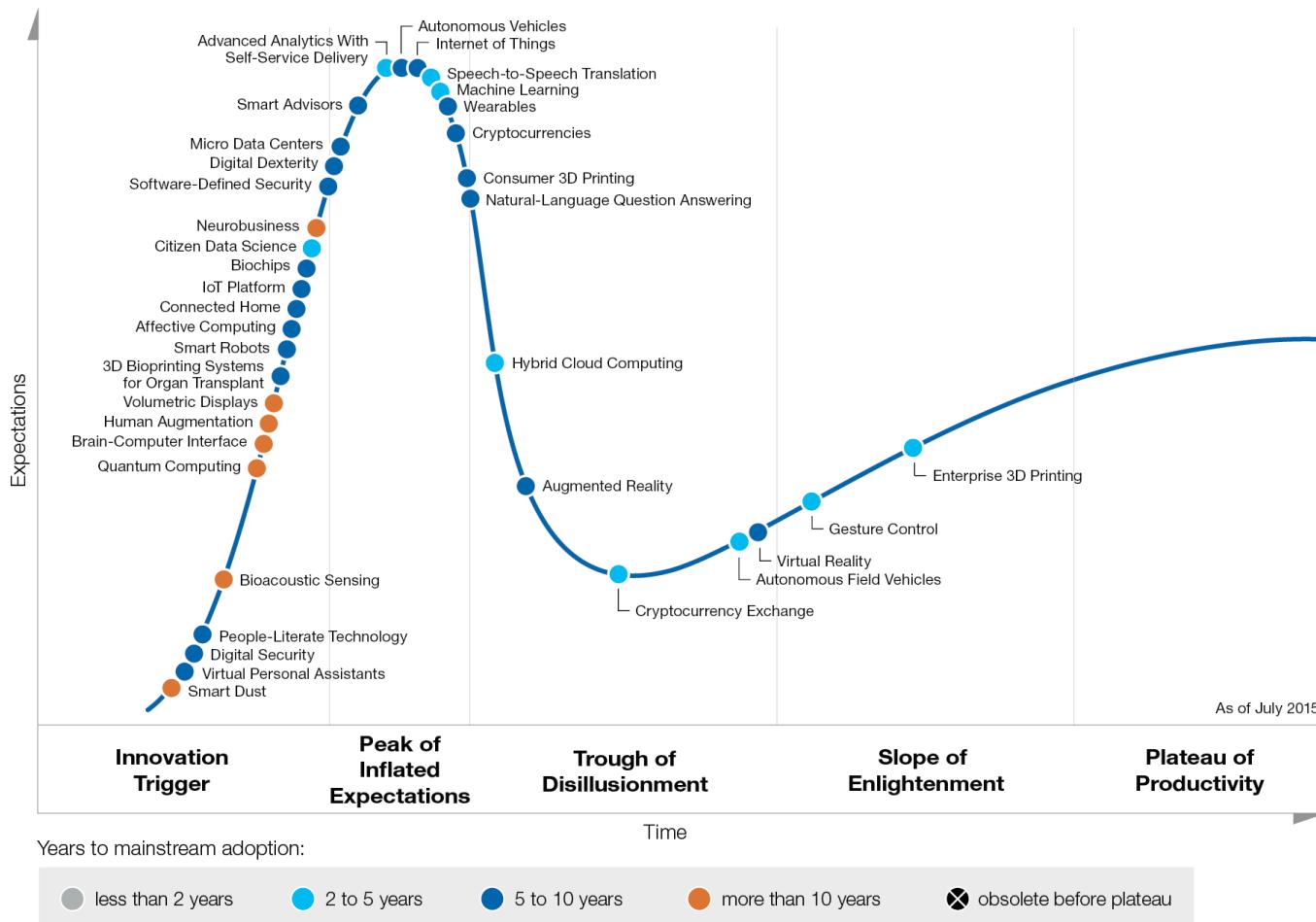


Years to mainstream adoption:

