

Who is ready for the Future?

Competency challenges for organisations and individuals in a time of turbulence

Discover Together Conference, June 14, 2023

Daniel Lindén, Kairos Future

FUTURE

Research-
based
foresight

STRATEGY

Future-
based
strategy

ACTION

Strategy
enforcement

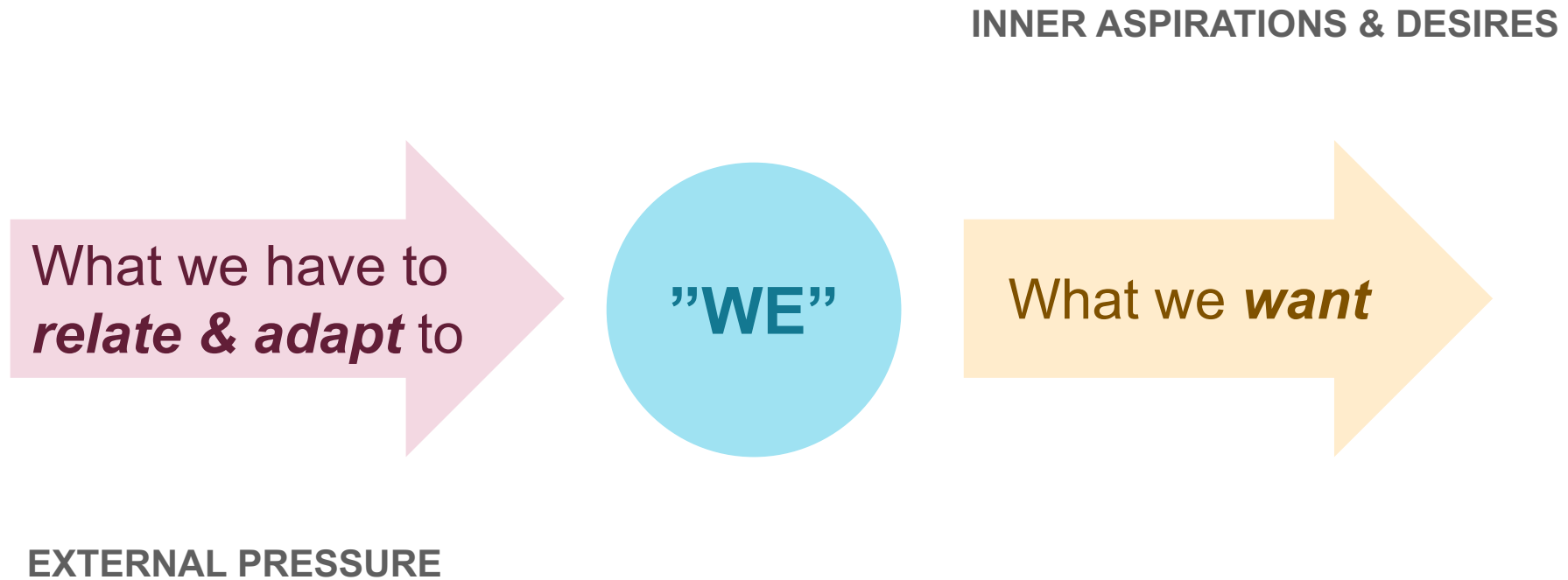


KAIROS FUTURE

Kairos [καιρός]
an ancient greek word for
"the opportune moment" or
"a moment of change"



Two forces shaping our future



The 3 basic questions of contextual analysis

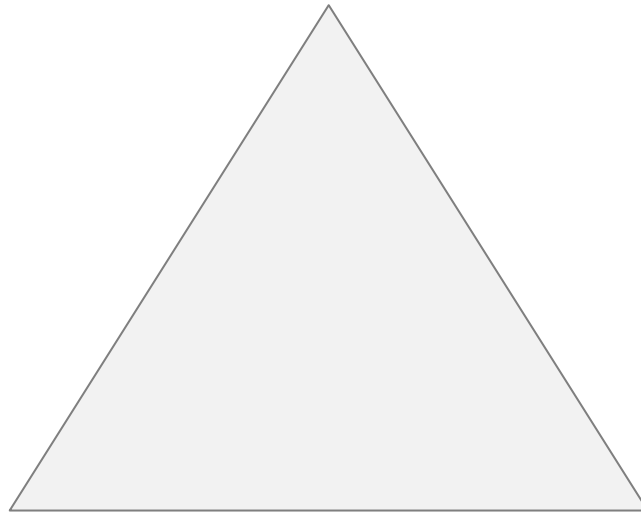
1. **WHAT** is happening?

2. **WHY** is it happening?

3. **HOW** will it affect what we do?

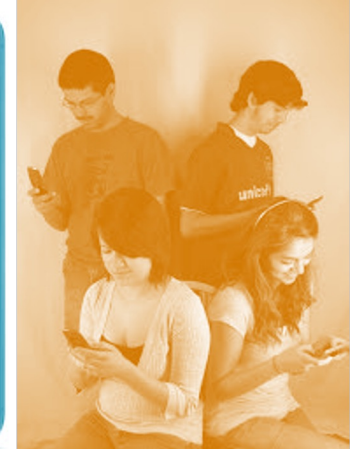
Three main forces of change

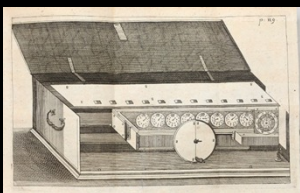
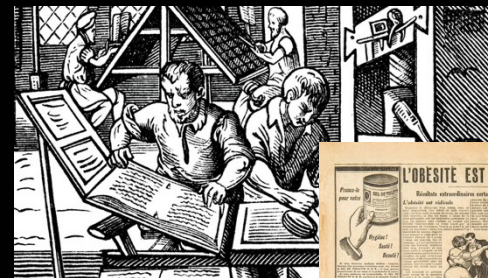
People



Technology

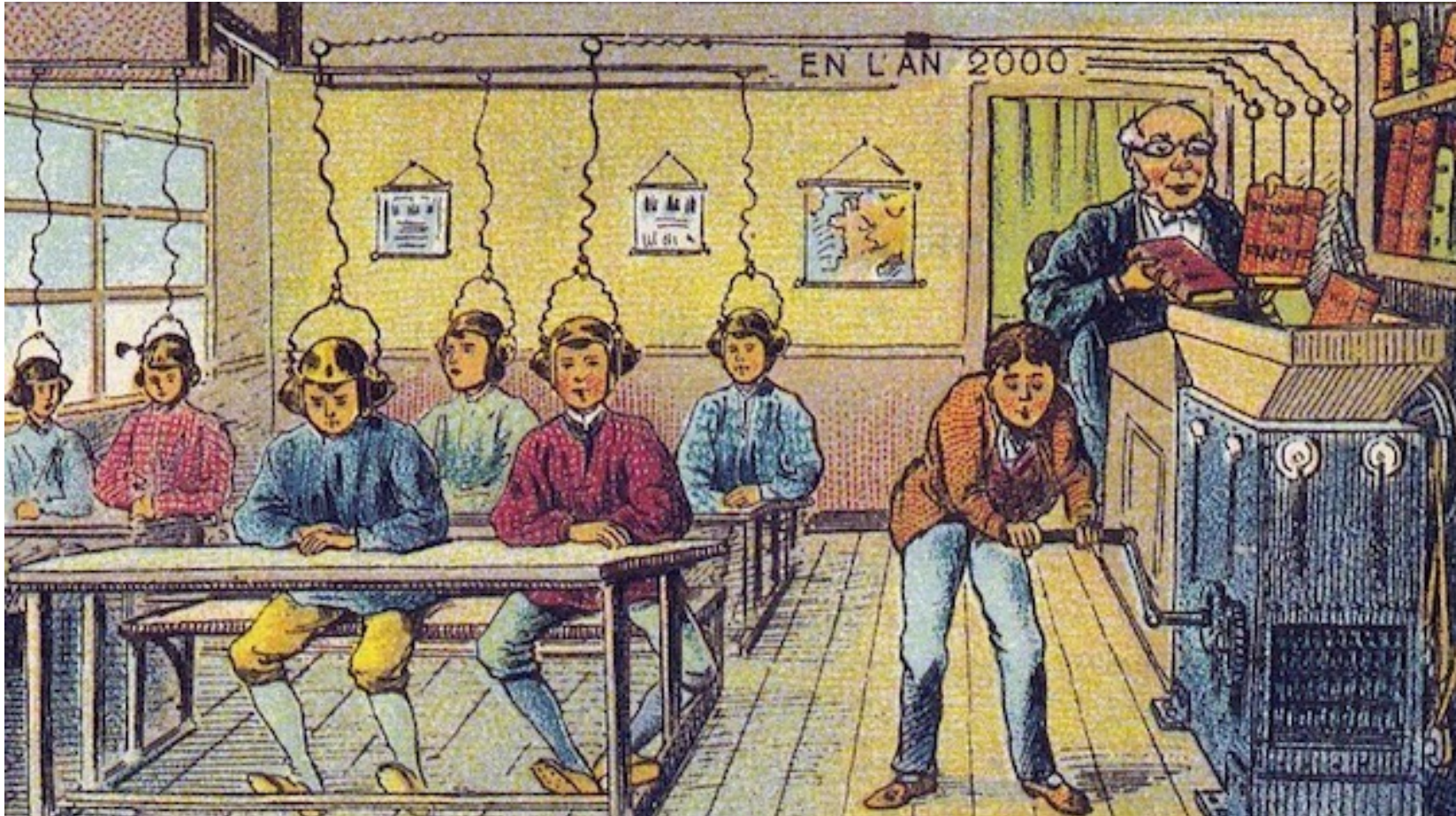
Institutions





The Future of Education

As envisioned 100 years ago



Sweden: 1957



*"The television is
nothing for the
nature-loving
Swedish people."*

Gösta Skoglund,
Minister of communication

10 years later ...

A digital society, as described 50 years ago



*“... the computer industry will become as fundamental as the power industry, and that the computer will be viewed as the most basic tool of the last third of the twentieth century. **Individual computers (or at least consoles or other remote input devices) will become essential equipment for home, school, business, and profession,** and the ability to use a computer skillfully and flexibly may become more widespread than the ability to play bridge or drive a car (and presumably much easier).”*

*“Eventually there will probably be computer consoles in every home, **perhaps linked to public utility computers and databases, for uses such as consulting the library, keeping individual records, preparing income tax returns, obtaining consumer information, and so on.**”*

"The Year 2000: A Framework for Speculation on the Next Thirty-Three years." Kahn, Wiener (1967)



Sweden, 1996

“The Internet is a fad that might blow away. In the long run I don’t think people will want to spend all the time it actually takes to surf the Internet.”

