

A futuristic humanoid robot with a white and red color scheme is shown in a thinking pose, with its hand resting on its chin. The robot has a sleek, modern design with visible mechanical joints and a glowing red stripe on its chest. The background is a soft, blue gradient with light rays.

“Carving The Future”

Carlos Alejandro Belloni
27th ICMIF/Americas Annual Conference
August 21 - 23, 2019 | Park Hyatt Hotel
Mendoza, Argentina

How
the future
looks
like?



and **which**
are the
Megatrends
shaping it?

LOS CIENTÍFICOS PREVEN GRANDES
CATASTROFES PARA LOS PRÓXIMOS 15 AÑOS :
MÁS HURACANES, TSUNAMIS, TERREMOTOS,
TERRORISMO...

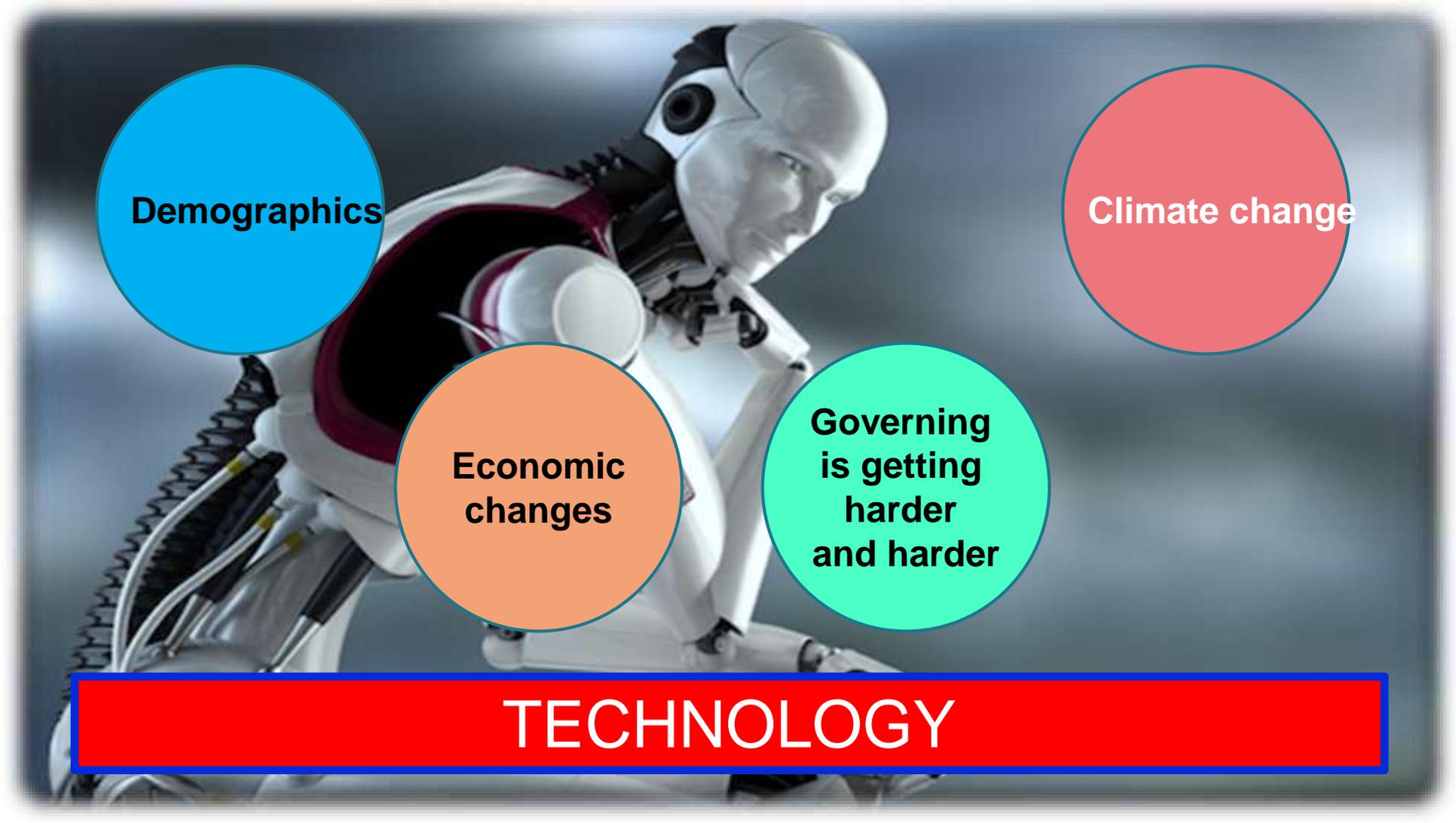


CALENTAMIENTO GLOBAL, CONTAMINACIÓN,
AUMENTO DEL NIVEL DEL MAR , INUNDACIONES,
FALTA DE AGUA POTABLE, HAMBRE, PESTES,
POSIBLE CHOQUE DE UN COMETA...



