



# Health-care in 30 years from now

Then I'm dead and buried, or??



2048

A possible future

30 years in nature – long?

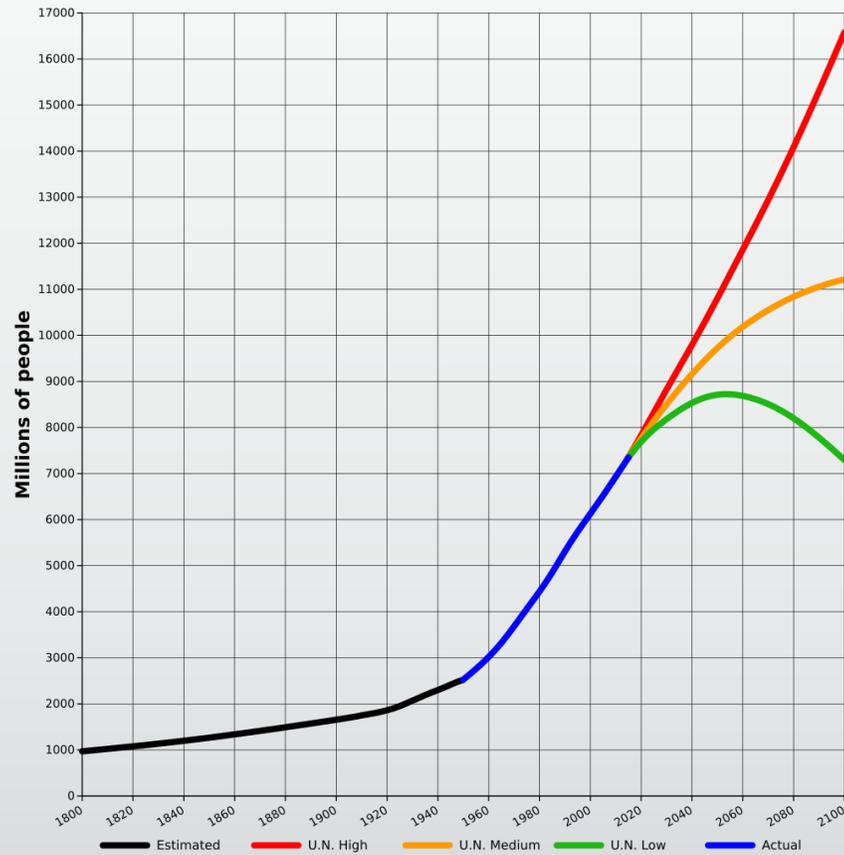


What is healthcare?  
Is it about health, or??

# Future traffic??



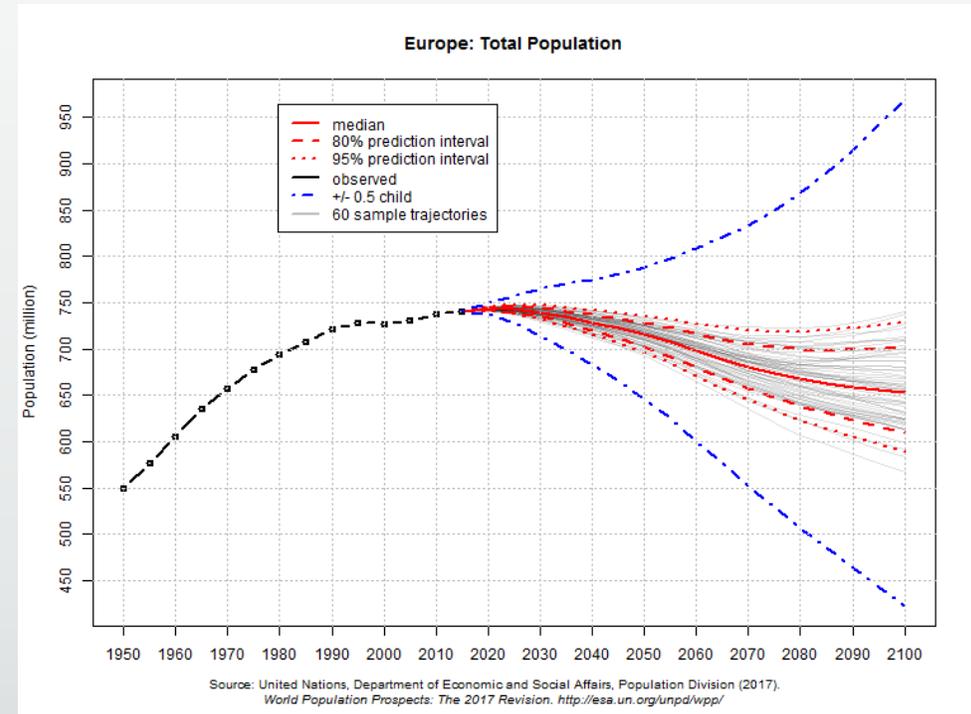
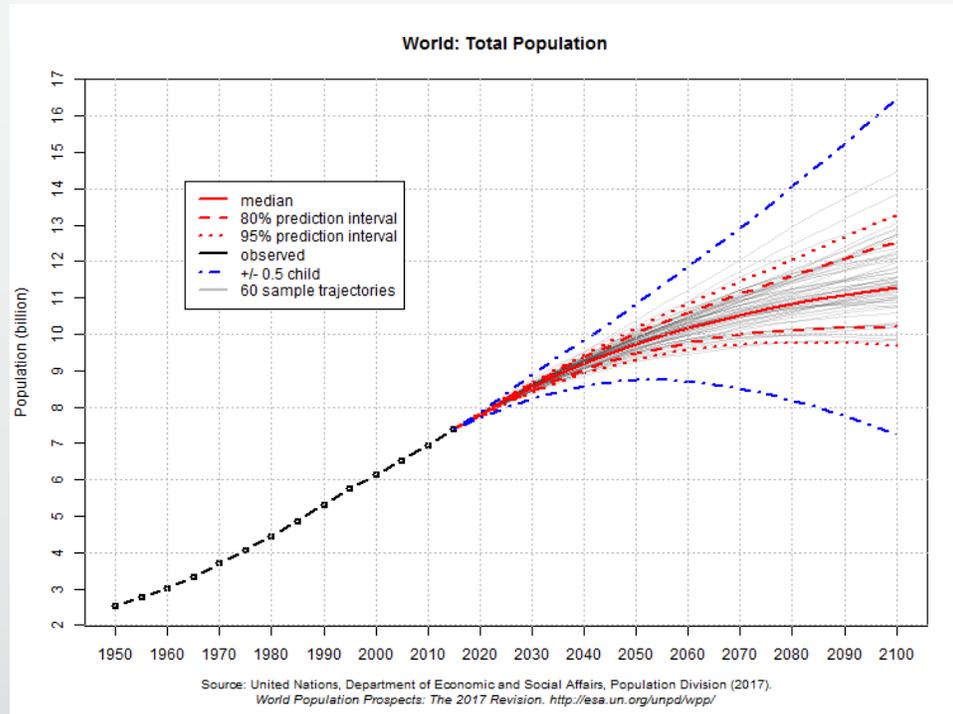
# How many of us??



Hans Rosling explains why ending poverty – over the coming decades – is crucial to stop population growth. Only by raising the living standards of the poorest, in an environmentally-friendly way, will population growth stop at 9 billion people in 2050.