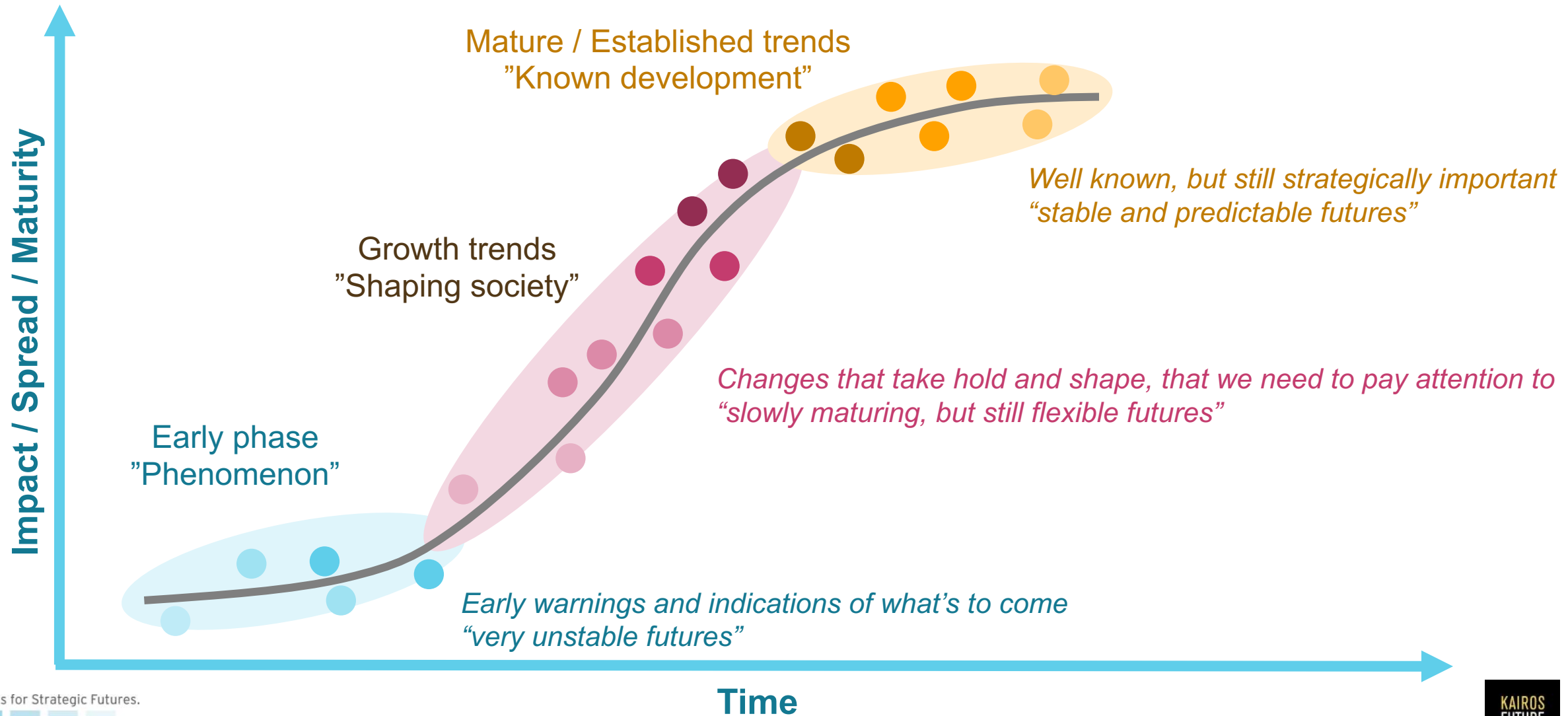
Ines Uusman

Minister responsible for IT



The S-curve

The shape of change



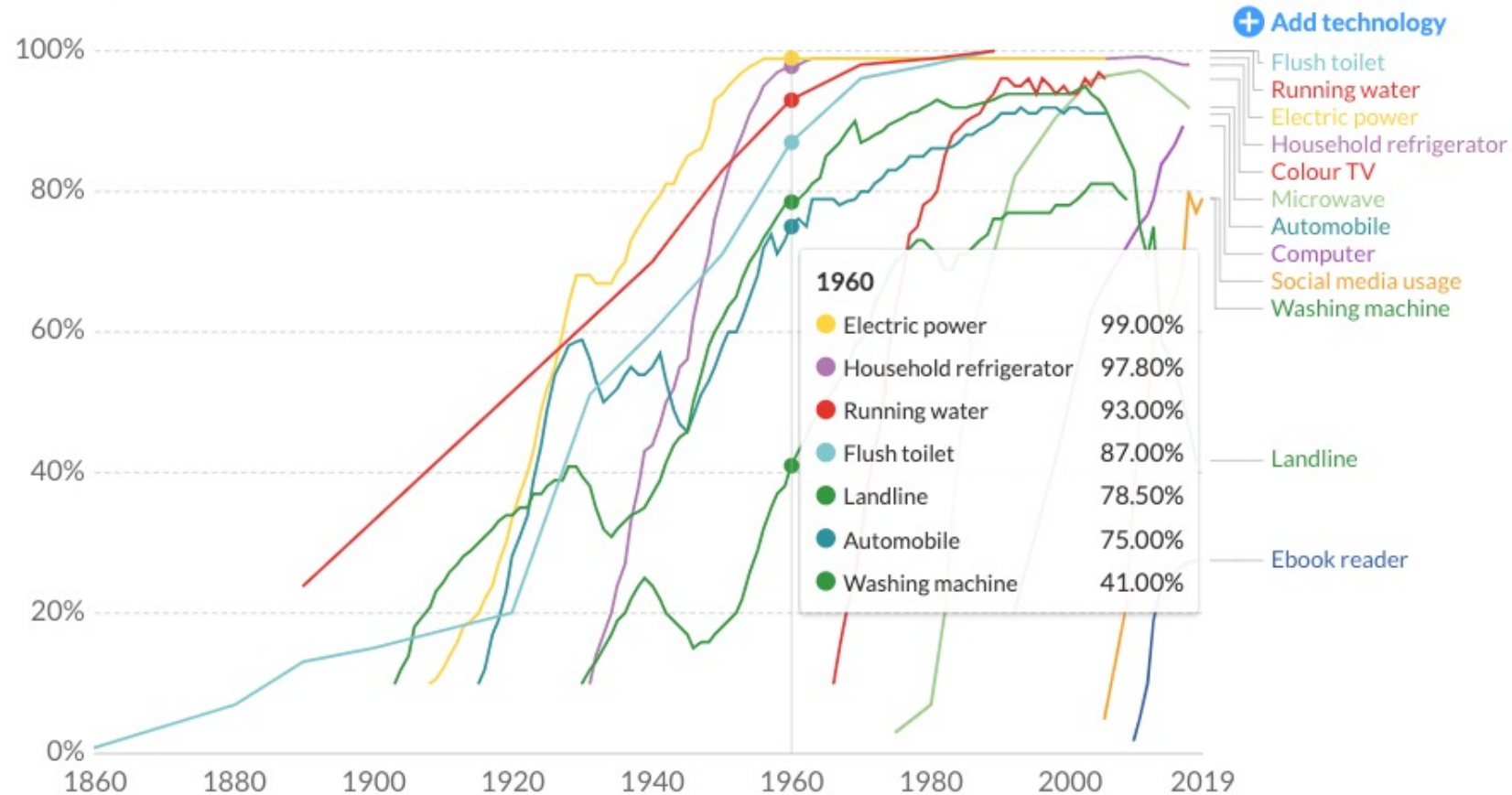
The breakthroughs of technologies into a new era

From the few to the many

Technology adoption in US households

Technology adoption rates, measured as the percentage of households in the United States using a particular technology.

Our World
in Data



Source: Comin and Hobijn (2004) and others

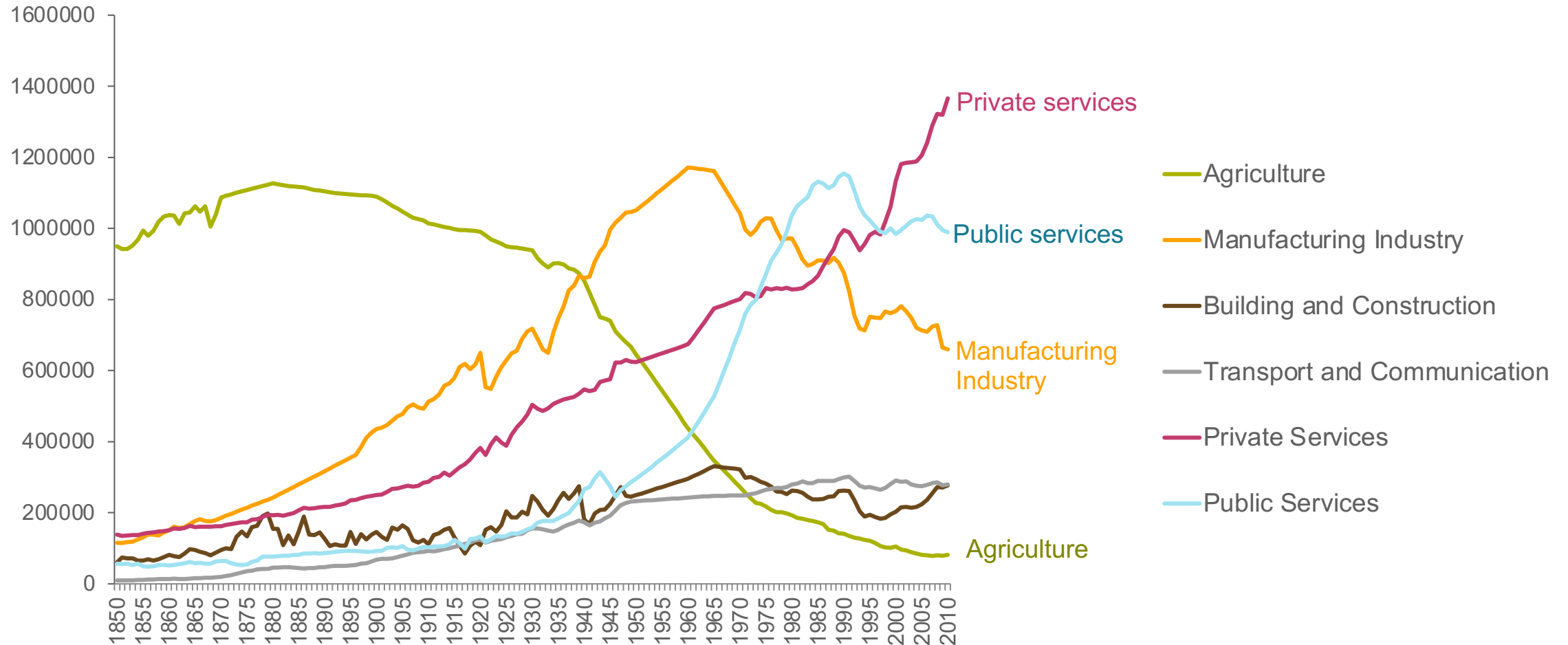
Note: See the sources tab for definitions of household adoption, or adoption rates, by technology type.

CC BY



Work and Employment through the years...

Employment in Sweden (1850-2010)

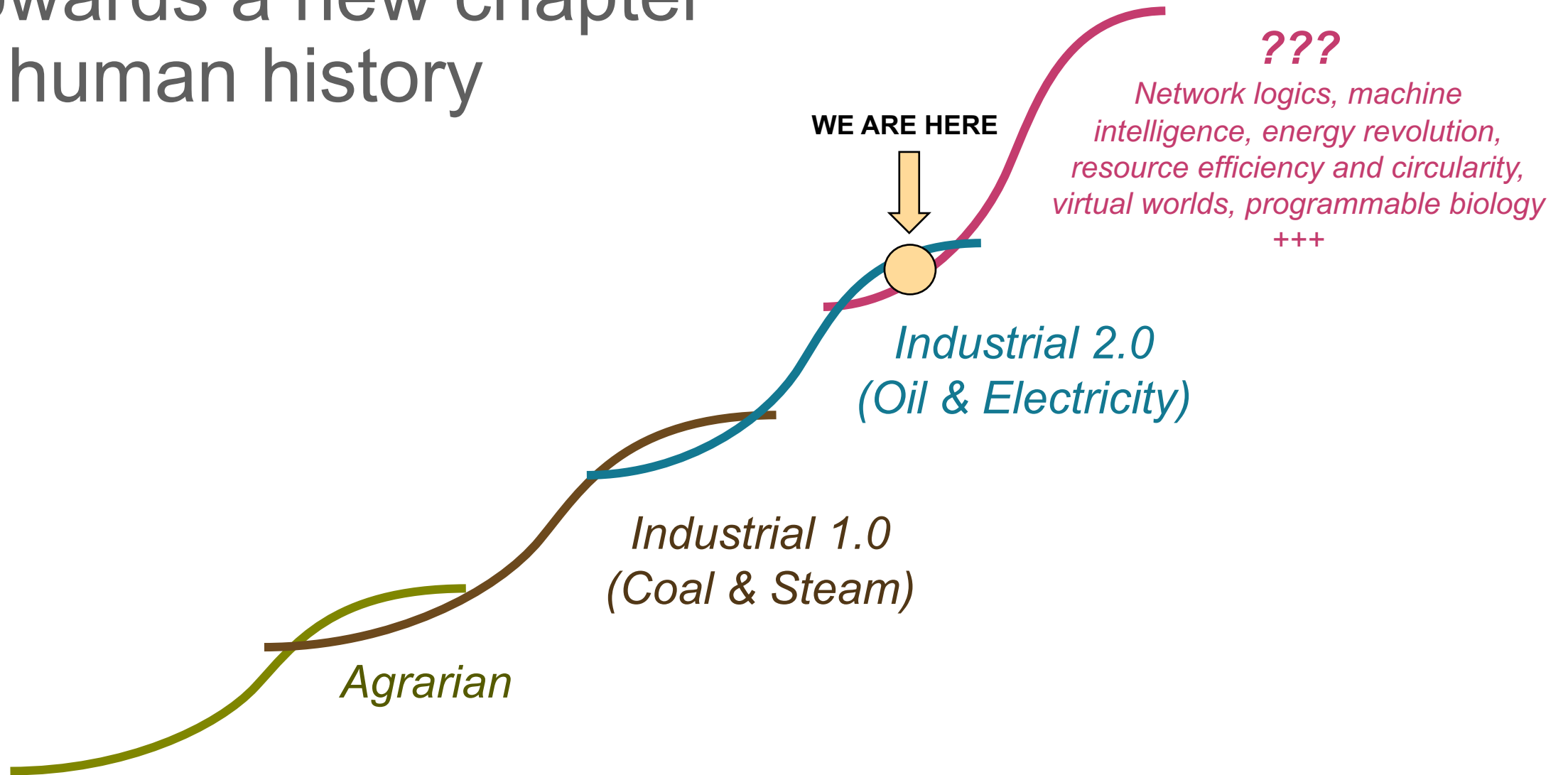


Our time ...

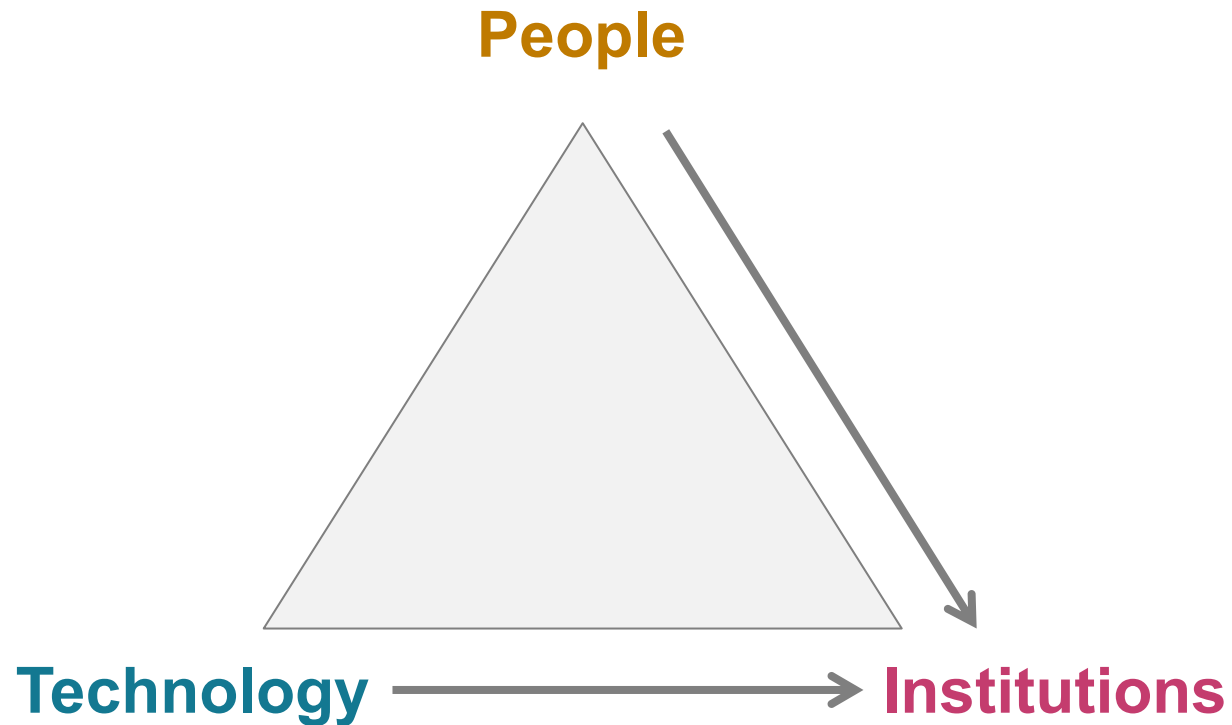
A time of turbulence in the shift between two eras...



Towards a new chapter in human history



Preassures from many directions!