GORDI... LLEGÓ LA CUOTA DEL COLE
Y DE LA MEDICINA PREPAGA...





Demographics

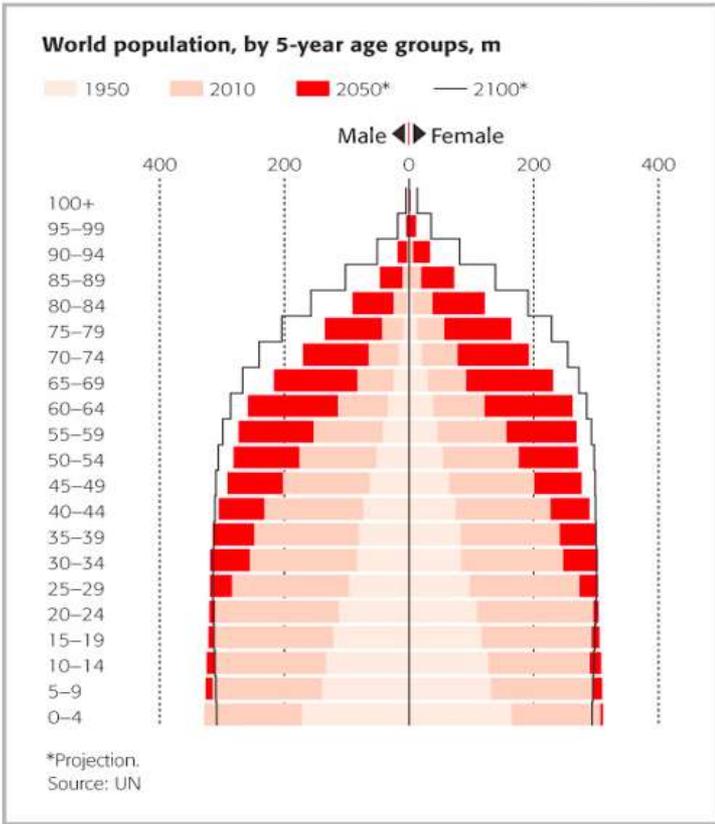
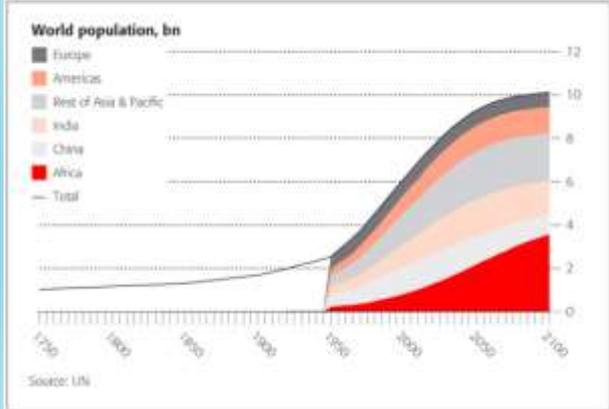
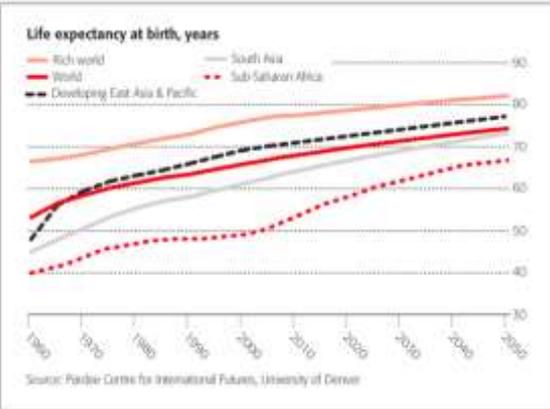
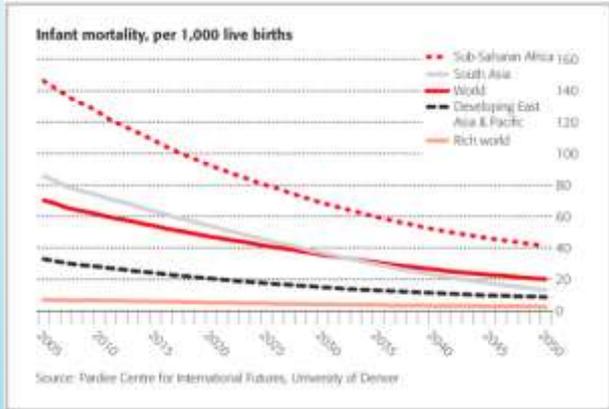
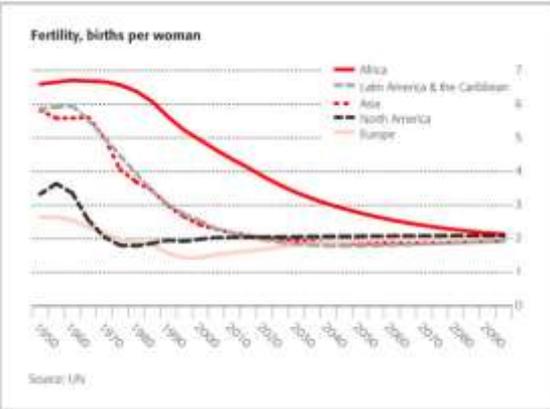
Climate change