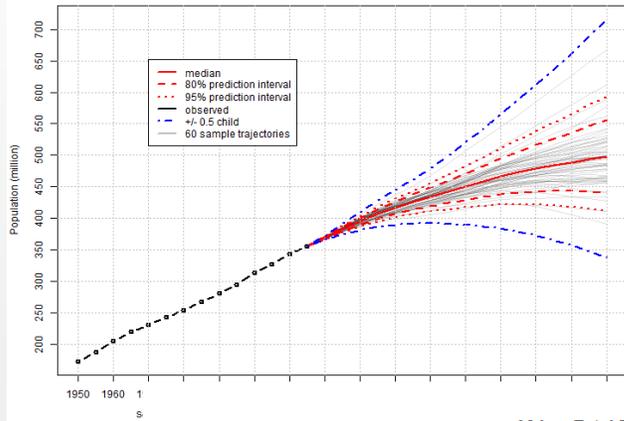


# Population predictions of growth by the UN

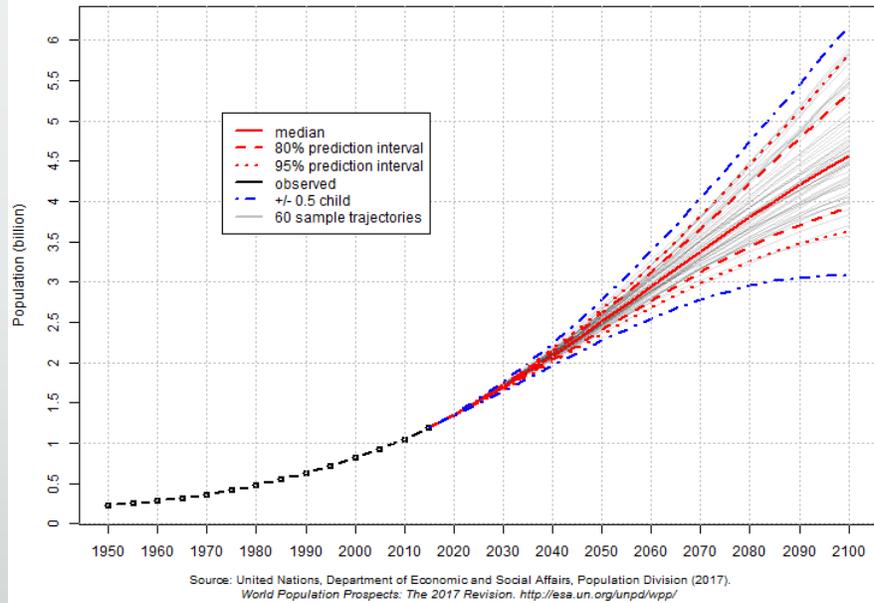


# Where is the growth?

Northern America: Total Population

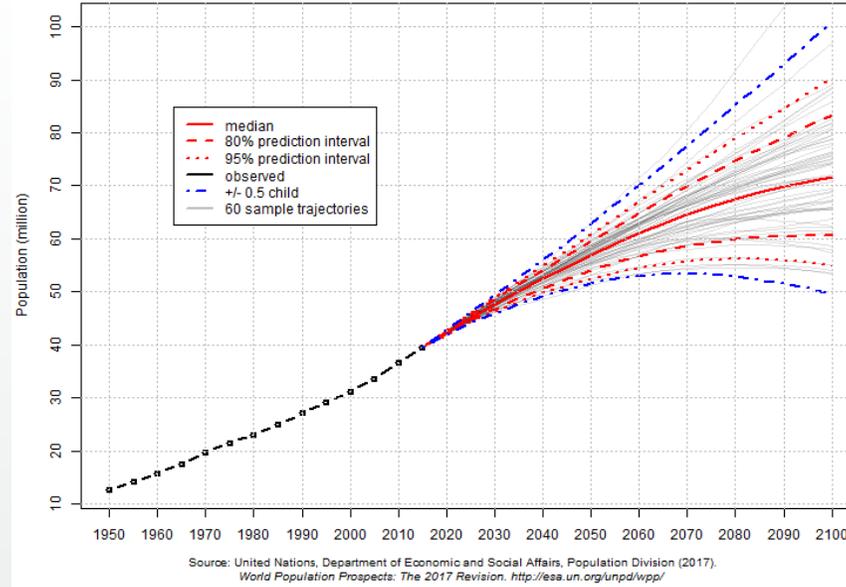


Africa: Total Population



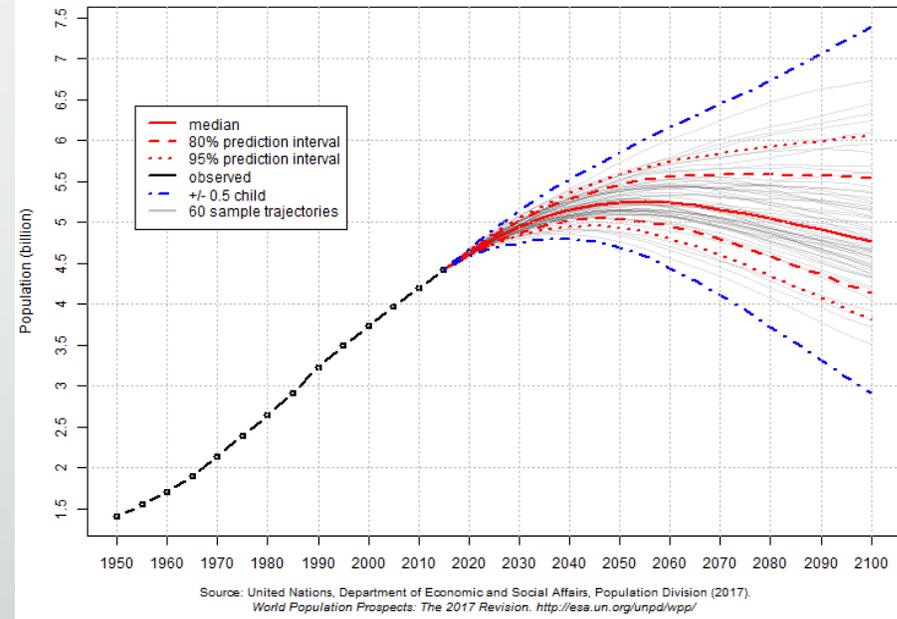
Source: United Nations, Department of Economic and Social Affairs, Population Division (2017).  
World Population Prospects: The 2017 Revision. <http://esa.un.org/unpd/wpp/>

Oceania: Total Population



Source: United Nations, Department of Economic and Social Affairs, Population Division (2017).  
World Population Prospects: The 2017 Revision. <http://esa.un.org/unpd/wpp/>