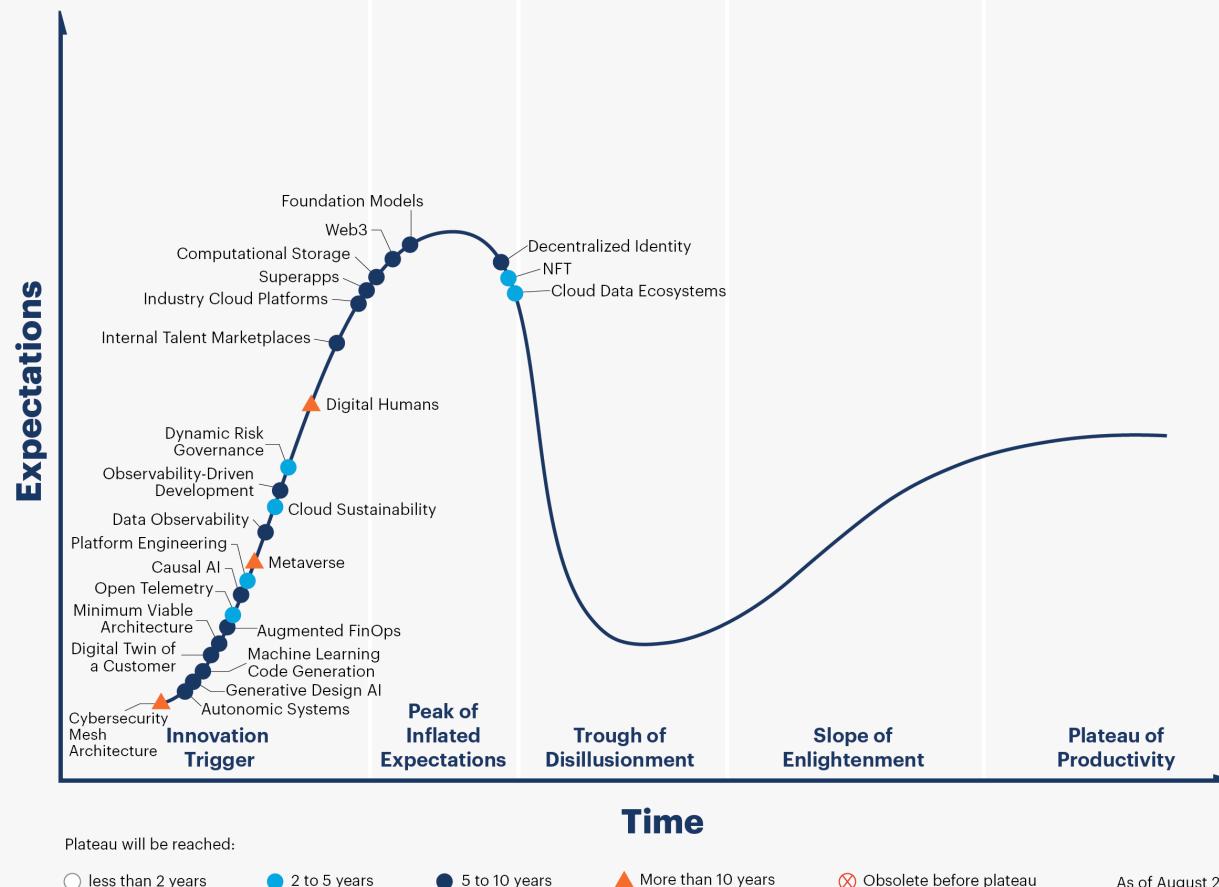
○ less than 2 years    ● 2 to 5 years    ● 5 to 10 years    ▲ more than 10 years    ✘ before plateau