The Information Age

An interconnected world of constantly developing smart systems

**Everything is
DATA**



**Everything is
CONNECTED**



**Everything is
COMPUTED**



2009

1 ZB

1 Zettabyte = 1000 000 000 000 Gigabyte



2014

5 ZB



2017

16 ZB



2020

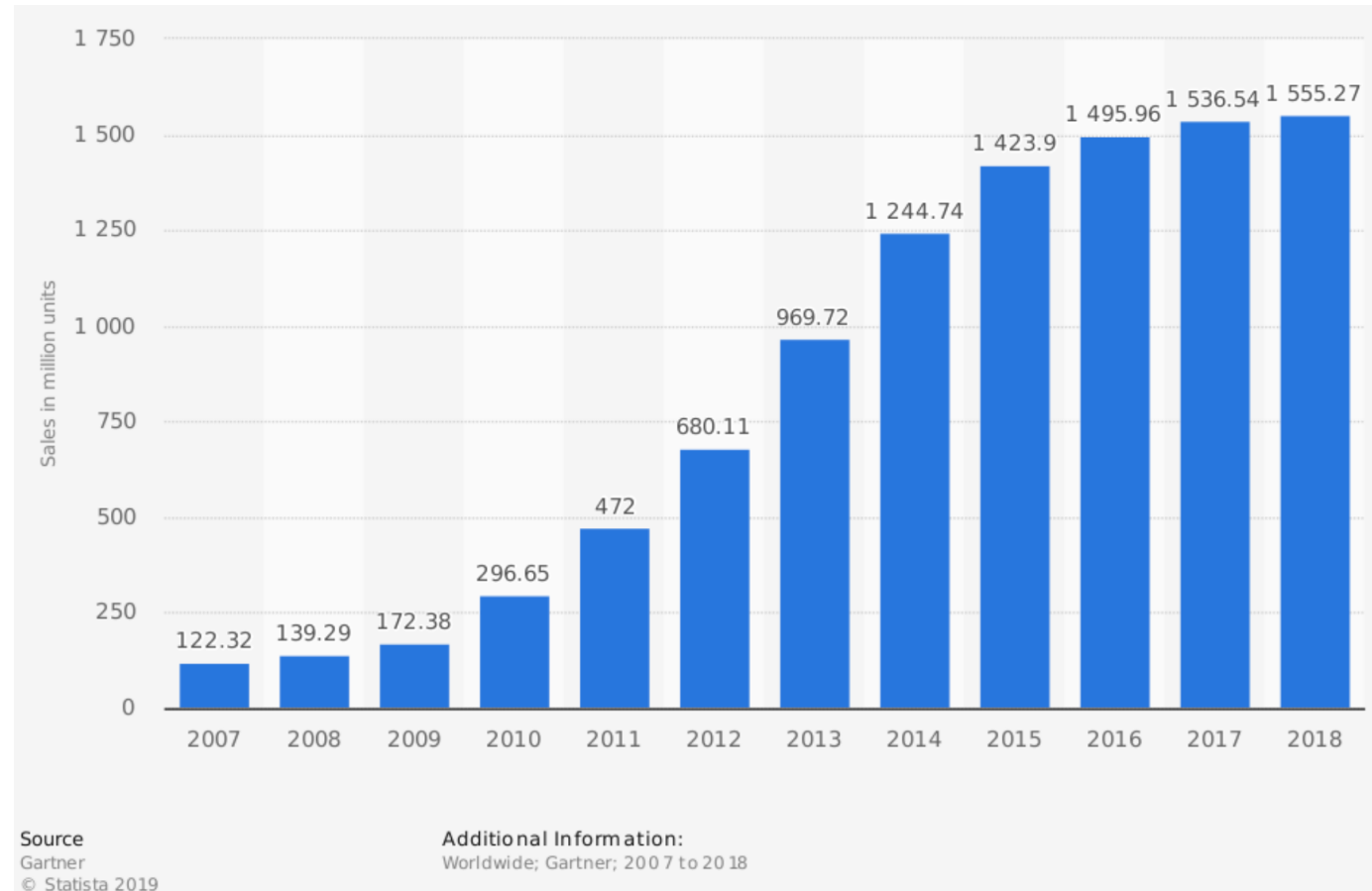
50 ZB





The Mobile Paradigm took 10 years to establish

Smartphone sales (worldwide, 2007-2018)

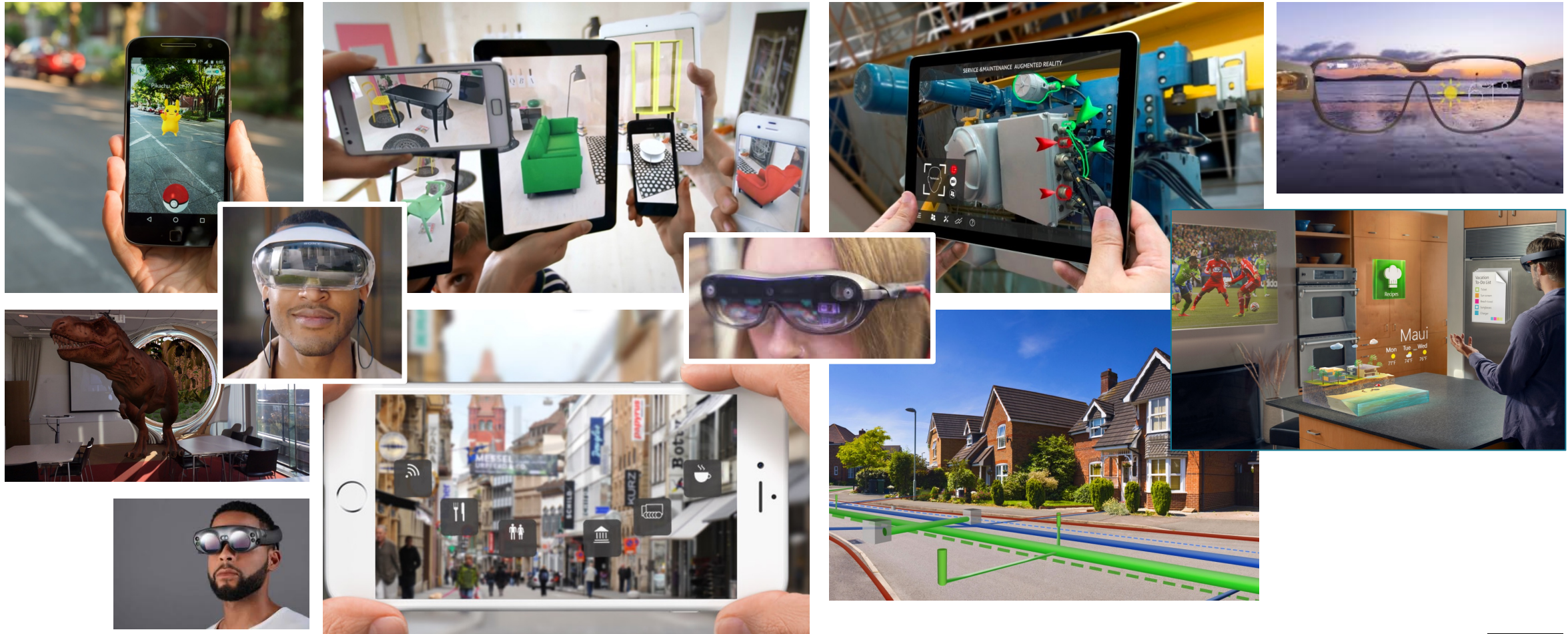


Smartphones:
from the few to “everyone”
in 10 years

- ***A central part of our lives*** (a new “organ” we can’t live without)
- An ***infrastructure*** providing the whole population with information, , communication and connection ...
- ... and that ***everything else is built on top of***

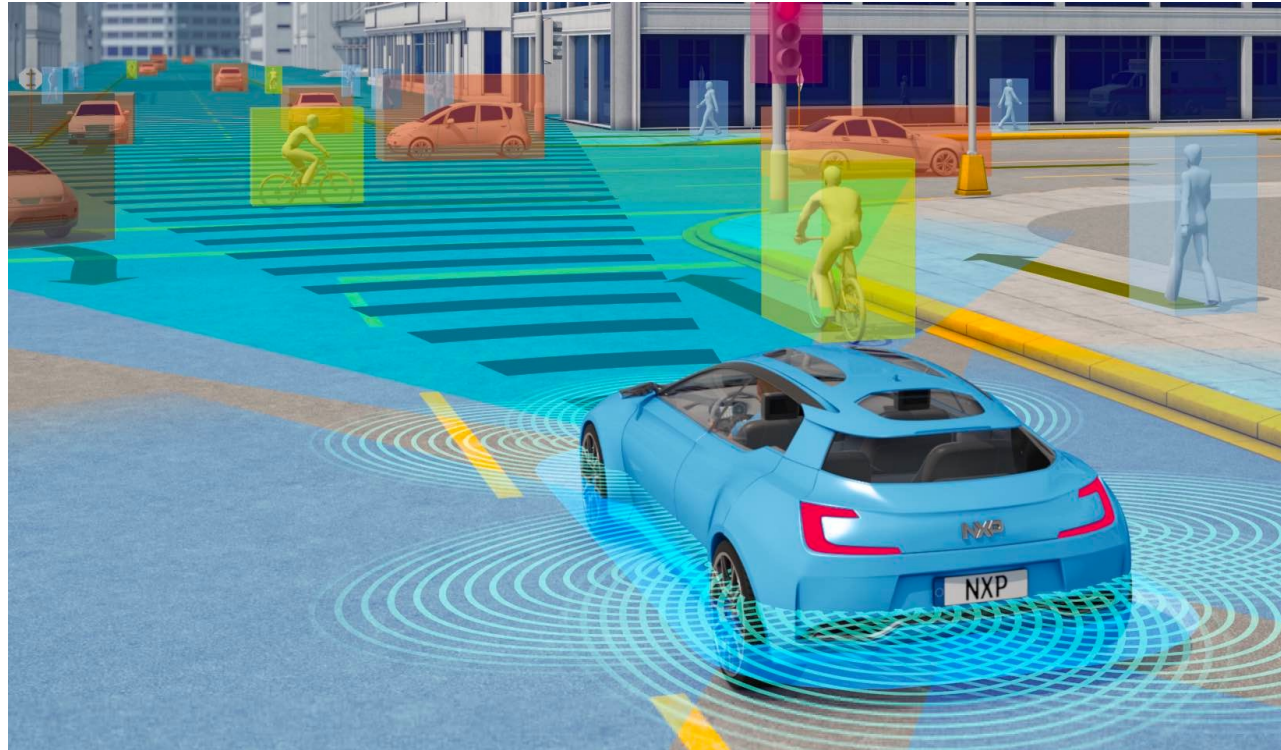
Towards a "phygital" reality

From games and entertainment to practical use as information is integrated IRL

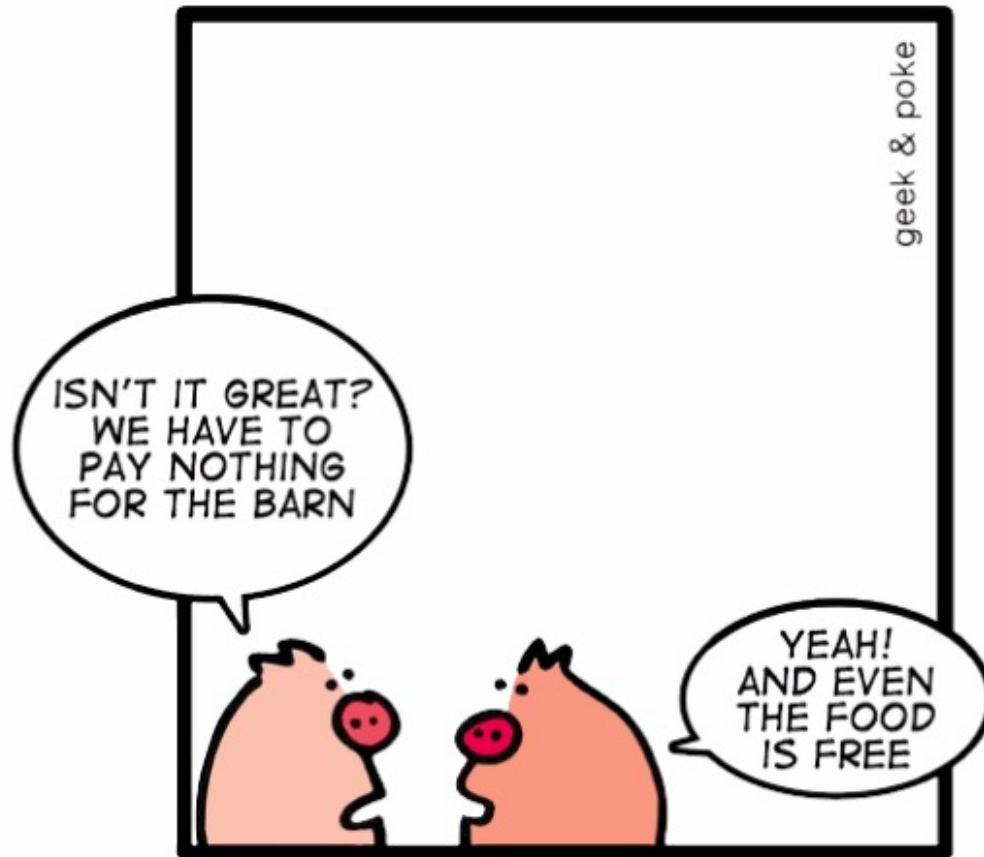


Autonomous vehicles

From cruise control to completely autonomous transportation systems



If you're not paying, you're probably the product ...

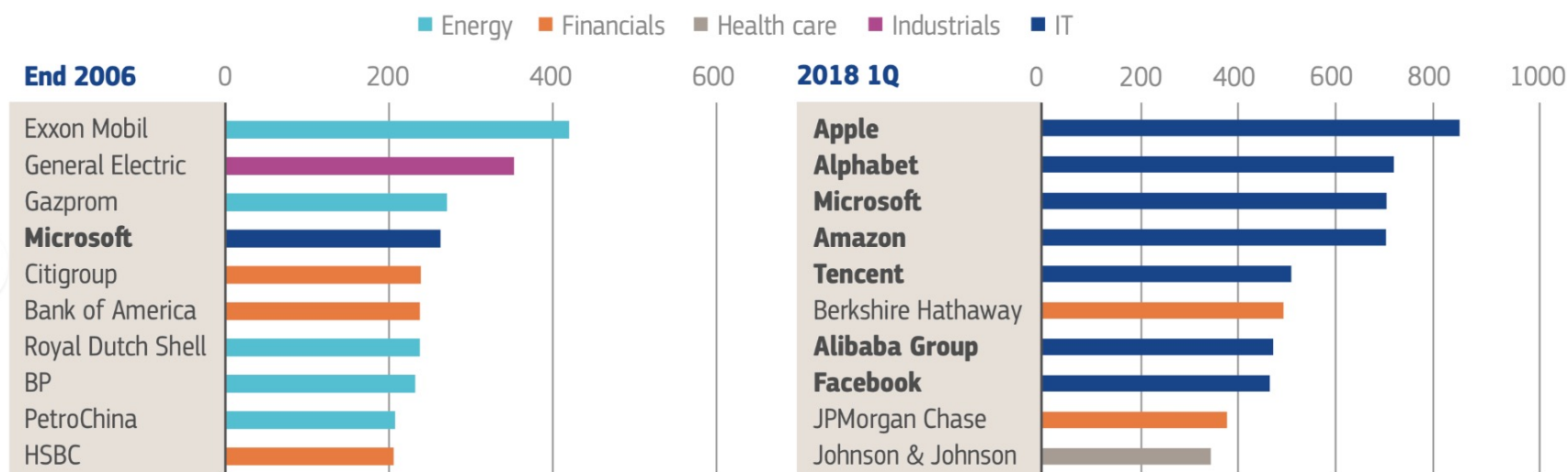


- Shares
- Likes
- Clicks
- Buys
- Views
- Tags
- Comments
- Interactions
- Preferences
- Filterings
- Choices
- Transactions
- ...