Asia: Total Population

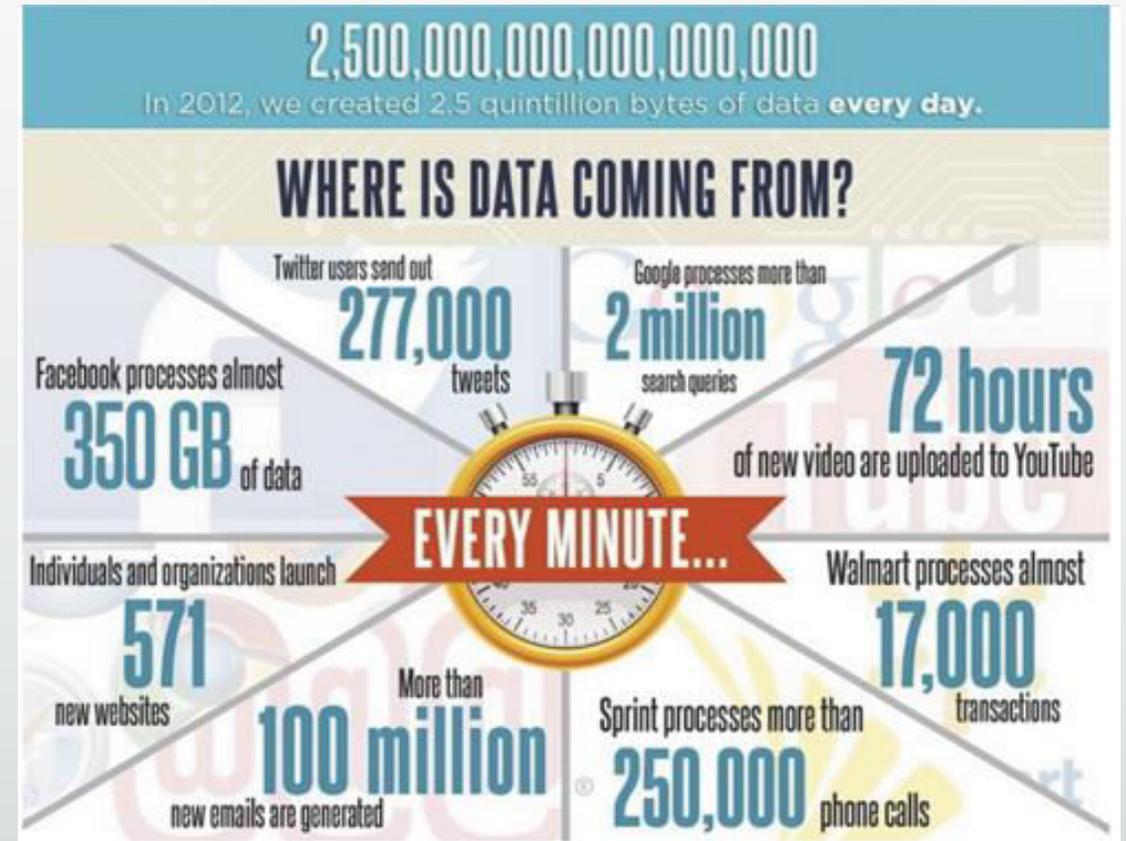
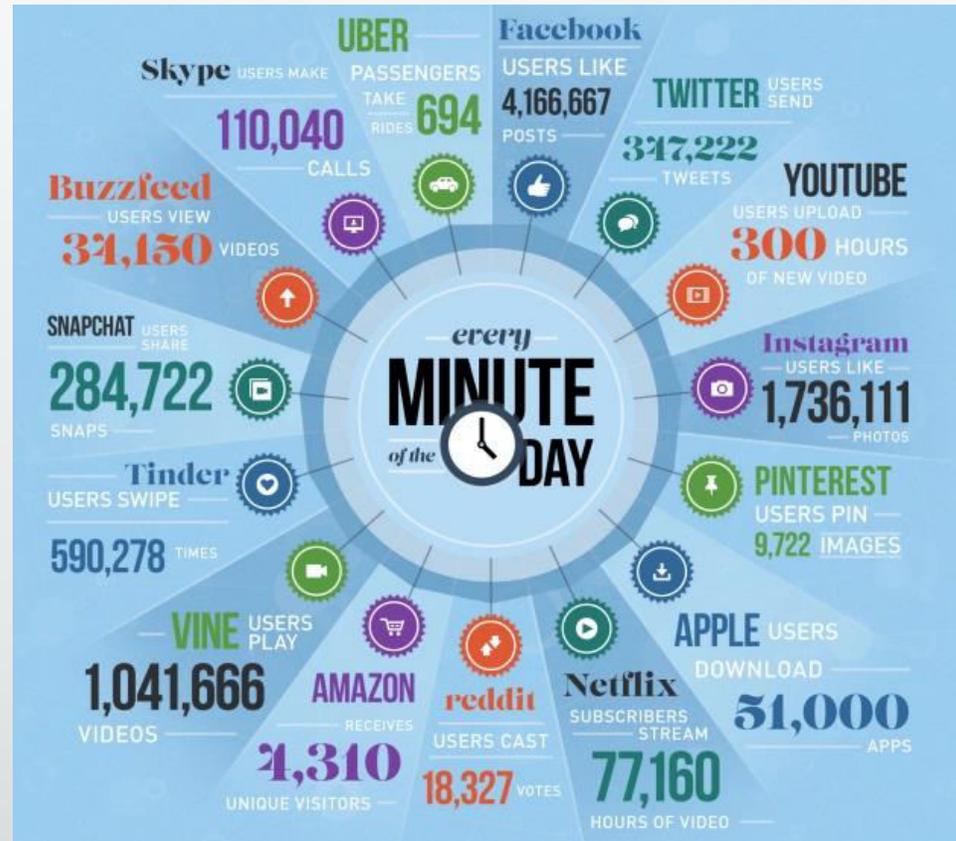


Source: United Nations, Department of Economic and Social Affairs, Population Division (2017).  
World Population Prospects: The 2017 Revision. <http://esa.un.org/unpd/wpp/>

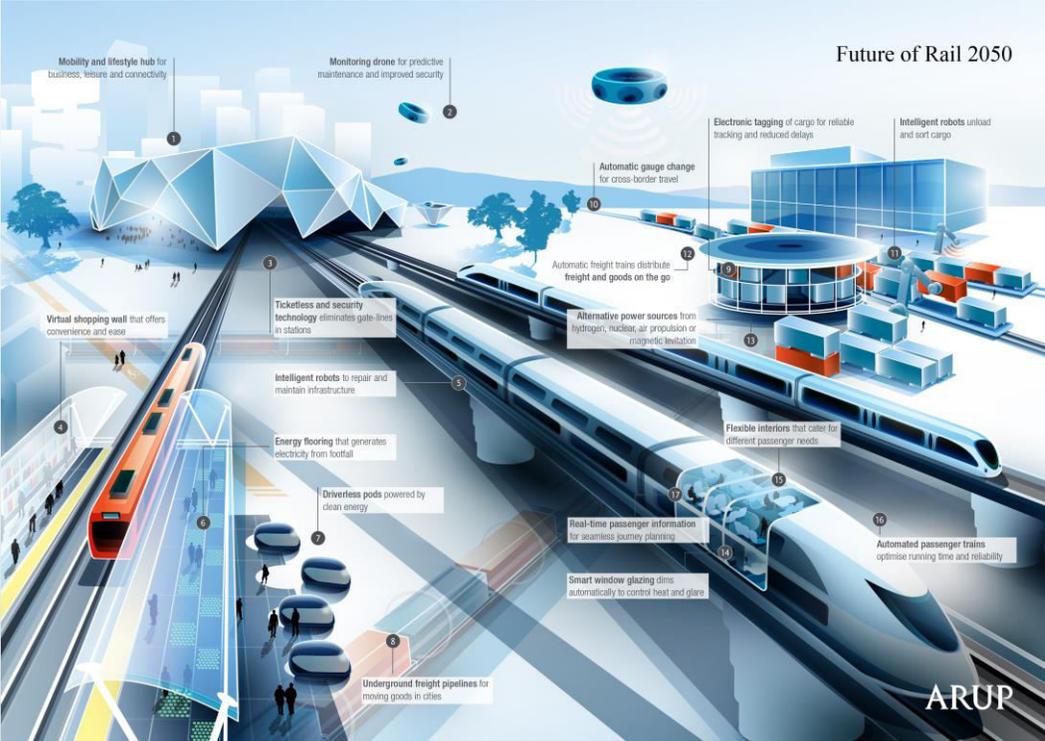
# Migration...