# HYPE CYCLE - YEAR 2015

## Emerging Technology Hype Cycle



# Hype Cycle for Emerging Tech, 2022

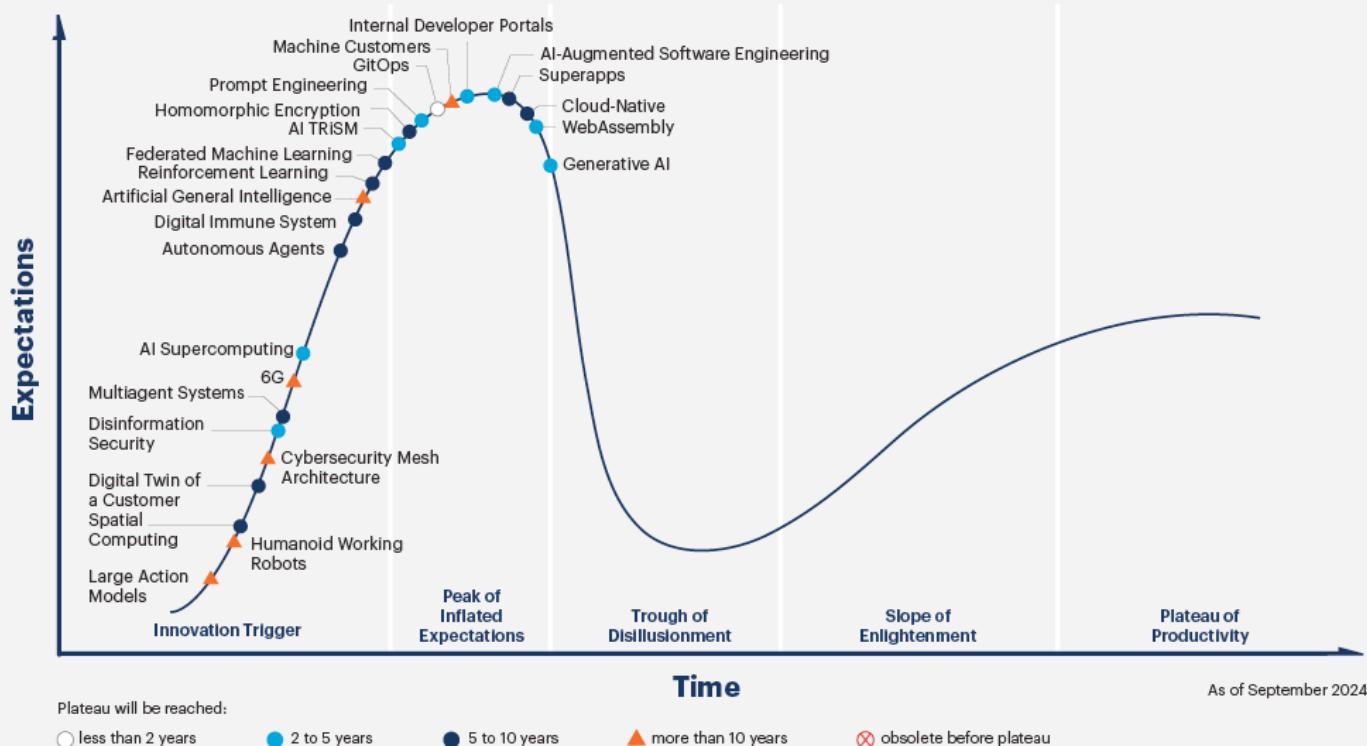


[gartner.com](http://gartner.com)

Source: Gartner  
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# Hype Cycle for Emerging Technologies, 2024



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**Gartner**

„AI TRiSM“: AI TrustRisk and Security Management

## DATABILITY (Data & Responsibility)

- ▶ DATABILITY means the **responsible** and sustainable (**ETHICS!**) handling of data (or data media).
- ▶ The word was created to express the fact that data processors also have an important **responsiBILITY** towards **systems, users** and **the future**. The term has triggered a value discussion and a drive to measure responsibility in the creation of IT systems as well as corporate responsibility. It has an effect on **future legislative projects**.
- ▶ More & more experts warn about the inherent **AI-risks!** The industries and regulators started (EU: 2018) to develop legal solutions! [[link](#)]
- ▶ **EU AI Office** (January 2024)
- ▶ **EU AI Act** (In force since 2.2.25 - some parts will come into force 2.8.25 and 2.8.27)

## Increased challenge with new technologies & their applications

**Complexity & loss of control ("black box")**

**vs.**

**Responsibility & Ethics**

- ▶ Can "ethically correct behaviour" be built into machines and SW? Can manufacturers be forced to do so?
- ▶ Example:  
„In autonomous driving, a "child or grandmother-accident"-rule would be unethical, since the right to life is absolute for both, i.e. cannot be offset.“ (thats **Duty Ethic**).  
**Utilitarians**, on the other hand, see it as permissible if one human life could save two.  
Also in AI-applications: intense discussions how to regulate (actual: EU AI Act)

# Ethical/Legal Risks vs. Business Case

WILL KNIGHT BUSINESS MAY 17, 2024 10:54 AM

# **OpenAI's Long-Term AI Risk Team Has Disbanded**

The entire OpenAI team focused on the existential dangers of AI has either resigned or been absorbed into other research groups, WIRED has confirmed.