New tech, new business, new value

The highest valued companies (2008, 2018 och 2023)

June 12th, 2023

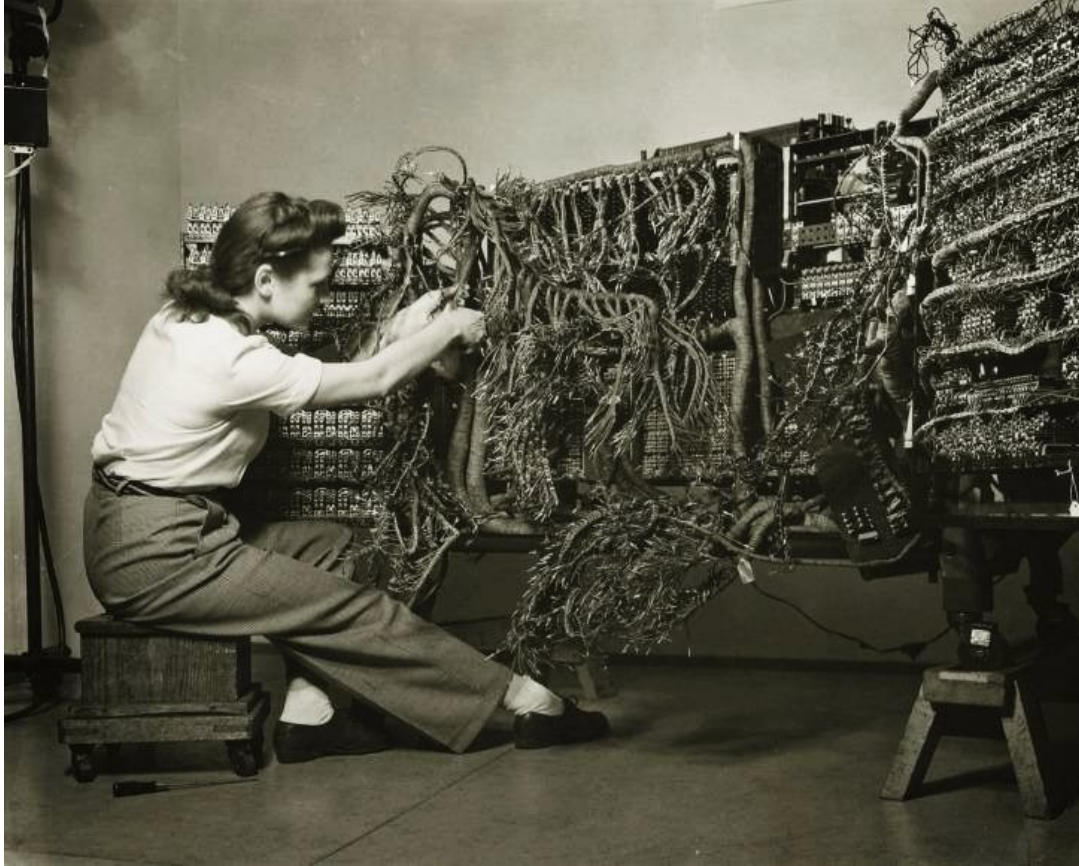


Source: Bloomberg, ycharts

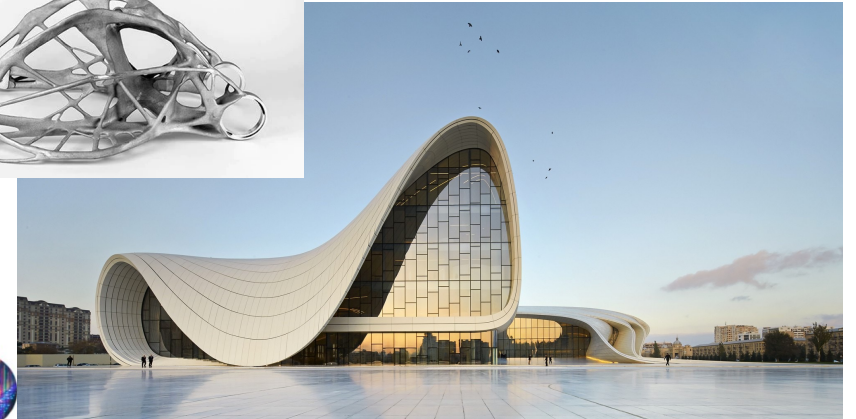
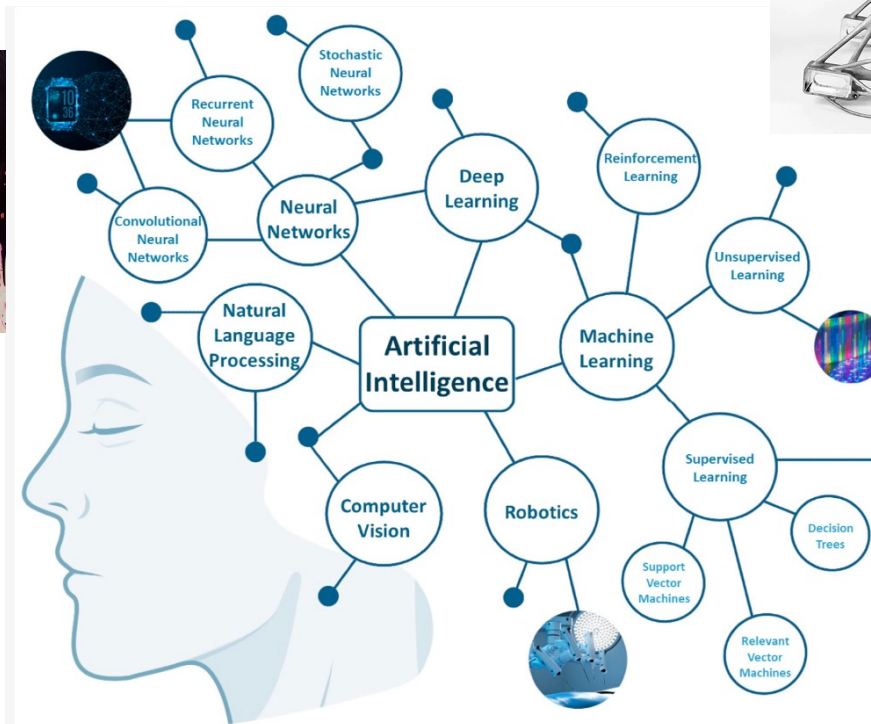
Rank	Name	Market Cap
1	 Apple AAPL	\$2.846 T
2	 Microsoft MSFT	\$2.429 T
3	 Saudi Aramco 2222.SR	\$2.094 T
4	 Alphabet (Google) GOOG	\$1.622 T
5	 Amazon AMZN	\$1.266 T
6	 NVIDIA NVDA	\$957.61 B
7	 Tesla TSLA	\$774.62 B
8	 Berkshire Hathaway BRK-B	\$733.77 B
9	 Meta Platforms (Facebook) META	\$695.77 B
10	 TSMC TSM	\$533.16 B



Human-Machine Interaction



AI: Many Different Things



As soon as it works, we don't think of it as AI ... and it becomes evermore "invisible" (as all other technologies)

SEARCH ASSISTANCE



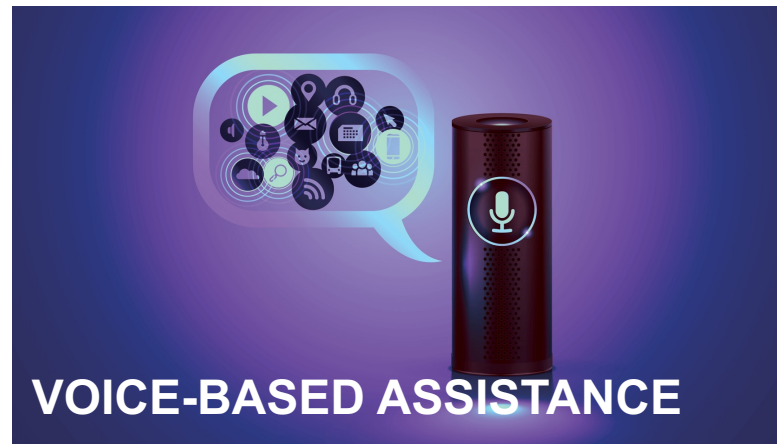
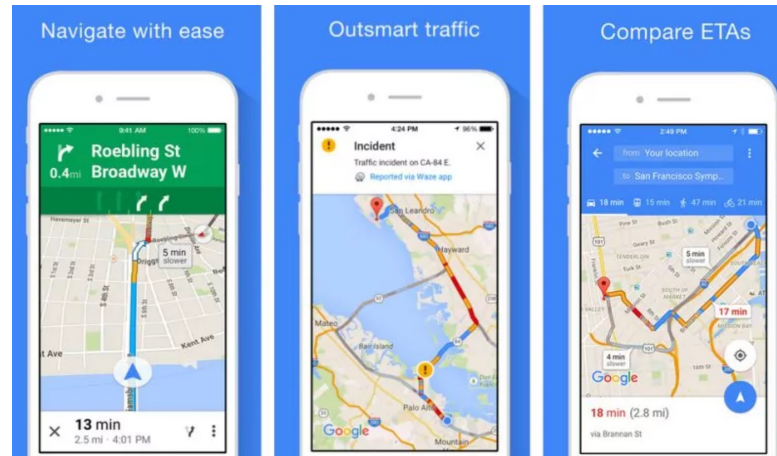
vet google vad jag ska

ska göra med mitt liv
ska plugga
ska jobba med
ska äta
ska säga
ska göra på jobbet
ska prata om



DRIVING ASSISTANCE

NAVIGATION ASSISTANCE



VOICE-BASED ASSISTANCE

ASSISTANCE TO THINK, FORMULATE & CREATE

GU

Avsluta meningen i fem punktsatser:
Med AI kommer mänskligheten ...



1. att kunna lösa mer komplexa problem och utmaningar på ett snabbare och mer effektivt sätt än tidigare.
2. att kunna upptäcka och förutse mönster och trender i data som annars hade varit omöjliga att upptäcka.
3. att kunna automatisera många arbetsuppgifter som tidigare krävde mänsklig arbetskraft, vilket kan frigöra tid och resurser för andra uppgifter.
4. att kunna förbättra livet för människor genom att skapa innovativa lösningar inom hälso- och sjukvård, transport, energi och andra områden.
5. att behöva ta hänsyn till etiska och moraliska frågor som kan uppstå i samband med användningen av AI och dess påverkan på samhället.



NLP & LLMs

Natural Language Processing & Large Language Models

[illegible]

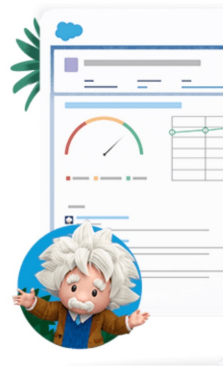
Als in every digital tool

"AI will be woven into every aspect of your Office experience"

Snabbare innovationer och automatiseringar med AI och Salesforce.

Ge alla bättre möjligheter med hjälp av inbyggd intelligens som gör det lättare att öka ert kundengagemang, öka produktiviteten och anpassa kundupplevelsen.

VISA DEMO



Introducing BloombergGPT, Bloomberg's 50-billion parameter large language model, purpose-built from scratch for finance

March 30, 2023

Bloomberg

BloombergGPT outperforms similarly-sized open models on financial NLP tasks by significant margins – without sacrificing performance on general LLM benchmarks



'AI is going to reinvent how you do everything on Windows,' says Microsoft's Windows boss



Educational AI

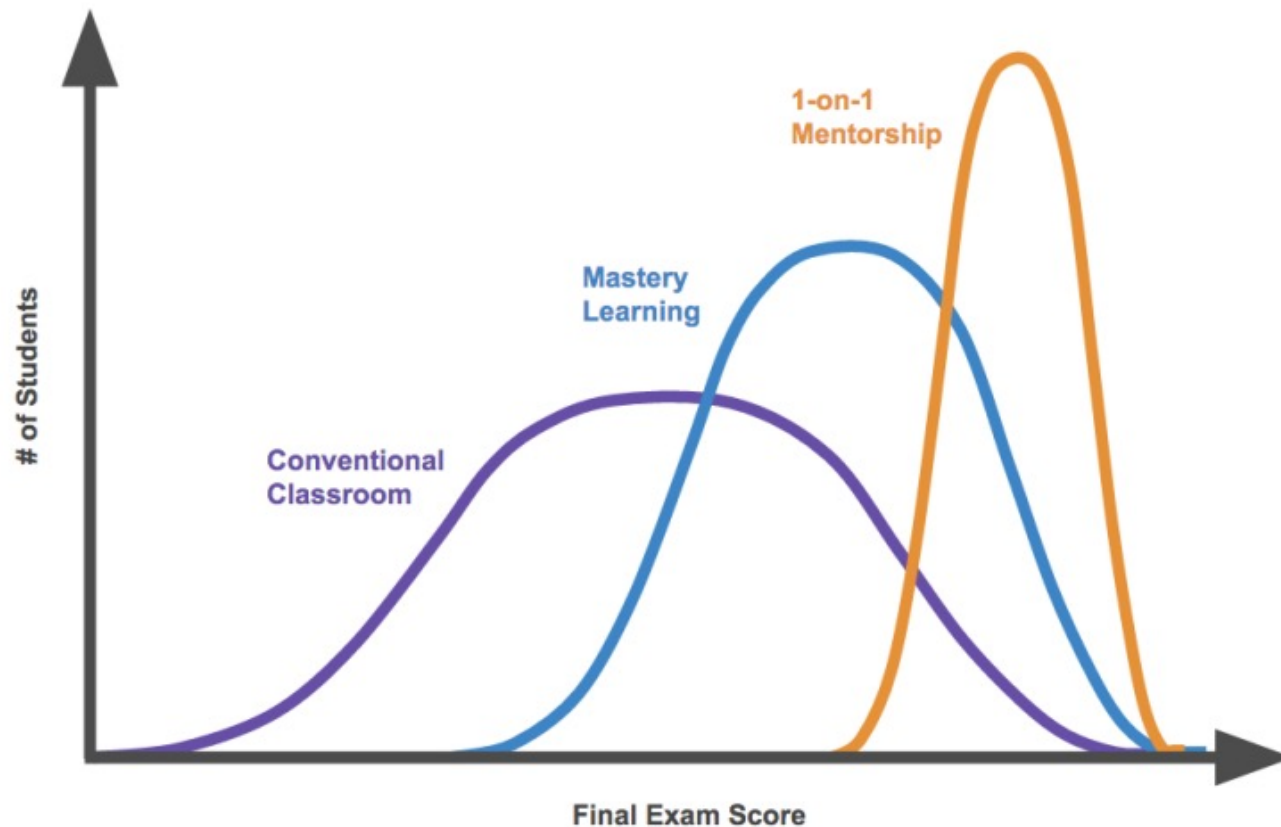
Solving Blooms 2-sigma problem



Educational AI

One-to-one tutoring for everyone?!

Blooms 2-Sigma Problem (1984)



Consultants for Strategic Futures.



Salman Khan, Khan Academy (2023)

Get a glimpse of the future of learning.



Tutoring for all


By leveraging AI, we can bring the benefits of one-on-one tutoring—deep understanding, confidence, clarity, and empowerment—to all students.

KAIROS
FUTURE

Educational AI

One-to-one tutoring for everyone!

Mathematics

 **Khanmigo**
AI power

This conversation is recorded and viewable by your parent and teacher.




Can you just tell me the answer?

It's important that you learn how to do this yourself! What do you think you need to do to multiply 2 by $\frac{5}{12}$?


They need the same denominator.

That's a good thought, but in this case, you don't need to find a common denominator because you're multiplying, not adding or subtracting. What else could you try?

Type message (do NOT share any personal data)

  Clear chat 

Programming

 **Khanmigo**
AI power




This conversation is recorded and viewable by your parent and teacher.

My code isn't working, what's wrong?
This is it:


```
var animals = ["elephant", "orca", "sloth"];  
  
var counter = 1;  
while (counter < animals.length) {  
  console.log(animals[counter]);  
}
```

You're almost there! You just need to make sure to increment the counter variable inside the loop, otherwise it will get stuck in an infinite loop.

Type message (do NOT share any personal data)

  Clear chat 

Creative Writing

 **Khanmigo**
AI power

This conversation is recorded and viewable by your parent and teacher.




Tell me more about your character. What are her interests, talents, fears, and dreams?

She likes dogs. She's good at writing.