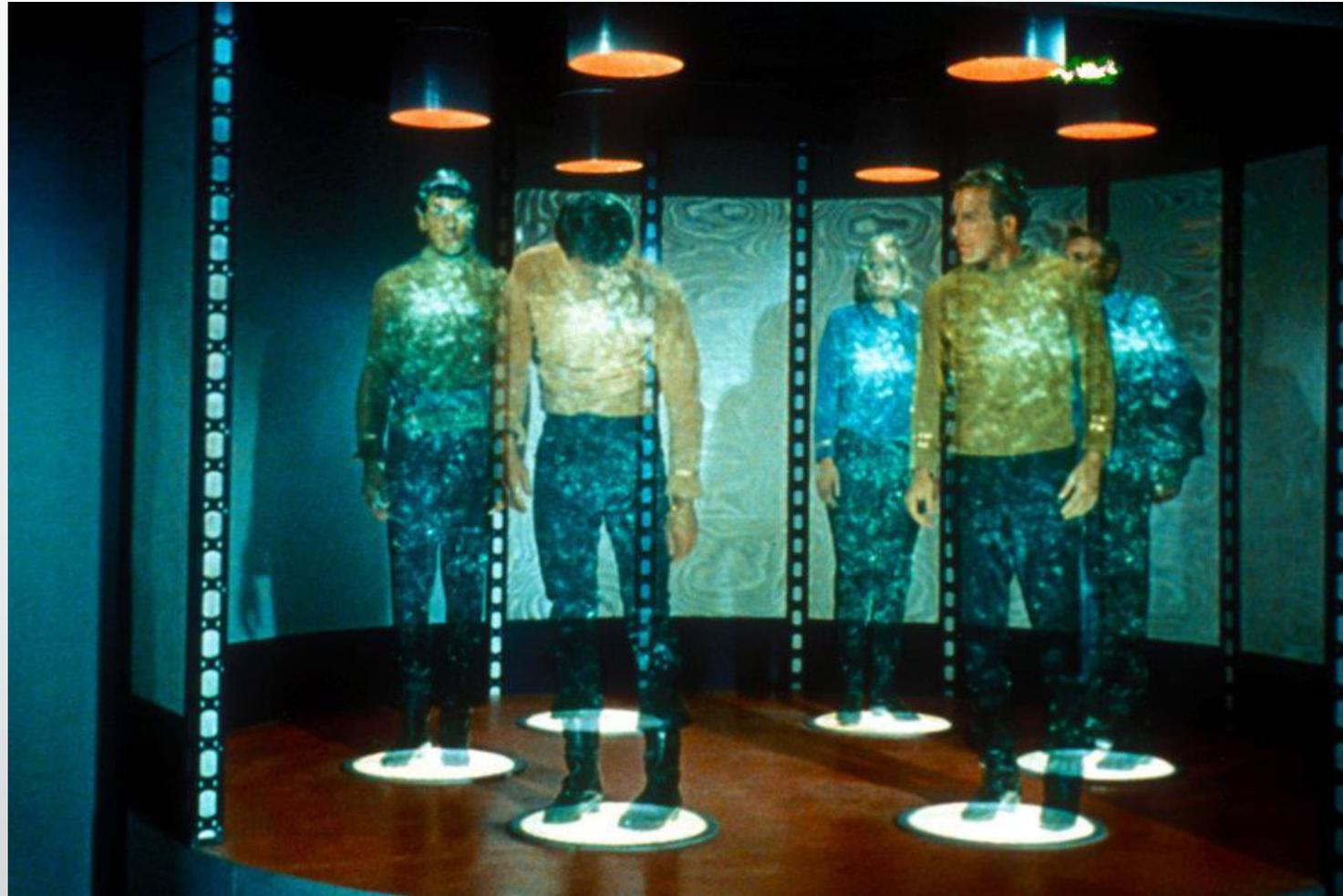
# Communication, how and why...



# How do we travel?



## How do we travel 2



# How do we live?



# Where do we work?

- Microsoft future campus in Dublin



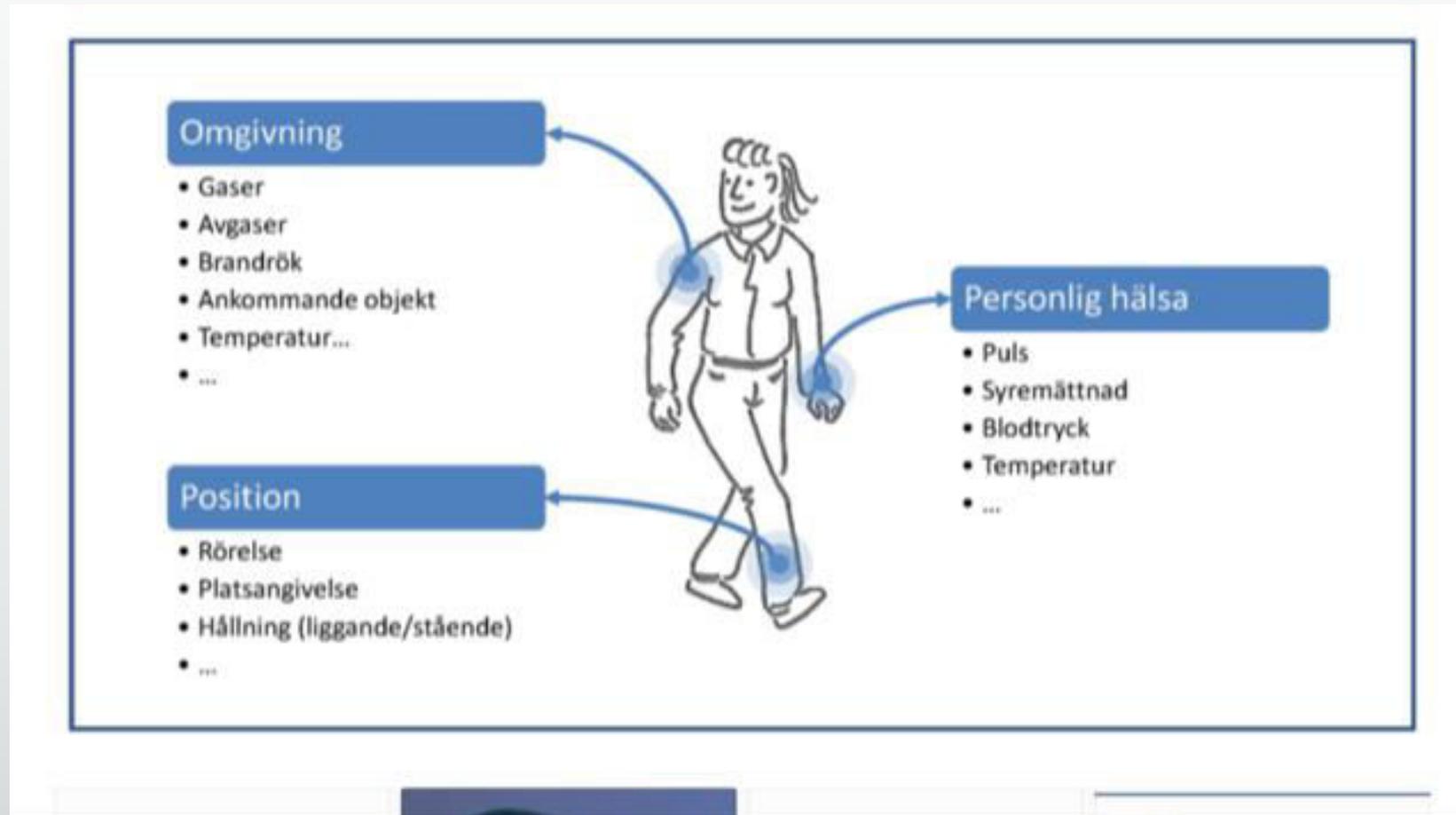
# All this shape our health-care, or??