 **Post**

 **Jan Leike**  @janleike · 17. Mai  
Yesterday was my last day as head of alignment, superalignment lead, and executive @OpenAI.

 528  2.687  12.235  5 Mio.  

 **Jan Leike**  @janleike · 17. Mai  
It's been such a wild journey over the past ~3 years. My team launched the first ever RLHF LLM with InstructGPT, published the first scalable oversight on LLMs, pioneered automated interpretability and weak-to-strong generalization. More exciting stuff is coming out soon.

 11  66  1.595  370.772  

 **Jan Leike**  @janleike · 17. Mai  
I love my team.

I'm so grateful for the many amazing people I got to work with, both inside and outside of the superalignment team.

OpenAI has so much exceptionally smart, kind, and effective talent.

 6  41  1.330  377.702  

 **Jan Leike**  @janleike · 17. Mai  
Stepping away from this job has been one of the hardest things I have ever done, because we urgently need to figure out how to steer and control AI systems much smarter than us.

## Ethics

- ▶ Ethics is a sub-discipline of philosophy that deals with human moral action. The word "ethics" is derived from the Greek word "ethos", which refers to customs, traditions and actions.
- ▶ Ethics attempts to define recommendations for action, valid norms and values for various areas of life and situations on the basis of justifiability and reflection. Like law, it belongs to "practical philosophy".
- ▶ Ethics ≠ morality.  
There are many "morals" (religious, political etc., but only one ethic. Morality = practical ethic = system of norms that tries to describe the "right" action that should be valid for „all". Example: „stealing is wrong”, „give elderly people the seat!”  
Ethics on the other hand asks \_ some behaviour/rules are right or wrong. Example: „under which circumstances lying is allowed?”
- ▶ Principles are important. e.g. **Golden Rule:** "**Do not do to others what you do not wish done to yourself**" (Confucius, but also Kant). But is this rule always „right”?
- ▶ Not everything that is technically possible should be built! Ethics is a form of self restriction!

# Selftest - Duty Ethicist or Utilitarian?

Make the test! (german)

Angenommen, ein Terrorist hat eine Bombe versteckt, die 1000 Menschen in den Tod reissen würde. Darf man die fünfjährige Tochter des Terroristen foltern, um sein Geständnis zu erzwingen und die Bombe ausfindig zu machen? Man hat guten Grund zur Annahme, dass die Folter der Tochter den Terroristen zur Aussage bewegen wird. Eine andere Alternative ist nicht in Sicht.

1/5

- a) Ja, in diesem Fall wäre es moralisch richtig, die Tochter zu foltern, schliesslich steht das Leben von 1000 Menschen auf dem Spiel.

- b) Nein, Folter ist unter keinen Umständen erlaubt. Man darf die Tochter nicht instrumentalisieren. Das wäre eine Verletzung der menschlichen Würde.

Zurück Weiter

Stellen Sie sich vor, Sie seien Chirurg und vor Ihnen liegen fünf Patienten: Der eine braucht dringend ein Herz, zwei einen Lungenflügel und zwei eine Niere. Alle fünf haben dieselbe seltene Blutgruppe. Leider konnte bisher kein Spender gefunden werden. Die Zeit drängt. Genau in diesem Moment spaziert ein kerngesunder Mann in die Klinik, der die richtige Blutgruppe hat. Sie könnten den jungen Mann schmerzlos töten, seine Organe entnehmen und den fünf Patienten das Leben retten. Ist es moralisch richtig, das Leben des gesunden Mannes zu opfern und dadurch fünf Menschenleben zu retten?