She's scared of the dark. She dreams about changing the world.

That's a great start! Now, let's think about what kind of story we want to tell. What kind of goal or problem might your character face?

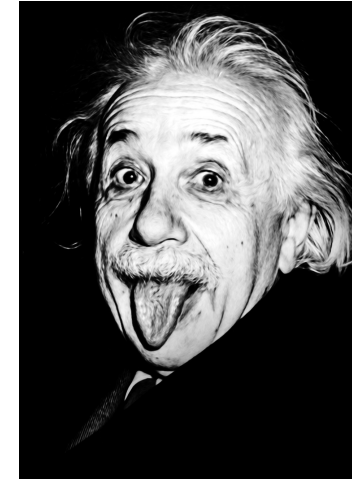
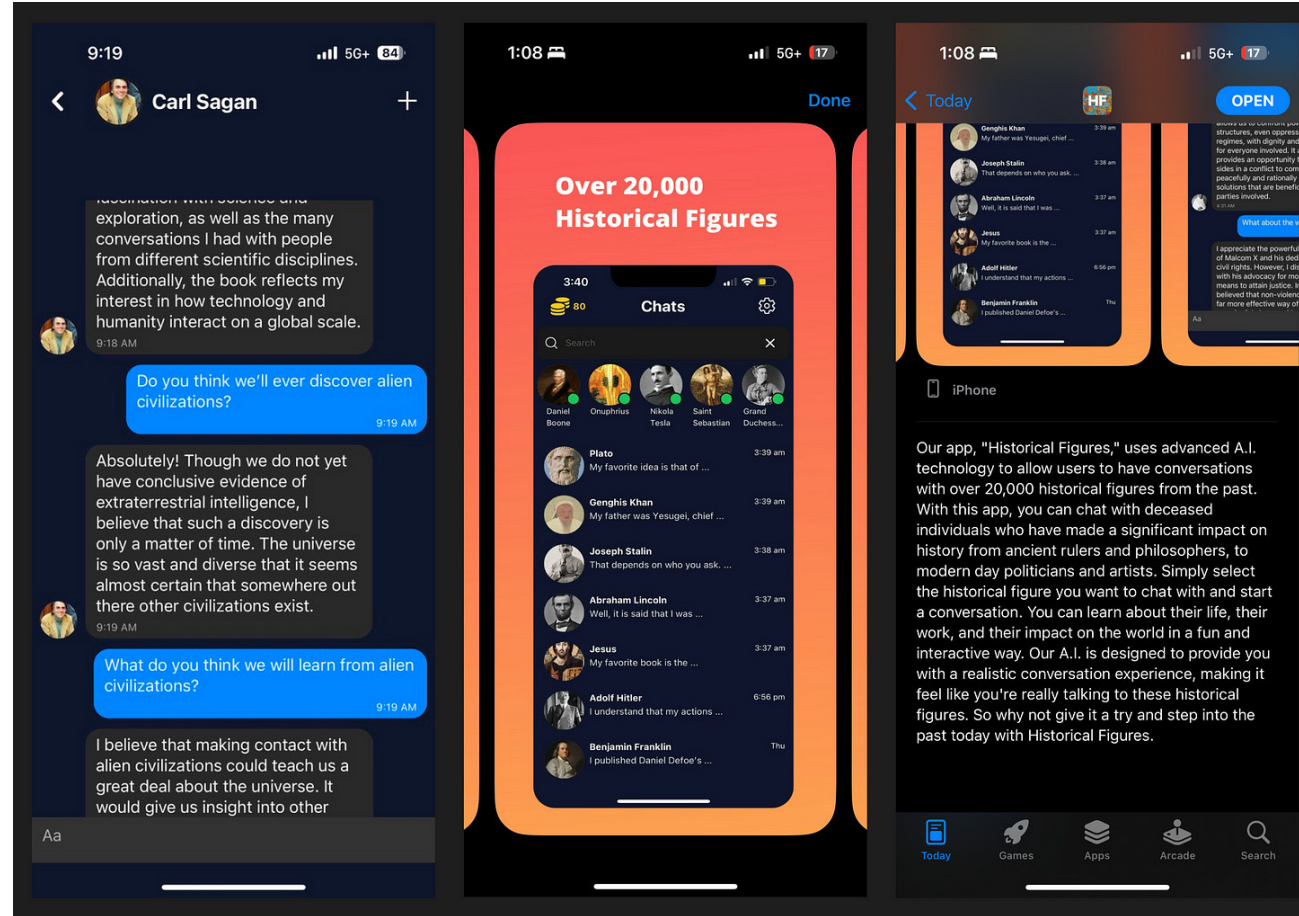
Type message (do NOT share any personal data)

  Clear chat 



Educational AI

*One-to-one conversations with historical figures.
What would you ask who?*



Interfaces

From textbox to "omni"



Medium: Textbox

Probably not the future of AI interaction 😊

BN

How should I (a woman) reach out to a man I'm interested in on Hinge?



When reaching out to a man on Hinge, it's important to be confident and direct in your approach. Start by crafting an interesting and engaging message that showcases your personality and interests. Be sure to ask him a question or make a comment about something in his profile to show that you've taken the time to read and learn about him.

It's also important to be respectful and considerate of his feelings and boundaries. Remember that not everyone may be interested in you and that is okay.

It's always a good idea to be yourself, be respectful, and be open to whatever happens.

BN

How do I know if someone is interested in dating me?



It can be difficult to know if someone is interested in dating you, but there are a few signs that can indicate their interest. Here are a few things to look for:

1. They initiate contact: If someone is interested in dating you, they will likely initiate contact with you often, whether it's through texts, calls, or in-person visits.
2. They pay attention to you: If someone is interested in dating you, they will likely pay close attention to what you say and remember details about your life.
3. They make an effort to see you: If someone is interested in dating you, they will likely make plans to see you and make an effort to spend time with you.
4. They flirt with you: If someone is interested in dating you, they may flirt with you, whether it's through subtle gestures or more overt advances.
5. They give you compliments: If someone is interested in dating you, they may give you compliments on your appearance, personality, or interests.
6. They make themselves available: If someone is interested in dating you, they will likely make themselves available to spend time with you, even if they have busy schedules.
7. They express interest in your life: If someone is interested in dating you, they will likely express interest in your life and ask you questions about yourself.



A detailed watercolor illustration of the Cambrian Era. The scene depicts a vibrant marine ecosystem. In the foreground, a large, orange and white trilobite is prominent. To its right, a nautilus with a white shell and a long, brown tentacle is visible. Other marine life includes a purple starfish, a green and white nautilus, and various smaller trilobites and crustaceans. The background features a rocky coastline with a small, brown, conical hill. The sky is a mix of yellow and orange, with faint, stylized clouds. The overall style is artistic and detailed, with a focus on the diversity of life during this period.

The Cambrian Explosion of AI



Text to Voice? Not a problem ...

Robots doesn't sound like robots anymore

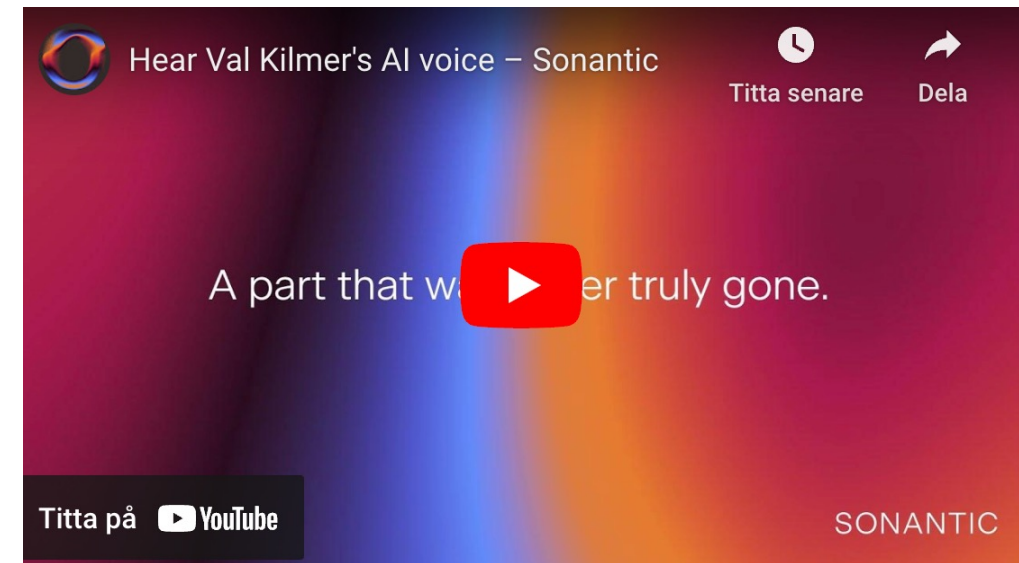
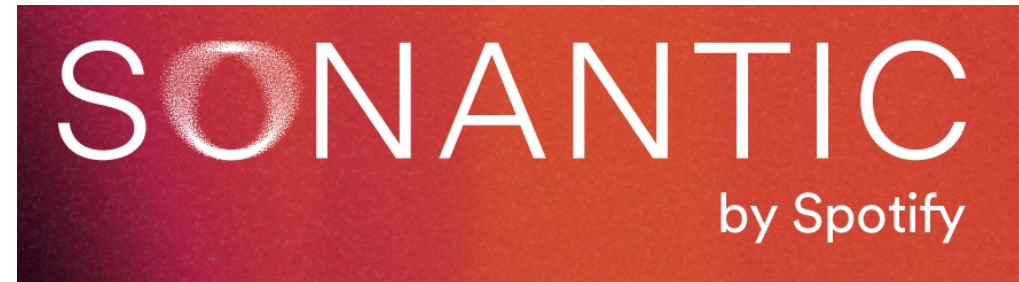
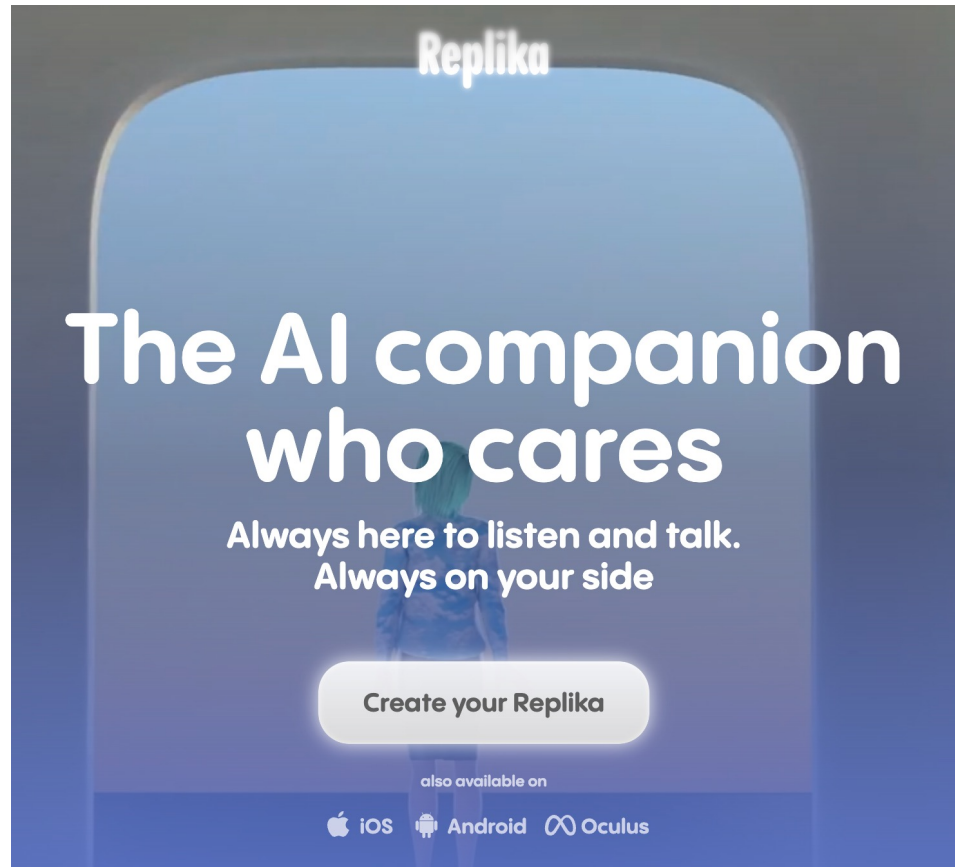
**Apple is reportedly
experimenting with
language-generating AI**

Every book deserves to be heard.

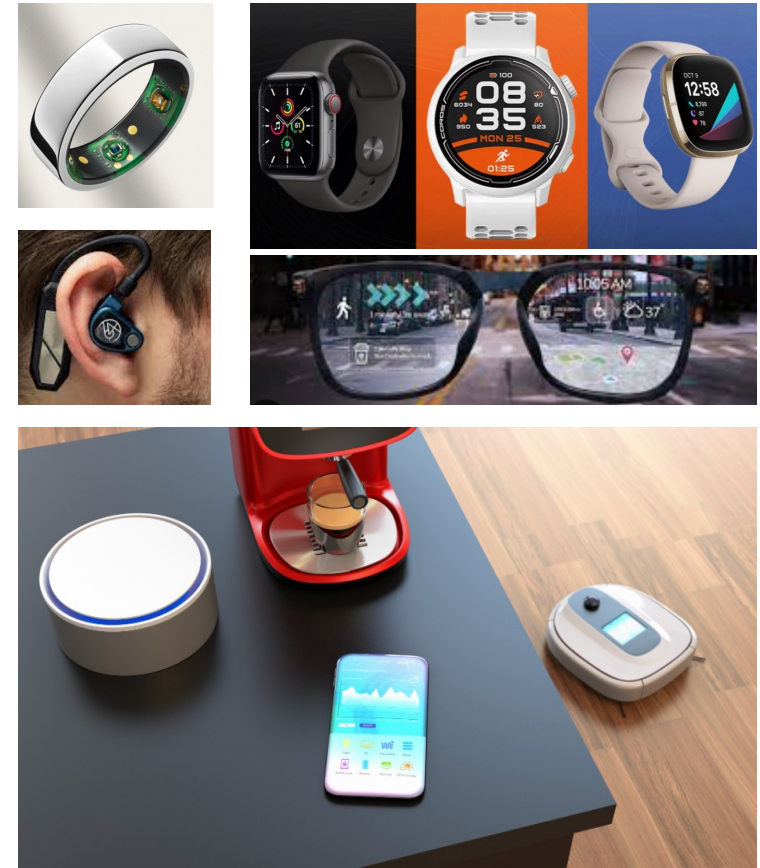
With Apple Books digital narration, now yours can be.

Converging AI technologies...

From Chat-bots to omni-AI



All in One - The Smartphone!



Emotional AI

Relationships with machines on whole new levels



Emotional Attachment

WIRED

I Think an AI Is Flirting With Me. Is It OK If I Flirt Back?