- Our living conditions – houses apartments or...
- Our work – content, places, time
- Travel – frequent, why, where, how – or like Musk says tunnels all over the globe
- Communicate with friends
- Nature
- Entertainment..
- How do I buy things, shopping
- How do I pay for things
- Leisure – reading, watching TV, film
- What do I eat
- What kind of government do we have
- Who owns what

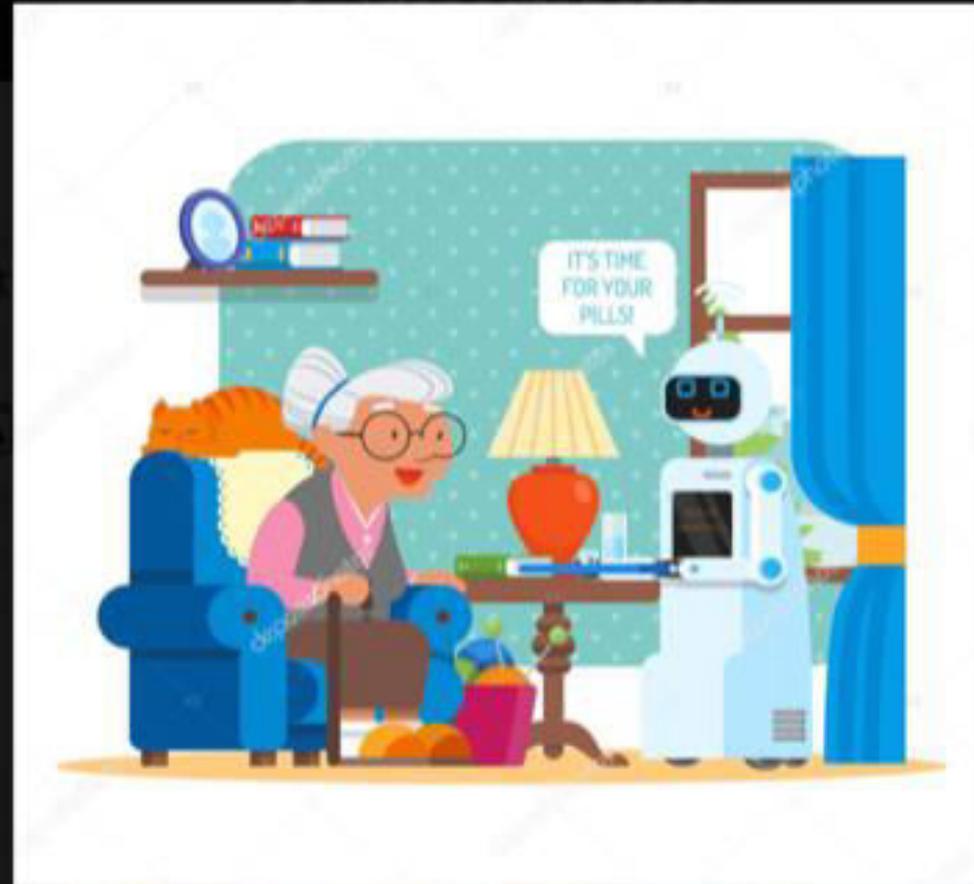
# What about healthcare in 2048?



# Wearables and beyond – Watch app., clothes nanotechnology



Distant care – to know what level of treatment I need, and to go where

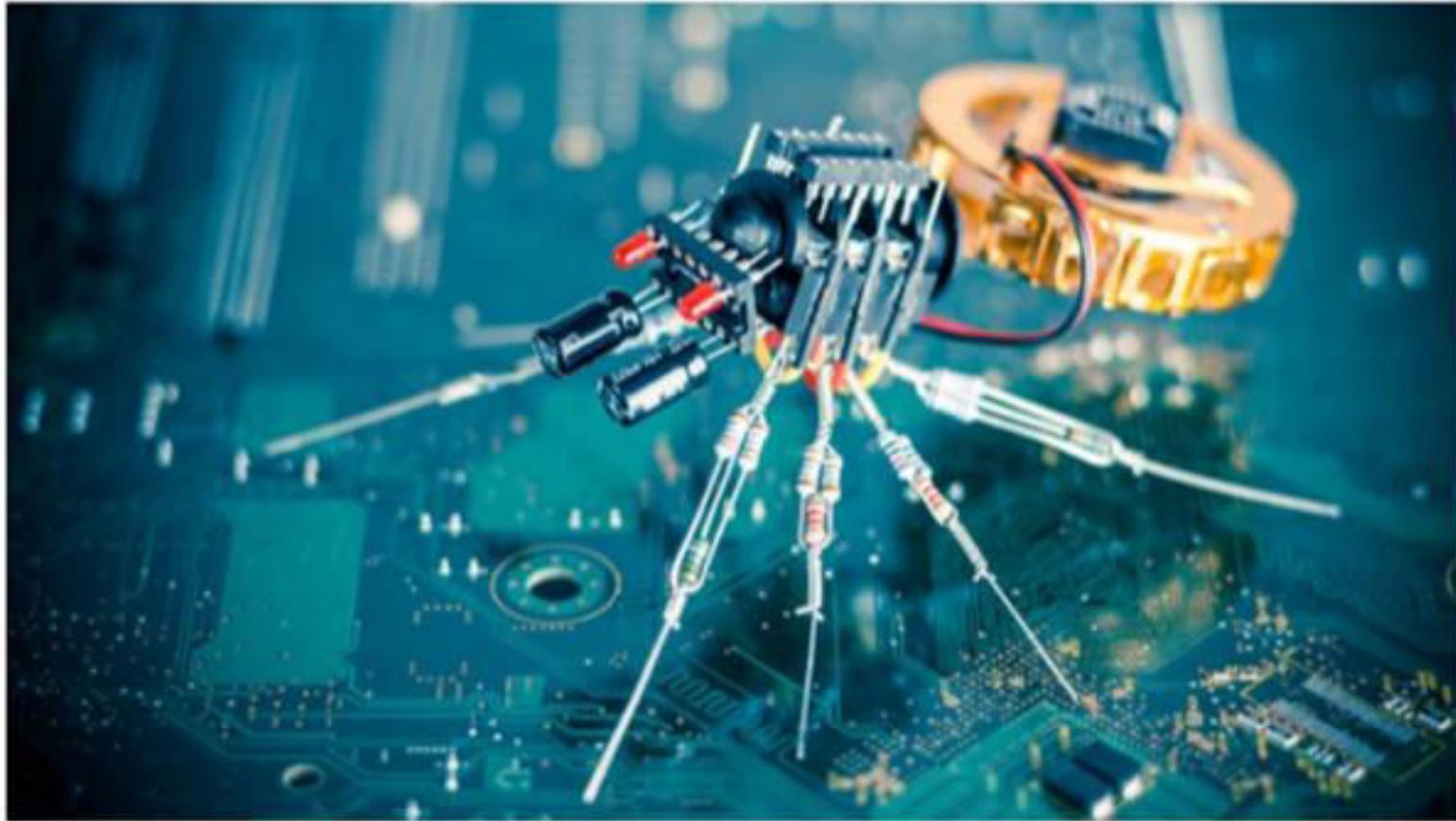


# Surgical robots and androids

Best experts available from all over the world



# Nanotechnology – home delevierables detect early signes – True preventions!



A centimeter is one-hundredth of a meter, a millimeter is one-thousandth of a meter, and a micrometer is one-millionth of a meter, but all of these are still huge compared to the nanoscale. A nanometer (nm) is one-billionth of a meter, smaller than the wavelength of visible light and a hundred-thousandth the width of a human hair