2/5

- a) Ja, man sollte den Mann schmerzlos töten, seine Organe entnehmen und dadurch den fünf Patienten das Leben retten. Das ist hart, aber aus moralischem Gesichtspunkt das einzige Richtige, denn jedes Leben zählt gleich viel und fünf Leben sind mehr wert als eines.

- b) Nein, den Mann darf man auf keinen Fall töten. Wo kämen wir da hin? Niemand würde sich mehr trauen, zum Arzt zu gehen und man würde in ständiger Angst leben. Das hätte fatale Folgen für die Gesellschaft.

- c) Nein, man sollte den Mann nicht töten, unter keinen Umständen. Schliesslich hat jeder Mensch ein unbedingtes Recht auf Leben. Gewisse Dinge darf man nicht tun, egal ob dabei viel Gutes herauskommt.

Zurück Weiter

genommen, Sie sind sehr arm und leben in einem Zustand ohne Sozialversicherung. Ihre beiden Kinder leiden einer schweren Lungenerkrankung und brauchen regelmässig Antibiotika. Sie sehen keinen anderen Weg als den Diebstahl. Ist es in diesem Fall moralisch vertretbar, in Apotheken zu überfallen und sich das Medikament legal zu besorgen, damit die Kinder wieder gesund werden?

3/5

- a) Nein, ein Diebstahl ist moralisch nicht zu rechtfertigen. Es gibt ein Recht auf Eigentum, das unter keinen Umständen verletzt werden darf – selbst wenn Menschenleben auf dem Spiel stehen.

- b) Nein. Es hätte gefährliche Folgen, wenn jeder für sich entscheiden würde, wann ein Rechtsbruch aus angeblich moralischen Gründen erlaubt ist. Das würde in gesellschaftlichem Chaos enden. Diese Konsequenz müssen wir vermeiden.

- c) Ja, in diesem Fall wäre der Diebstahl der erforderlichen Medikamente erlaubt. Das ist zwar rechtswidrig. Aber es stehen schliesslich die beiden Leben der Kinder auf dem Spiel.

Zurück Weiter

Ein Passagierflugzeug wurde von Terroristen entführt und fliegt direkt auf ein bewohntes Hochhaus inmitten einer grösseren Stadt zu. Wenn nicht eingegriffen wird, wird das Flugzeug ins Haus knallen. Die Passagiere, aber auch die Hausbewohner kämen ums Leben. Darf man das Flugzeug abschiessen?

4/5

- a) Auf keinen Fall. Das wäre Mord.

- b) Ja, man sollte das Flugzeug abschiessen, denn die Passagiere würden ja sowieso sterben. Nur so kann man jedoch verhindern, dass Hunderte von weiteren Menschen sterben oder verletzt werden.

- c) Nein, man sollte das Flugzeug nicht abschiessen. Würde man den Abschuss gutheissen, so würde sich die Hemmschwelle zum Töten vermutlich immer weiter senken und ein Menschenleben hätte nicht mehr denselben Stellenwert wie heute. Die Würde des Menschen wäre in Gefahr.

Zurück Weiter

## Examples of ethical conflicts

- ▶ Is it permitted to build a dam for the economic progress of a country, thereby destroying historically valuable cultural assets? (the flooding of the villages Graun/IT and parts of Reschen/IT for the Reschensee 1950)
- ▶ Is it permissible to install the second-best pollution filter system - but still compliant with the law - for financial reasons? Knowing that this could probably harm children living nearby?
- ▶ Liability for damage caused by a largely autonomous system.
- ▶ AI decision-making systems, e.g. for job applications, promotions, granting loans, etc.
- ▶ Predictive policing (PRECOPS, Pre Crime Observation Systems)
- ▶ Use of AI-supported diagnostic procedures in medicine
- ▶ Autonomous weapon systems (drones, smart-weapons)
- ▶ Human-robot aid/relationship in the world of work
- ▶ AI as Team-member / AI as Companion / Leading & decisions by AI...