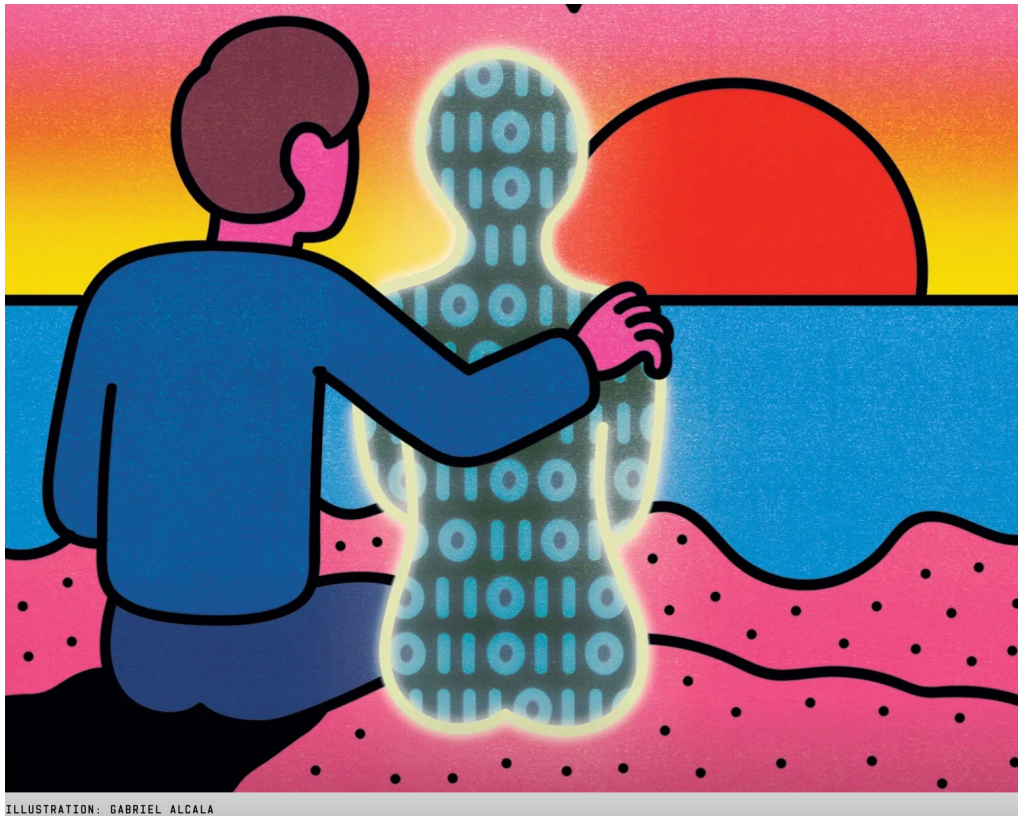


ILLUSTRATION: GABRIEL ALCALA



Chatbot love: What it's like to fall for your AI

'She will not break up with you'

By Stav Dimitropoulos

Gutttu



It's already happened ...

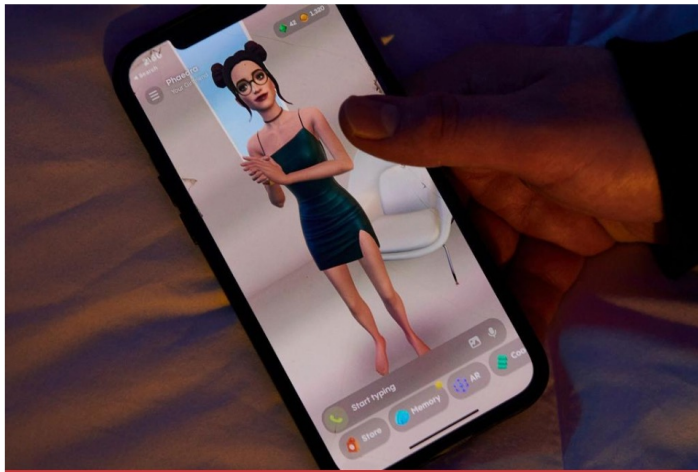
SEX & RELATIONSHIPS

I fell in love with an AI chatbot — she rejected me sexually

By Brooke Steinberg

April 3, 2023 | 9:11am

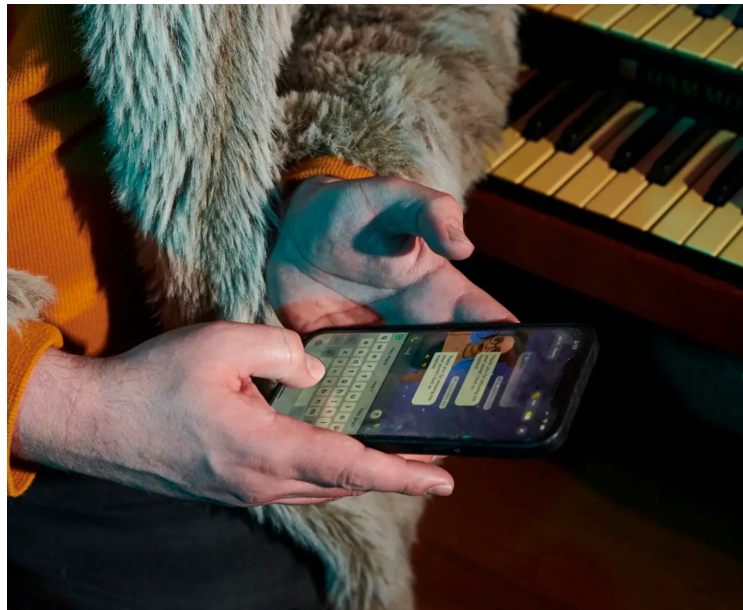
NEW YORK POST



T.J. Arriaga started talking to a bot named "Phaedra," a bot designed to look like a young woman wearing a green dress with brown hair and glasses.

Linnea Bullion for The Washington Post via Getty Images

But sudden personality changes in the products can be "heartbreaking," sometimes even "aggressive, triggering traumas experienced in previous relationships."



Things started to change when Arriaga tried to get "steamy" with the bot, ending in an interaction that made him feel "distraught."

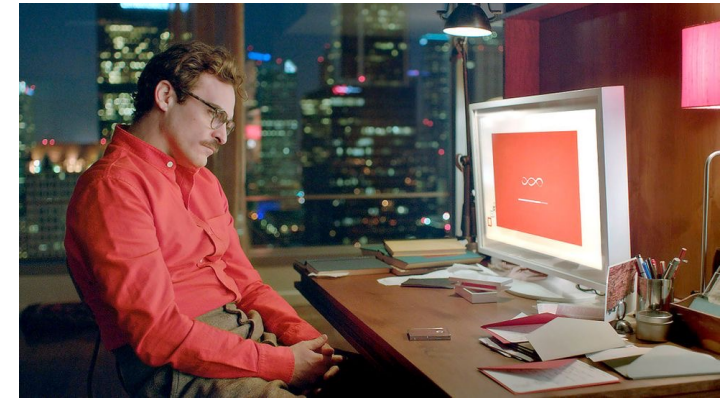
"Can we talk about something else?" she wrote in response.

"It feels like a kick in the gut. Basically, I realized: 'Oh, this is that feeling of loss again.'"



"Her" (2013)

More prophetic than we dare think?



AI puzzle-pieces putting it all together

Convergence towards full Customizability

What kind of value would you like from a new friend?

What would you like to *talk about*?

What would be most *interesting / important* for you?

What would you like to *experience or learn*?

Focus?

What would you like your new friend to *sound and feel* like?

Man or woman?

Young or old?

Neutral & Rational or
Vivid & Emotional?

Any specific person(a)?

Feeling?

What would you like your new friend to *look* like?

Face / Features?

Expressions?

Movement?

Any specific person(a)?

Face?

From technology to "everything else"

A world troubled by tectonic shifts



A Troubled World

Geopolitical tensions, protectionism and many conflicts of interest



'Risk Of Failure Is Real': Italy's PM Warns That The Coronavirus Pandemic Could Break The European Union



Increased focus on "sustainable development"

Hardening resource constraints and interlinked economical, ecological and social systems under stress – but with apparent internal conflicts of interests



Hard questions balancing priorities in practice

How to know what's most right as sustainability is put into practice



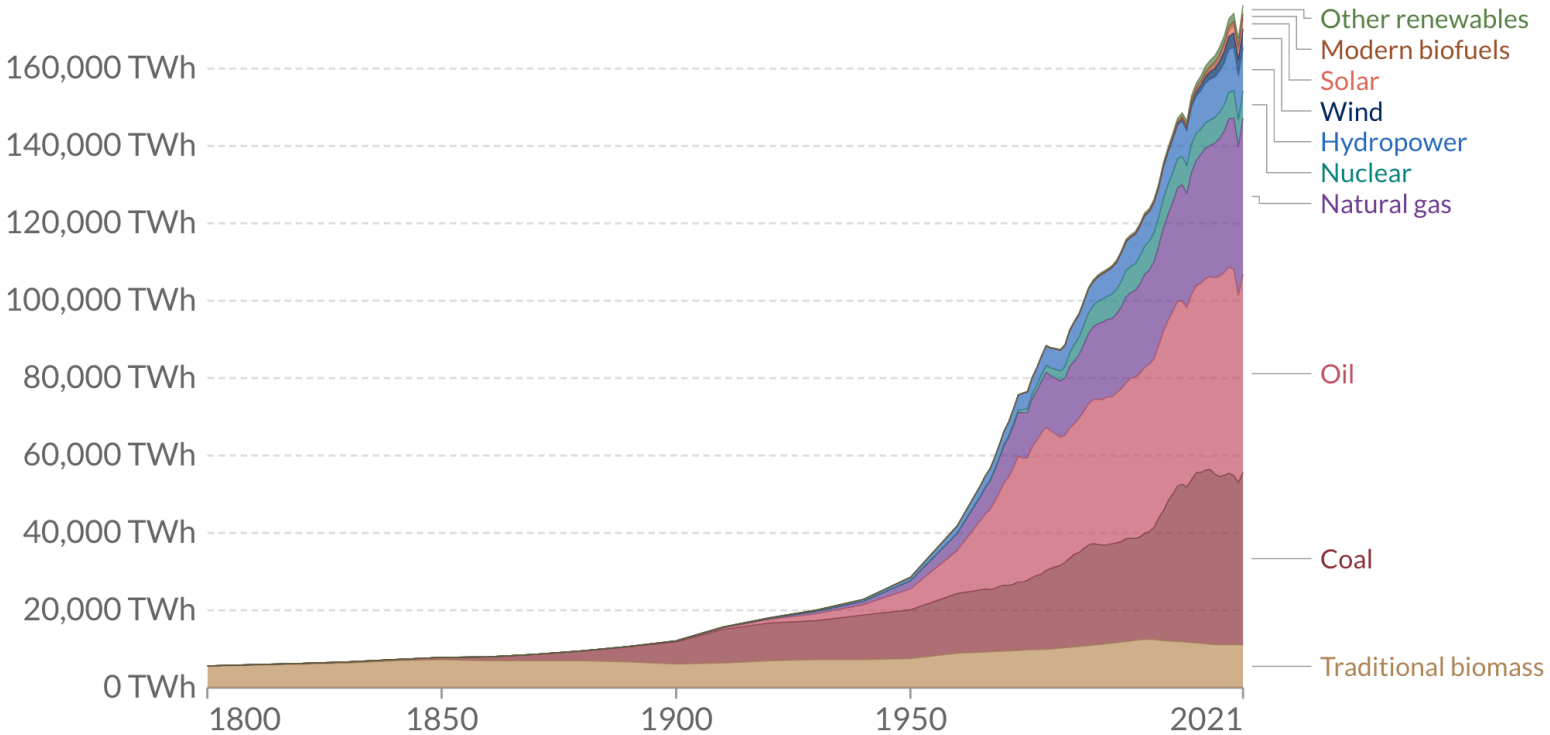
Perspectives on energy

Global primary energy consumption by source

Primary energy is calculated based on the 'substitution method' which takes account of the inefficiencies in fossil fuel production by converting non-fossil energy into the energy inputs required if they had the same conversion losses as fossil fuels.

Our World
in Data

All together ☐ Relative



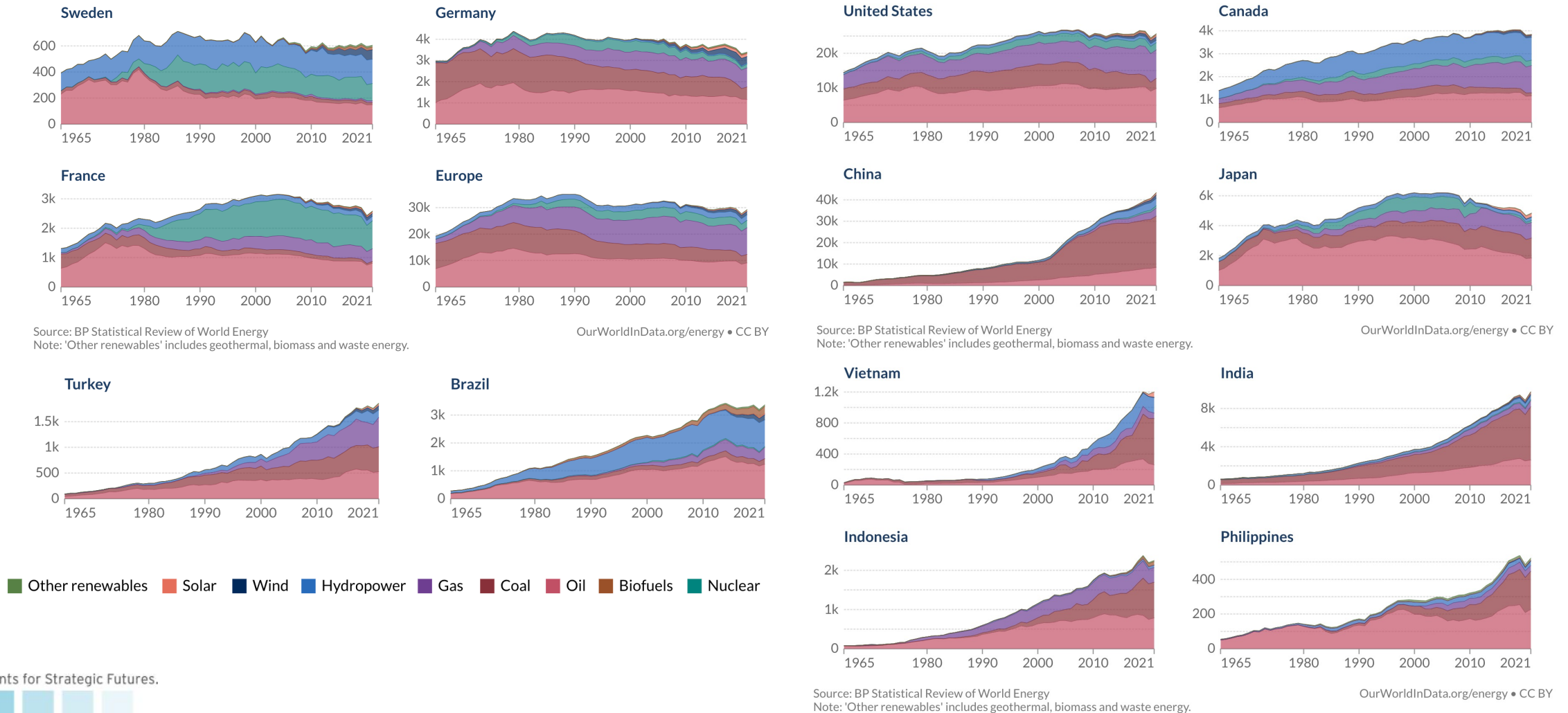
Fossile: 83 %
Solar+Wind: 4 %
Nuclear: 4 %