# 3D –printers – Spareparts - prostetic, tissues - drugs



Currently, spare parts suppliers are not meeting the needs of their customers; 50 percent of customers have looked into 3D printing their own parts.

Companies still think too traditionally; in the future they will sell copyrights instead of actual parts.

Partnering will be key to the successful printing of spare parts.

Lack of 3D printing expertise and technical maturity of 3D printing are seen as the main challenges of 3D printing.

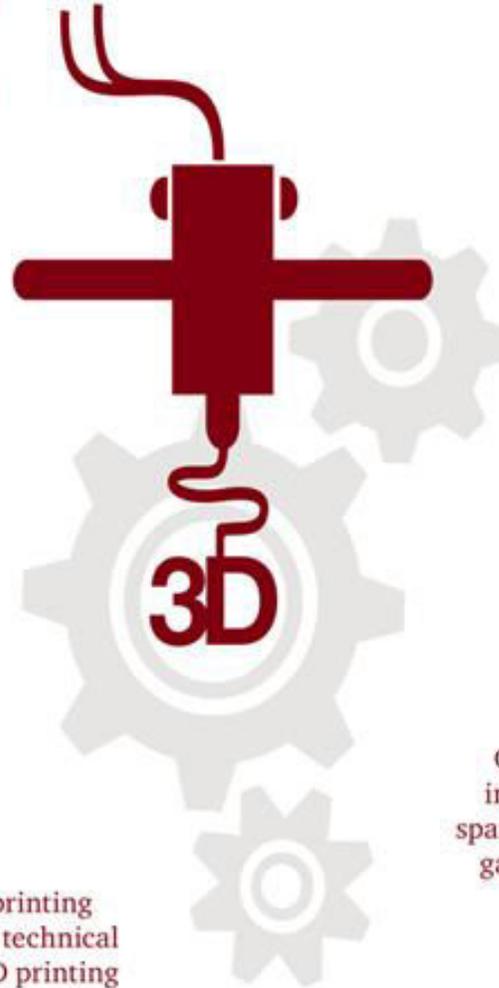
than 85 percent of spare parts suppliers will incorporate 3D printing into their business.

In 10 years, German spare parts suppliers will save €3 billion annually by using 3D printing.

Companies are still not aware of the full potential to be gained from 3D printing spare parts.

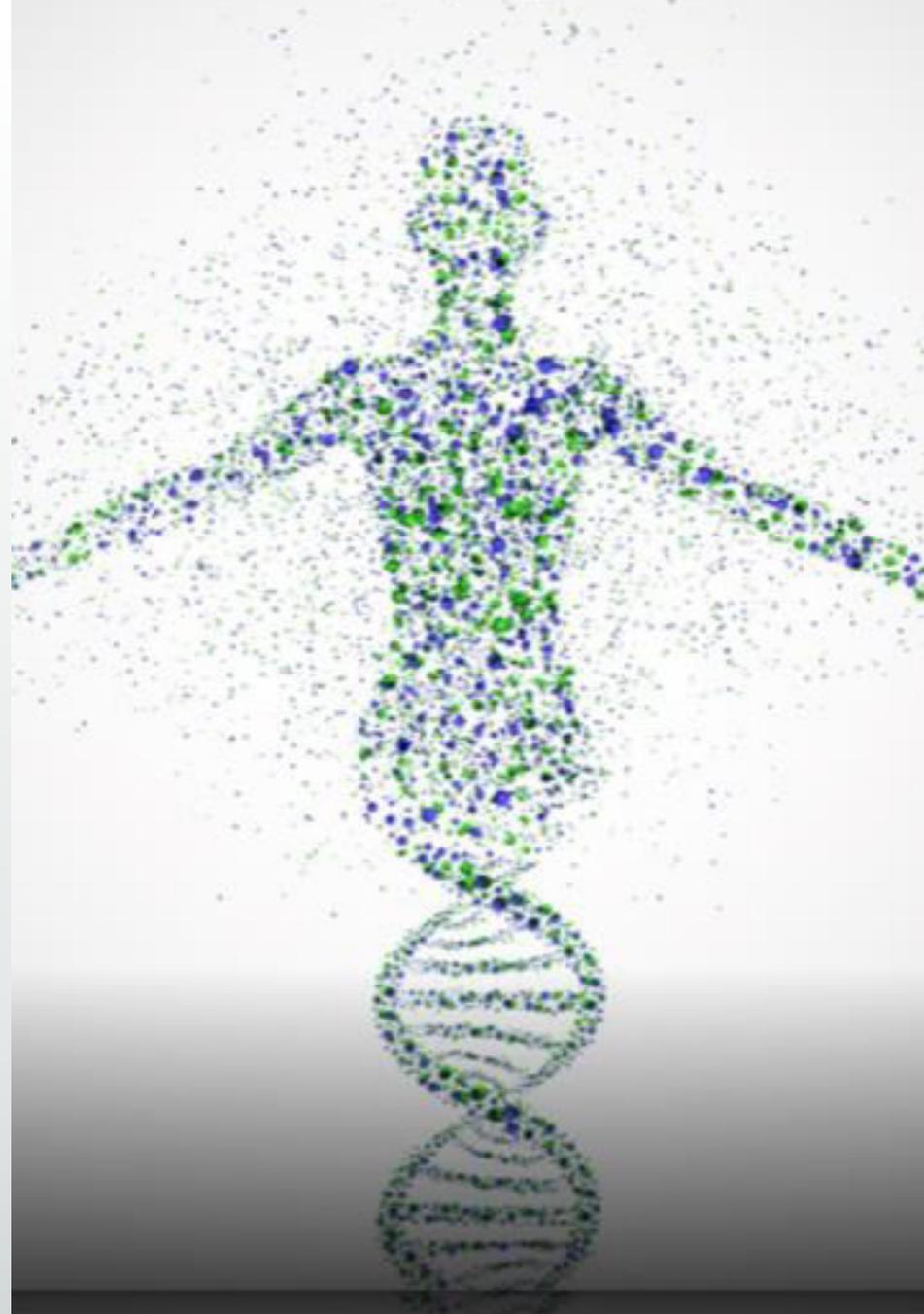
Companies that invest in printing spare parts today will gain a sustainable competitive advantage.

More than half of companies fear to lose market share to third-party spare parts suppliers.



Genomics and  
biotechnology – 1 man  
global genbank

AI invests a lot



# Bionic Body Parts

**Skull implants** can now be customized for a patient's head using a 3D printer.

**The Argus II system** turns images into electrical pulses that are sent to the brain, which can learn to interpret them as a visual pattern.