## Legal aspects of digitalisation of company Processes

- ▶ **Law ≠ Ethics!** It's (often) possible that a company acts fully legal, but it's still unethical! (business in the 3rd world under harsh conditions - mining, child work, collaboration with corrupt government etc. etc.) A „who cares“ isn't sufficient!
- ▶ Responsibility? i.e. robotics, artificial intelligence, internet-of-things, smart contracts (blockchain), medical-devices, DAO (decentralised autonomous organisations) etc. etc.
- ▶ To make the developer/producer liable doesn't work entirely! We have complex systems with sometimes „weird“ (or dangerous) behaviour!
- ▶ **Prediction:** besides „natural persons“ & „legal persons“ we will get sooner or later a third „species“: artificial/digital persons with (limited) liability. [[link](#)]
- ▶ Papers about Artificial Intelligence and Law: [[link](#)]

## Ethics in the engineering

- ▶ **Not a new topic!** Research & developments on & with humans, personal data, animals and possible effects on them, have long been the subject of ethical considerations (responsibility & controls).
- ▶ As in many other areas: **AWARENESS is necessary!**
- ▶ **Code of Ethics for Engineers** (NSPE: US-National Society of Professional Engineers)  
**Ethische Grundsätze des Ingenieurberufs** (VDI Vereinbarung Deutscher Ingenieure e.V.)

## AI and Switzerland: Report to the Federal Council (13.04.2022)

- ▶ <https://www.newsd.admin.ch/newsd/message/attachments/71096.pdf>

„Das noch frühe Stadium der internationalen Diskussion eröffnet der Schweiz die Möglichkeit, auf der internationalen Ebene aktiv bei der Ausgestaltung des internationalen Regelwerks zu KI mitzuwirken.“

Der Bericht macht hierzu vier Vorschläge:

„1. Eine Fachgruppe zu Rechtsfragen («Knotenpunkt Recht») wird gebildet, welche als Anlaufstelle für rechtliche Expertise im Umgang mit KI in der Bundesverwaltung fungieren soll. Der Knotenpunkt soll den bereits bestehenden horizontalen Strukturen zu KI des Kompetenznetzwerks für künstliche Intelligenz CNAI und dem Administrativen Ausschuss der Plateforme Tripartite zugeordnet werden. Mitglieder des Knotenpunkts sollen nebst den Expertinnen und Experten aus den Bundesämtern auch die Expertinnen und Experten aus der Arbeitsgruppe «Recht und Technik» des EDA (DV) mit der Schweizerischen Akademie für technische Wissenschaften SATW sein. Diese externen Expertinnen und Experten können die Schweiz auch bei internationalen Prozessen unterstützen.“

Actually: 4. CNAI Meeting „Data Science and Artificial Intelligence“ (November 2024): [LINK]

## Short Summary of the EU AI Act (source: [artificialintelligenceact.eu](https://artificialintelligenceact.eu))

► **The AI Act classifies AI according to its risk:**

- Unacceptable risk is prohibited (e.g. social scoring systems and manipulative AI).
- Most of the text addresses high-risk AI systems, which are regulated.
- A smaller section handles limited risk AI systems, subject to lighter transparency obligations: developers and deployers must ensure that end-users are aware that they are interacting with AI (chatbots and deepfakes).
- Minimal risk is unregulated (including the majority of AI applications currently available on the EU single market, such as AI enabled video games and spam filters – at least in 2021; this is changing with generative AI).

► **The majority of obligations fall on providers (developers) of high-risk AI systems.**

- Those that intend to place on the market or put into service high-risk AI systems in the EU, regardless of whether they are based in the EU or a third country.
- And also third country providers where the high risk AI system's output is used in the EU.

► **Users are natural or legal persons that deploy an AI system in a professional capacity, not affected end-users.**

- Users (deployers) of high-risk AI systems have some obligations, though less than providers (developers).
- This applies to users located in the EU, and third country users where the AI system's output is used in the EU.

► **General purpose AI (GPAI):**

- All GPAI model providers must provide technical documentation, instructions for use, comply with the Copyright Directive, and publish a summary about the content used for training.
- Free and open licence GPAI model providers only need to comply with copyright and publish the training data summary, unless they present a systemic risk.
- All providers of GPAI models that present a systemic risk - open or closed - must also conduct model evaluations, adversarial testing, track and report serious incidents and ensure cybersecurity protections.