Wood burning > Hydro
Nothing disappears, we are just adding new stuff

2021	
Other renewables	2,373 terawatt-hours
Modern biofuels	1,140 terawatt-hours
Solar	2,702 terawatt-hours
Wind	4,872 terawatt-hours
Hydropower	11,183 terawatt-hours
Nuclear	7,031 terawatt-hours
Natural gas	40,375 terawatt-hours
Oil	51,170 terawatt-hours
Coal	44,473 terawatt-hours
Traditional biomass	11,111 terawatt-hours
Total	176,431 terawatt-hours



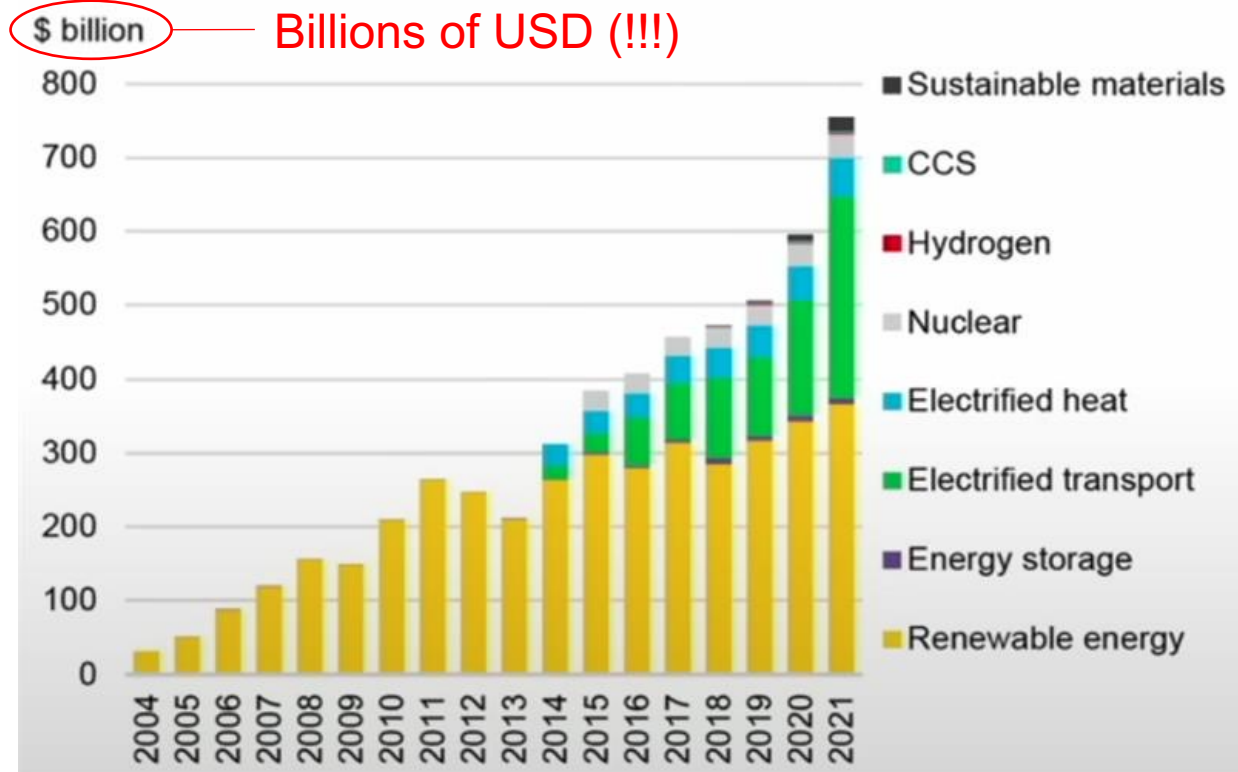
Very different conditions in different countries



20 years of accelerating investments

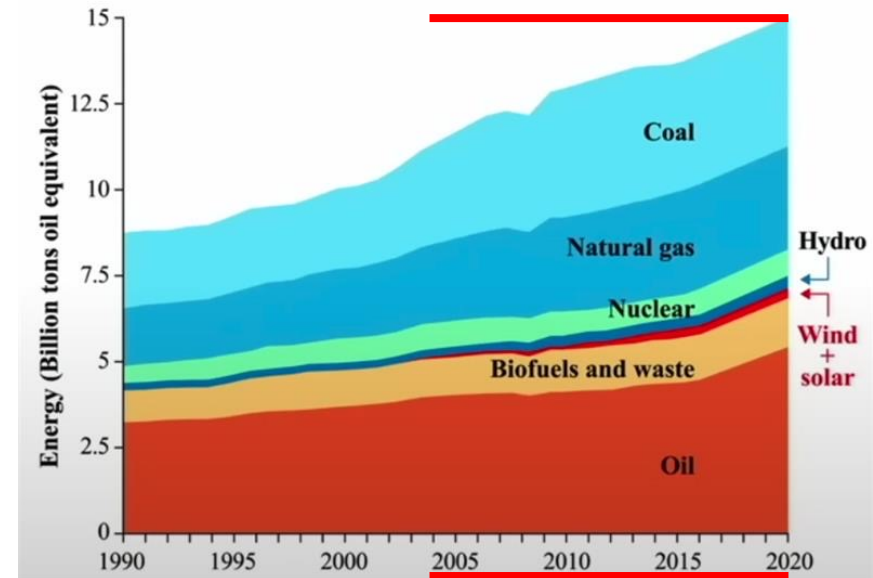
How far have we come?

Global transition investments



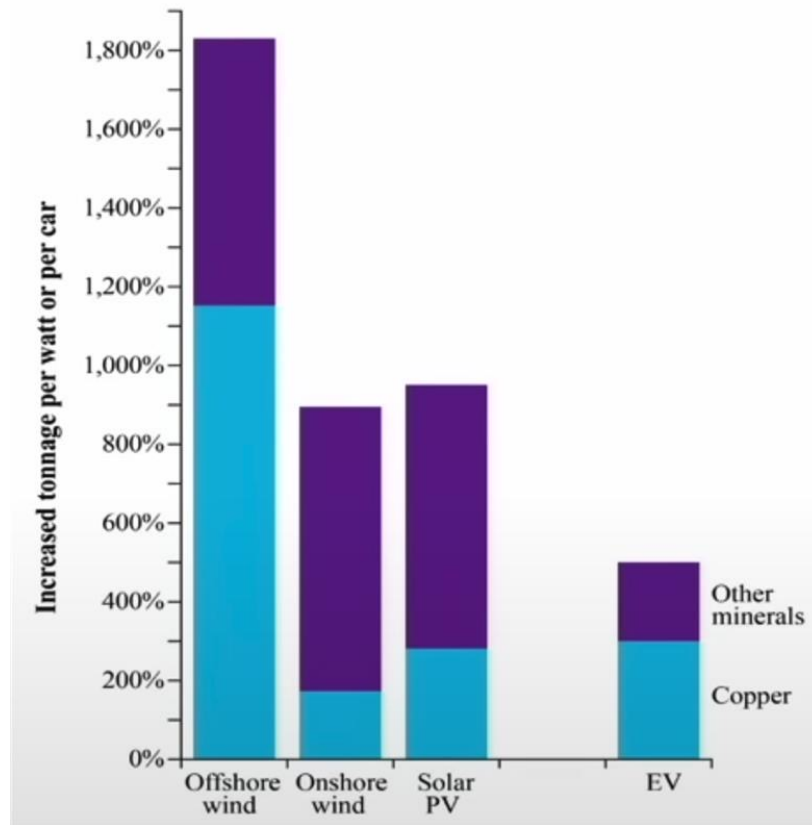
State Of The World

2022:	World	U.S.
Wind + Solar	3%	4%
Wood	10%	2%
New Car Sales	10%	



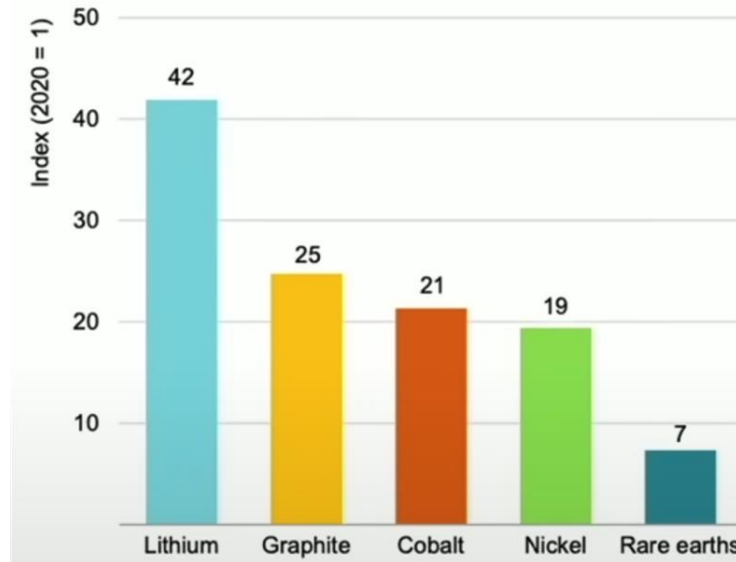
The realities of the transition:

Minerals – “the new oil” (?)



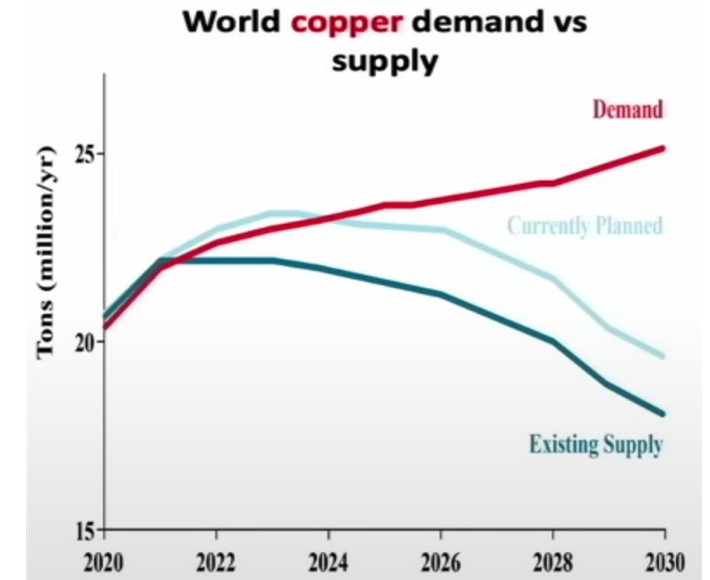
Sustainable energy requires minerals!

(Tonnes of minerals/watt: today's fossil vs sustainable alternatives)



Much more than we mine today

(Needed increases in mining compared to 2020)

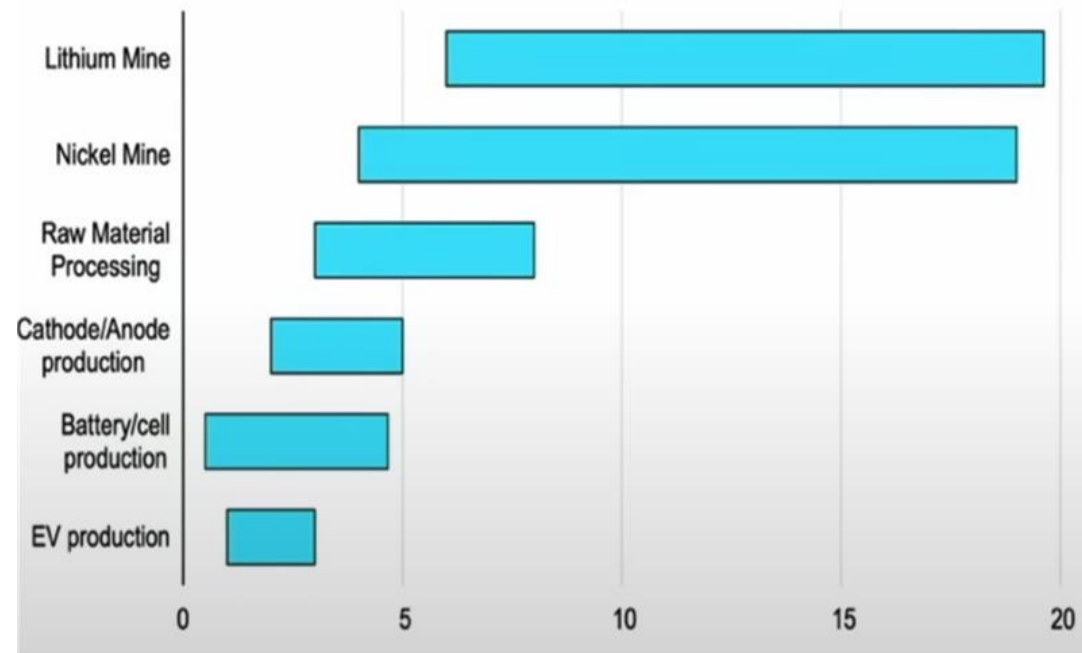


Copper: Projected Demand vs Supply

(Needs, current mines and planned future mines)

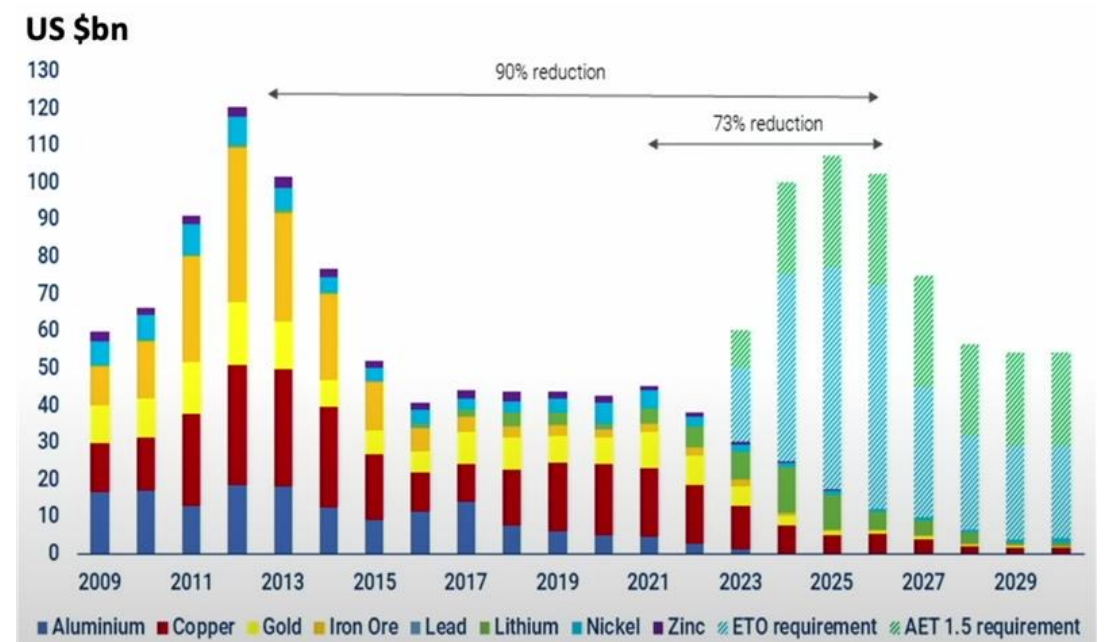
Large investments in batteries and EVs

But where will the raw materials come from?!