**NeoSpeech** is a company that works to create natural-sounding speech from text. Its software is what astrophysicist Stephen Hawking uses to communicate.

**A chatbot** is a computer program that can carry on an almost-humanlike conversation.

**These prosthetic arms** are battery powered and can last several days on a single charge.

**The fingers** on these cutting-edge prosthetic hands can bend at each joint and grip with variable strength - which means they can be used to tie shoelaces.

**This prosthetic hip** rotates up to 130 degrees, which is important for everyday activities like getting in and out of a car.

**This knee** uses a gyroscope, an accelerometer and a microprocessor to adjust to different environments so that tasks like stepping over obstacles and walking up stairs are possible without awkward maneuvers.

**The Rex exoskeleton** is meant to make wheelchairs obsolete. It's operated with a joystick and includes 29 computer processors that allow it to sit, stand, walk, and turn.

**These BiOM ankles** were invented by Hugh Herr, a biophysicist and engineer, who lost both of his legs in a rock climbing accident. He now rock climbs using prosthetic feet.

**A cochlear implant** sends electrical impulses directly to the auditory nerve. Unlike a hearing aid, it doesn't amplify audio; it gives the brain a useful representation of sounds and speech.

**This synthetic windpipe** is 3D-printed out of a cutting-edge material that can be seeded with a patient's own stem cells to make it a possible replacement for a damaged organ.

**An artificial heart** pumps two thousand gallons of blood every day, and can replace a human heart for up to four years.

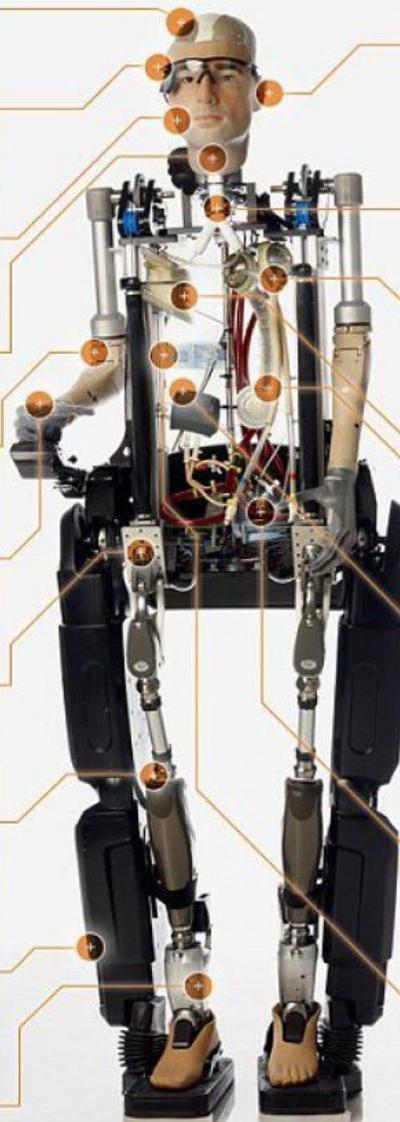
**Artificial lung** transplants are still a long way off, but this external lung works as a filter that could help patients with breathing problems.

**This artificial pancreas** could make a huge difference in the lives of people living with diabetes. It automatically regulates blood sugar, which could make insulin injections obsolete.

**This artificial kidney** could replace dialysis in the future. Instead of long, frequent visits to the hospital, people with kidney failure could have this small prosthetic with them at all times.

**"Plastic blood"** is a blood substitute that is made out of plastic molecules with an iron atom at their core. It can carry oxygen through the body, like natural hemoglobin, but can't replace all functions of blood.

**This artificial spleen** is currently being developed to remove toxins from blood and help treat bloodstream infections that affect millions of people worldwide.



# What is healthcare? To summarize

- Cognitive computers like stethoscope
- Virtual reality
- Scanners at home – Star Trek
- Wearables and beyond – Watch app., clothes nanotechnology
- 3D –printers – prosthetic, tissues drugs
- Genomics and biotechnology – 1 man global genbank
- Nanotechnology – home deliverables detect early signs – True preventions!
- Distant care – to know what level of treatment I need, and to go where
- Surgical robots and androids
- Neuroprosthetics

# Challenges.... Threats...

- Food crises
- Wars – fighting for power and land
- Pandemics –
- Global climate changes..
- Ownership..
- Culture – religions..
- Changes of values..
- Waste disposal- manage it
- My opinion is today counted - but that curve probably turns down.
- Who is going to pay for all of this?

Welcome to my future

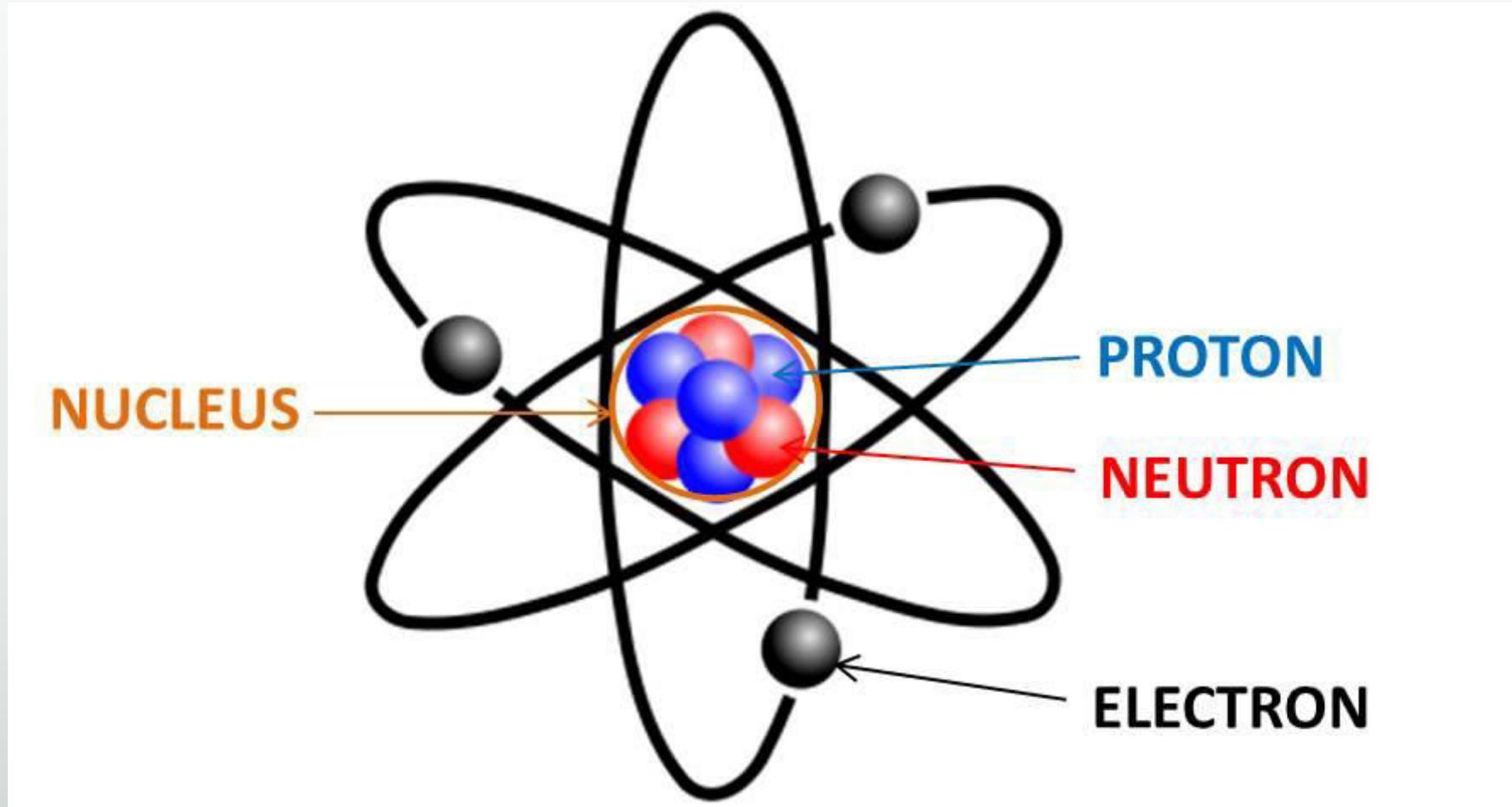
Anders AI





Welcome to my future 2

This is what my body exist of....