**Economic
changes**

**Governing
is getting
harder
and harder**

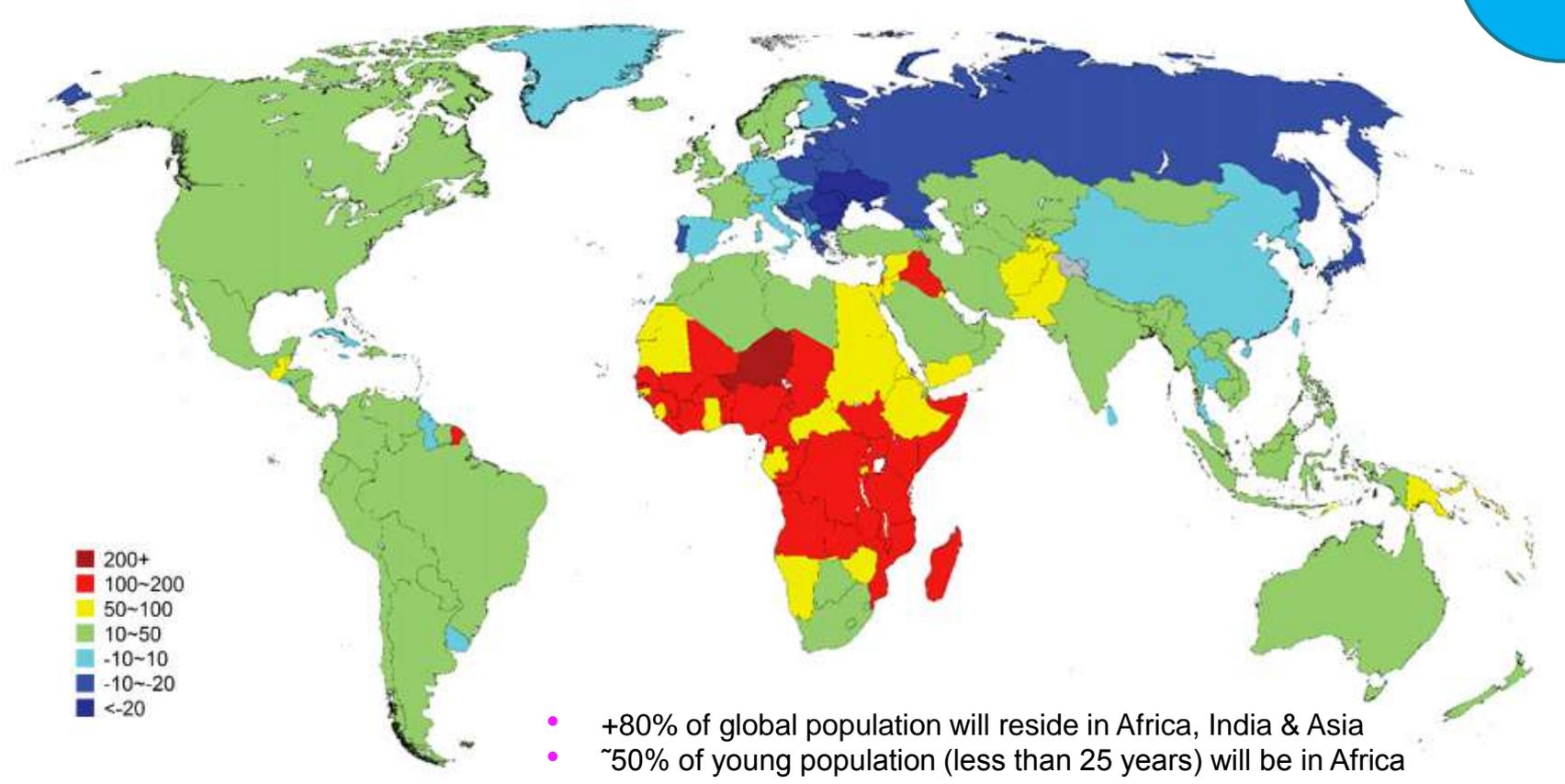
TECHNOLOGY

Some important demographic trends



Percentage of population change between 2015 and 2050

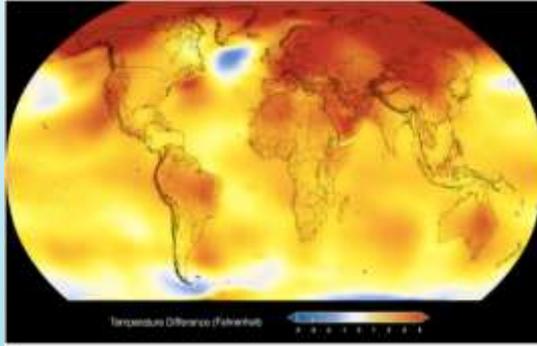
Demographics



Climate
Change

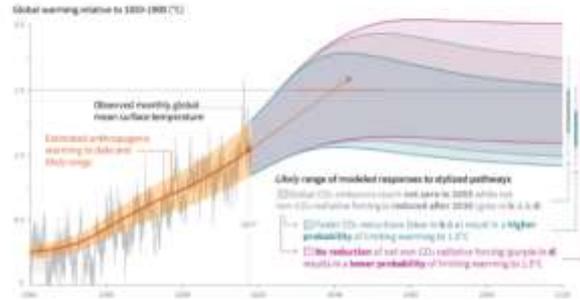


Some worrying facts...

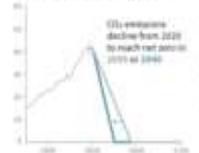


Cumulative emissions of CO₂ and future non-CO₂ radiative forcing determine the probability of limiting warming to 1.5°C

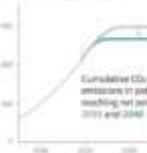
a) Observed global temperature change and modeled responses to stylized anthropogenic emission and forcing pathways



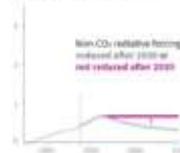
b) Stylized net global CO₂ emissions pathways (billion tonnes CO₂ per year 1000/y)



c) Cumulative net CO₂ emissions (billion tonnes CO₂ (1000))