## Technology impact assessments are becoming (even) more important!

- ▶ Impact assessments and accountability are becoming increasingly important in the development of technical systems!
- ▶ Cross-functional knowledge/techs (e.g. additional knowledge in ethics, sustainability, law etc.) is central!
- ▶ "The tekkie must increasingly also be an ethicist! And vice versa!"

Microsoft | News Center Über Microsoft Pressematerialien Blog Features Kontakt

Künstliche Intelligenz und Ethik: Warum KI ethische Prinzipien braucht, um ein Erfolg zu werden

26. März 2019

f t in



<https://news.microsoft.com/de-de/ethik-prinzipien-kuenstliche-intelligenz/>

## ...and now the law?? (1)

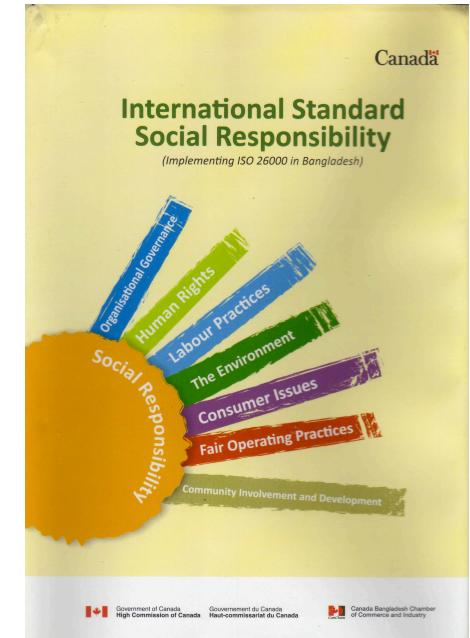
- ▶ Liability for algorithms: **Causal liability** (updated Product Liability??). But also applicable to highly networked systems, AI, autonomous robots, DAOs etc.?
- ▶ **Personal (civil and criminal) liability of management for organisational errors** (BGE practice since approx. 2006).
- ▶ French Unfair Competition Law: the Autorité fines Google €250 million for non-compliance with some of its commitments made in June 2022 (March 20, 2024)
- ▶ Lots of US-Lawsuits (copying voice, abusing training data etc.) [**MORE**] > does the actual Copyright Law still make sense? Companies offer their data pools for LLM training.

## ...and now the law?? (2)

- ▶ **Corporate responsibility** (Swiss initiative in 2020 not accepted, but widely accepted in other countries... Due to the revised stricter EU-law, the former committee started in **January 2025** a new initiative!)
- ▶ Currently, there is (still) no major public discourse on what is (surely!) to come! But it also took many years before the topic of "collateral damage" was discussed in the case of cars. But do we have the time?
- ▶ The solution could be - as in many other cases - "best practices": e.g. **ISO 26000:2010 - Guidance on social responsibility** or **OECD Guidelines for Multinational Enterprises (2011)**.

## ISO 26000:2010 – Guidance on Social Responsibility

- ▶ Is "only" a voluntary guideline that provides orientation & recommendations on how organisations should behave in a socially responsible manner. There are no ISO 26000-certificates!
- ▶ For the management of the organisation, the basic principles are:
  1. accountability
  2. transparency
  3. ethical behaviour
  4. respect for stakeholders' interests
  5. respect for the rule of law
  6. respect for international standards of conduct
  7. respect for human rights
- ▶ Not an international standard but growing strong in Europe:  
[www.ecogood.org/](http://www.ecogood.org/)



## Outlook

- ▶ **Every technology is developing faster than you think!**
- ▶ **Ethical responsibility increases fast because the technology does!**
- ▶ **Constant reevaluation of the ethical & legal situation!** (awareness)  
Keep an eye on the international developments! The Swiss lawmakers are (to) slow...
- ▶ Don't rely on the „duties of the supplier“! (e.g. data protection, what does the cloud-supplier with my data etc.)
- ▶ **We urgently need openminded & innovative & communicative people!!** Not task-fulfiller...



## My take away...

- ▶ ...
- ▶ ...
- ▶ ...
- ▶ ...