# ATOMER OCH MOLEKYLER

I din kropp finns det cirka

**5 000 000 000 000 000 000 000 000 000**

atomer

## Människokroppen:

Syre drygt 60 %

Kol ca 20 %

Väte ca 10 %

Kväve ca 3 %

Kalcium ca 2 %

Fosfor ca 1 %

Kalium ca 0,4 %

Svavel 0,3 %

Klor ca 0,2 %

Natrium ca 0,1 %

Magnesium ca 0,1 %

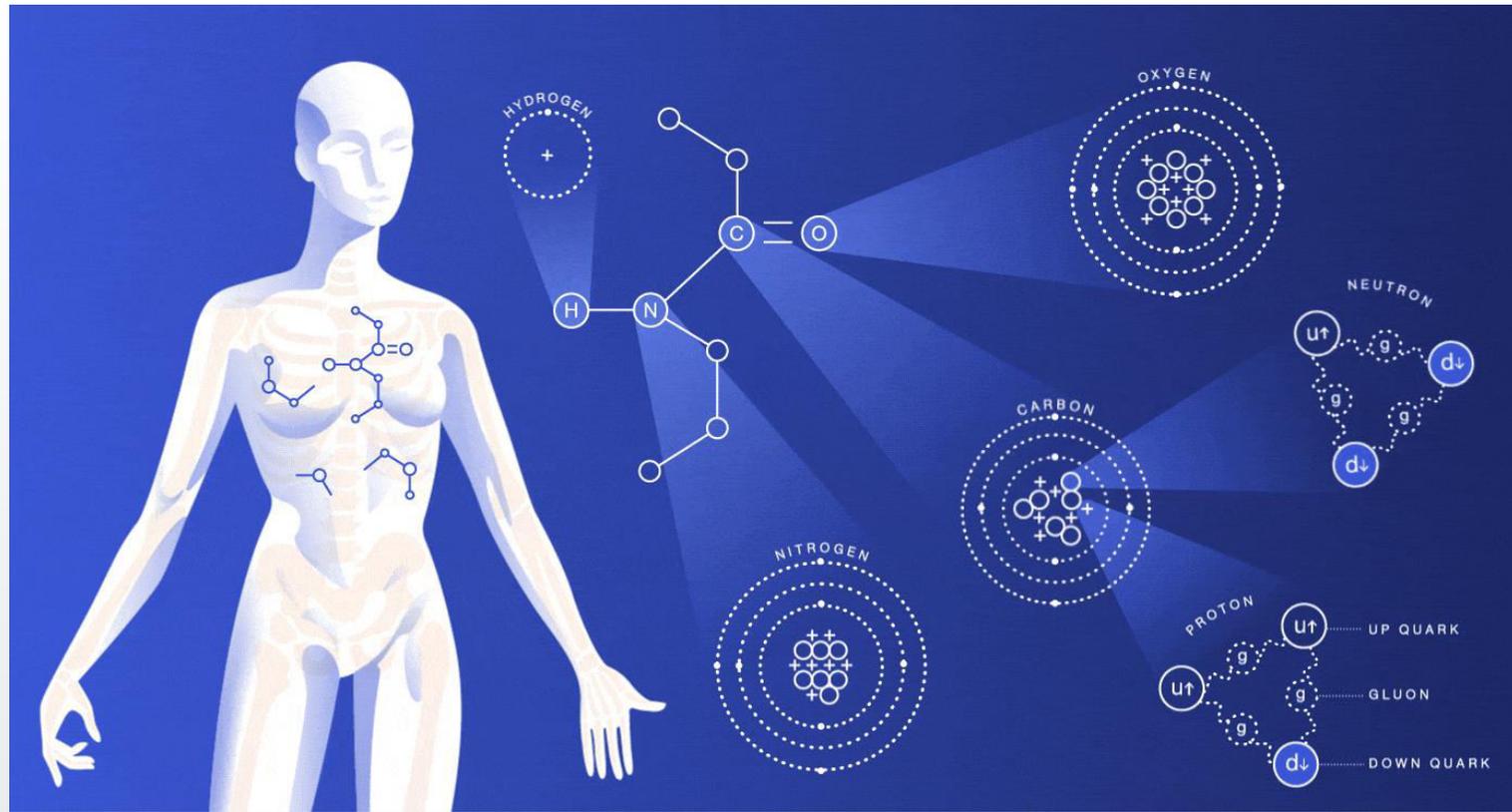
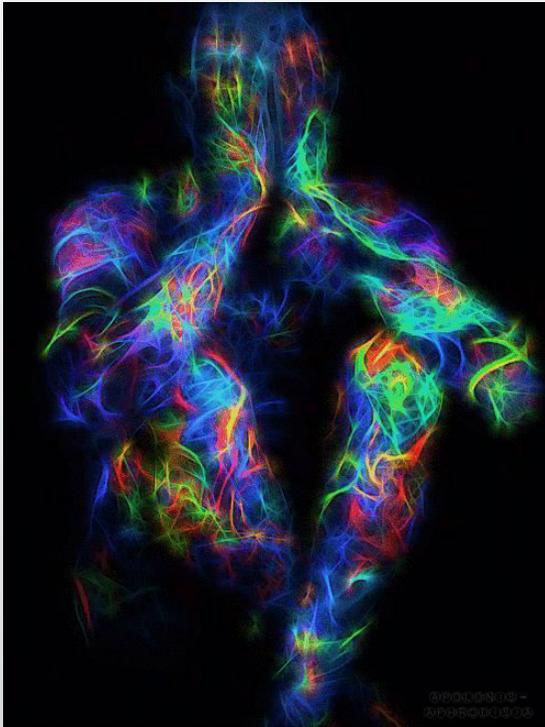
## Andra spårämnen (< 0,01 %):

Magnesium, bor, krom, kobolt, koppar, flor, jod, järn, selen, mangan, molybden, kisel, tenn, vanadium, zink



p 2

# Shower cabin



# Conclusions

- Poor and rich countries , which makes it necessary to work internationally
- Everyone will know there full genome why we need prepare our self that new perspective
- My data is available for everyone, why we need to work on the legislative process to make this good
- My own social life will be so different from today why we need to understand this and to make this knowledge involved in governments work.
- Rare diseases will not exist anymore, N=1
- Since everyone agree that whatever you think about the future longer than 5 years will not happened you don't need to believe any of this.



Thank you for your attention,  
and -See you there!