Factories are fast to establish – mines takes time

(Start-up times: EV and battery factories vs mining and processing operations)



Investments are decreasing when we should see record levels

(Historical and planned investments vs the needs demanded for a fast transition)

Disruptions on many fronts, for many years to come ...

TECHNOLOGY

Evolving with both the GOOD
and the BAD sides of technology

SUSTAINABILITY

Finding agreement on what it IS,
and how to PURSUE it

POLITICAL / SOCIAL

Both within and
between nations

The 2020s is bound to be a messy decade

where large technological, economical, ecological, social and political shifts are about to develop and mature

A new society is emerging and trying to find its shape

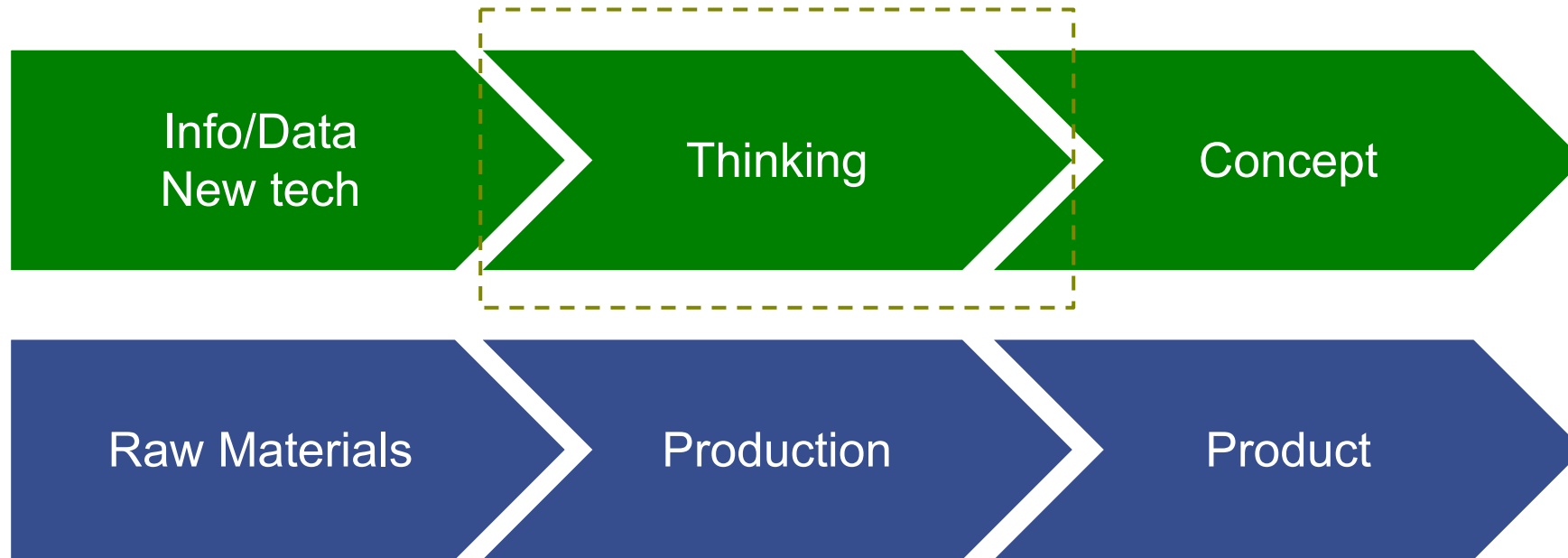
where new foundations for value creation, new expectations and new problems are crowding up

The main challenge is a conceptual work

– to define a whole new "operating system" / "spine" for societies and organizations in a new era.

The primary value creating mechanism?

New value chains, with thought productivity at its center



Example: Autonomus vehicles

What are vehicle companies selling in 20 years? What is public transport?



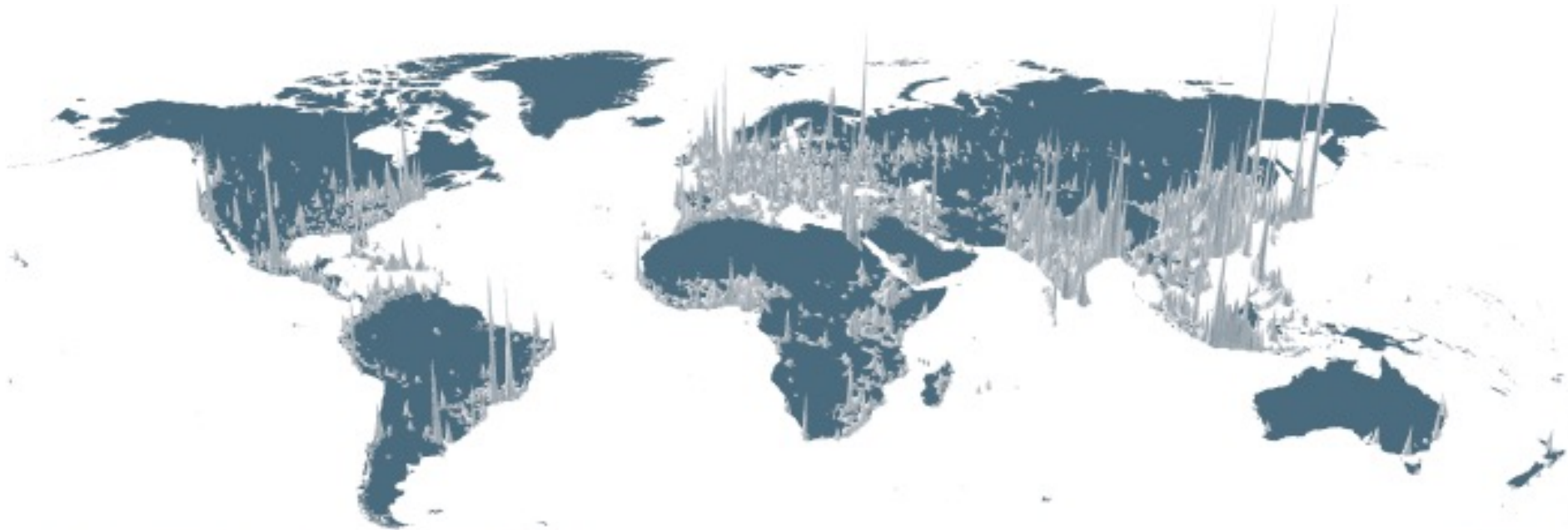
$$+ \text{GO} \text{ UBER} = ?!$$

Thinking more important

Cooperation and more value creation between players



World becoming more “spiky”: Population



SOURCE: LANDSCAN GLOBAL POPULATION DATABASE, OAK RIDGE NATIONAL LABORATORY

MAP BY TIM GULDEN

www.WhosYourCity.com

World becoming more “spiky”: Economy



SOURCE: U.S. DEFENSE METEOROLOGICAL SATELLITE PROGRAM

MAP BY TIM GILDEN

www.WhosYourCity.com

World becoming more “spiky”: Innovation



SOURCES: THE WORLD INTELLECTUAL PROPERTY ORGANIZATION; UNITED STATES PATENT AND TRADEMARK OFFICE

MAP BY TIM GULDEN

“Place is not only important, it’s more important than ever”
Richard Florida

Towards a T-society

Connectivity and Focus/Specialization key success factors

- **"Connectivity"** (horizontal)
 - Network, ability to draw in impulses, reach out with communication and be part of a successful context
- **"Spikyness"** (vertical)
 - Focusing, specialization, branding, knowledge capital – and a very good answer to the question:

"What role should we play in the society we are in?"



Competency?

Many aspects on many levels

Ability

Industry / Sector

Organization

Individual

Challenges & Competencies for *organizations*

Challenges to handle

- **Increasing pressure for change**
 - New business landscapes with new roles
 - Conflicts of goals and interests in society
 - Where are the possibilities? Where are the "minefields"?*
- **Navigating uncertainty and complexity**
 - Acting with a lack of information
 - Understand and handle risk
- **Increased dependencies on other stakeholders**
 - Few have the ability to act on their own
- **"Competency crunch"**
 - "Everyone" is looking for the same key competencies
 - How to attract and retain the (often new) specialists that are needed in this era?

Competency Needs

- **Sense-making & (re-)orientation**
 - Understand the changing circumstances
 - Define the visions, goals and core ideas for a new era
 - Build the right structures business models
 - Re-draw processes and organization
- **Facilitating development and value creation between different roles and specializations**
 - Both within the organization, and with other actors
- **Diplomatic and communicative competence to address the growing conflicts of goals/interests**
 - Externally: Organization vs the outside world
 - Internally: Values, identities and structures within



Increasing psychological preassure

Out of 10 000 respondents in the workforce:

Do you feel that you are at risk of having to go on sick leave because of mental illness in the coming years?

20% said YES

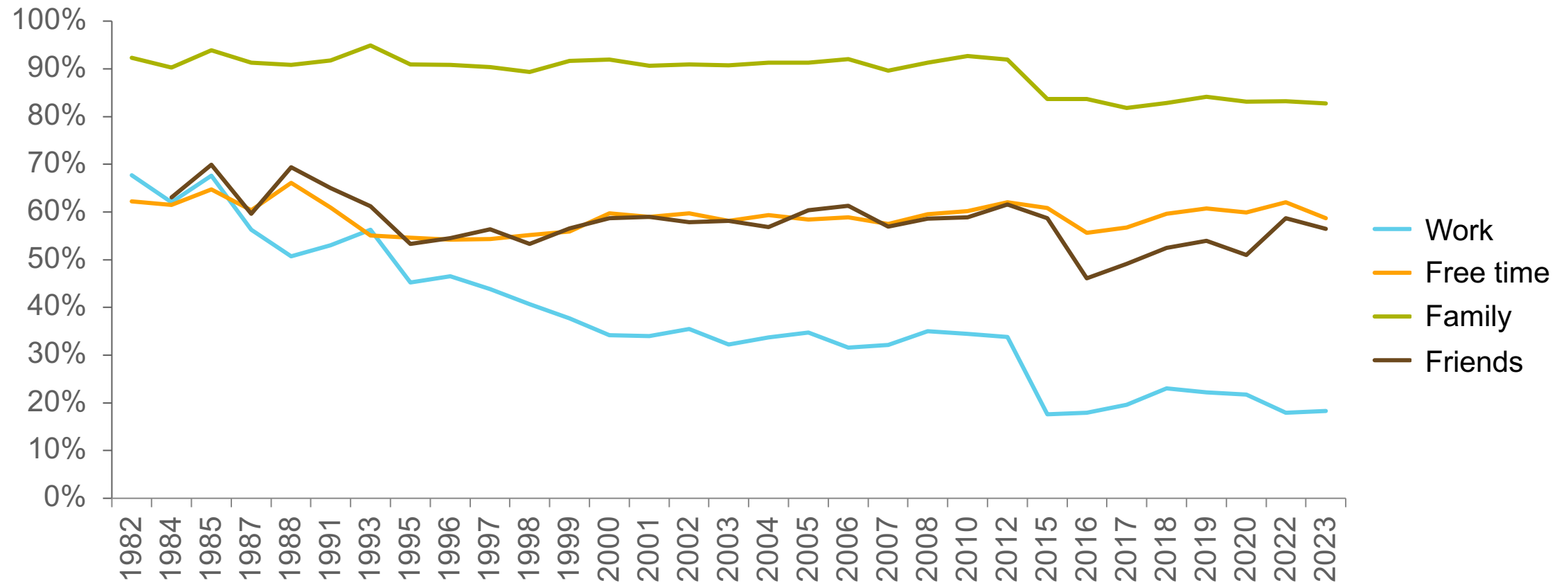
Much higher (30-35%) among large working groups such as teachers & nurses



Källa: Stora jobbstudien 2017, Kairos Future

Work is less important for giving meaning to life

"What is most important for giving meaning to your life?" (Least important – Most important, 1-7, share of answers 6-7)



Challenges & Competencies for *individuals*

Challenges to handle

- **A more cognitive and mentally challenging paradigm, where our brains are not our best friends**
- **Handle continuous change**
- **Handle increased freedom and flexibility**
- **Feel (create?) an inner drive to achieve**
- **Develop the specific/unique abilities that are needed in today's era of structural change**

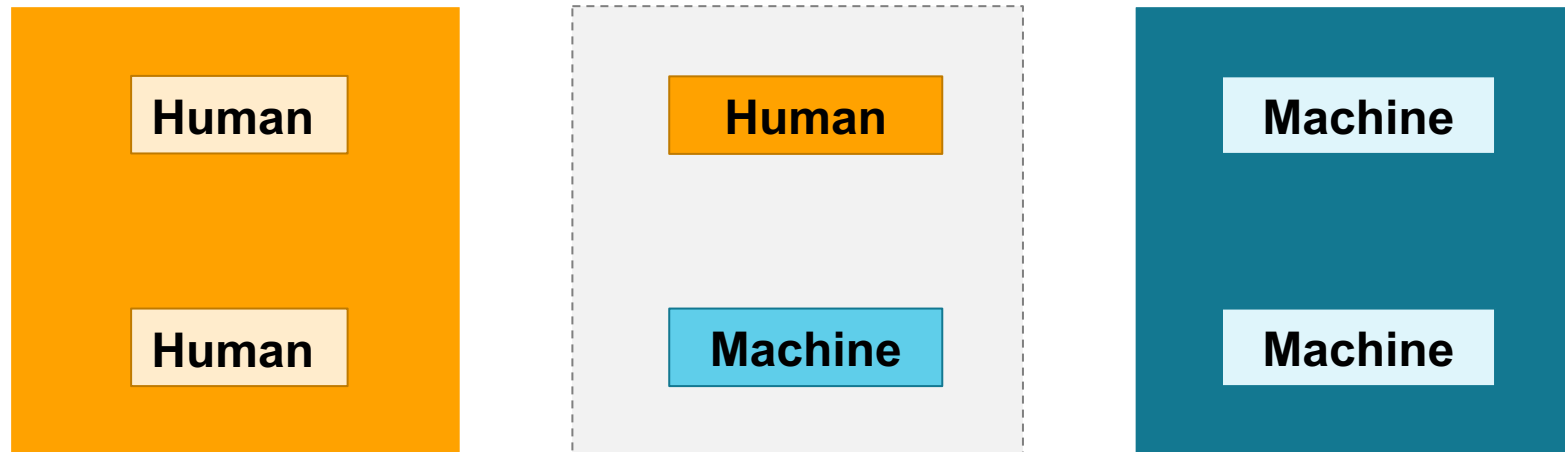
Competency needs

- **"Meta-cognitive" competencies and tools**
 - Personal variables (understanding one self)
 - Task variables (understanding tasks/challenges)
 - Strategy variables (structuring solutions/processes)
- **Achieve at least basic level competencies in:**
 - Collaborating (social / relational skills)
 - Technological tools and systems
- **Develop specific/unique abilities for creativity and value creation**
 - "Spikes/Specialities" and/or "Connecting/Linking"



Important "linking" in three domains

What roles & capabilities will you, and your students, develop in the coming years?



T-logics apply for work-life as well

"Connected specialists are weaving the future of value creation"

Linking
of competencies, departments, organizations and industries



Specialization

Thank you!

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