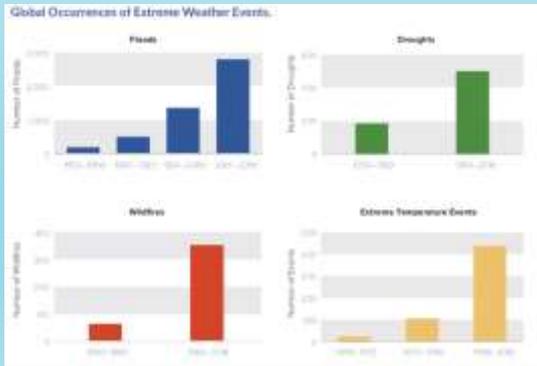
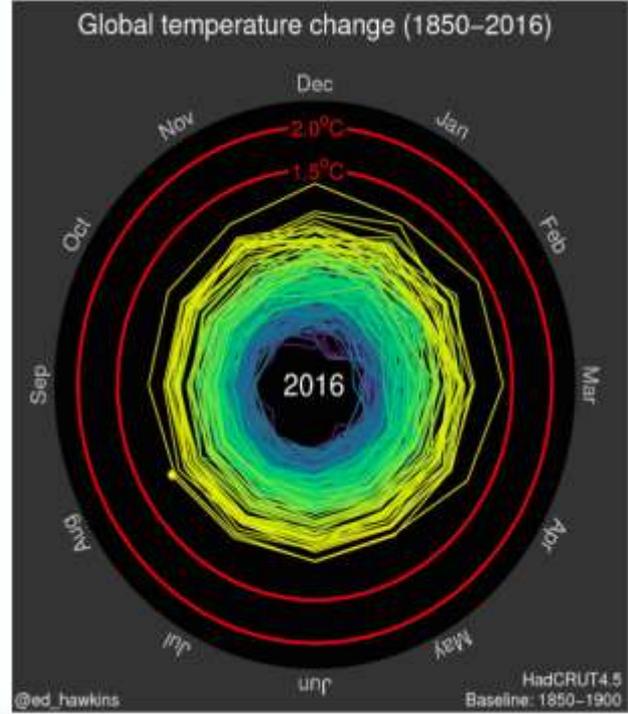


d) Non-CO₂ radiative forcing pathways (Watts per square metre (W/m²))

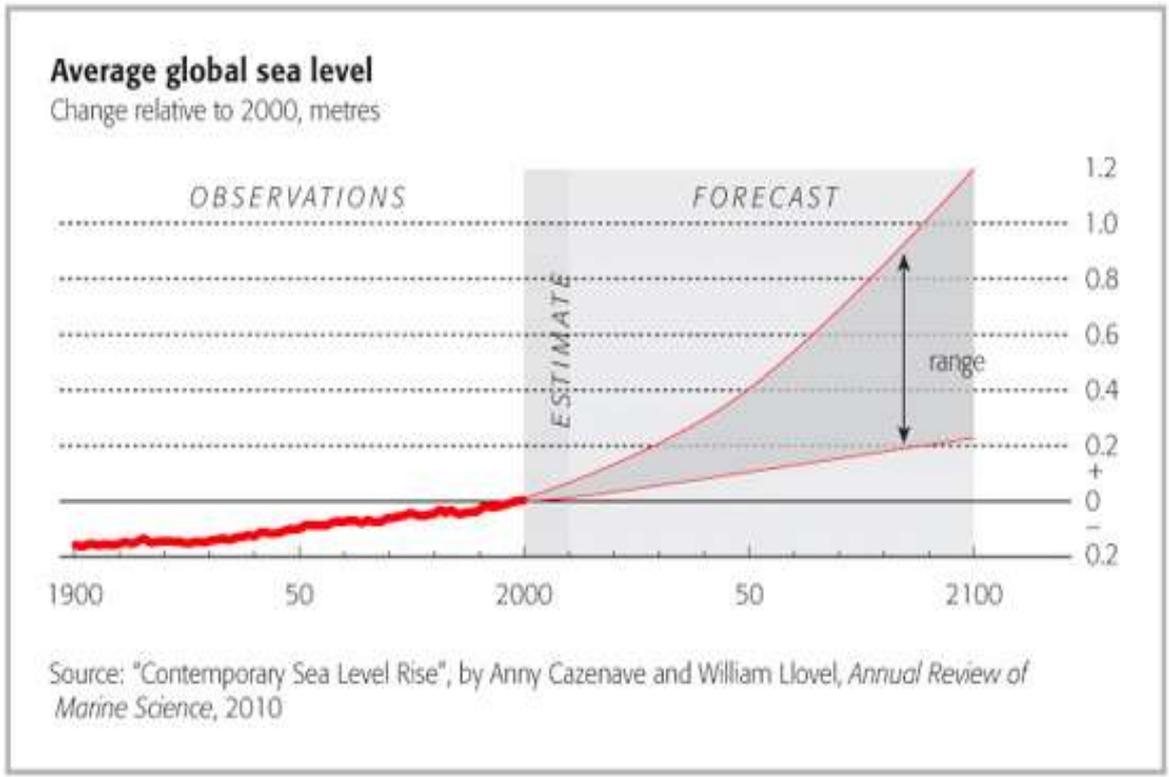
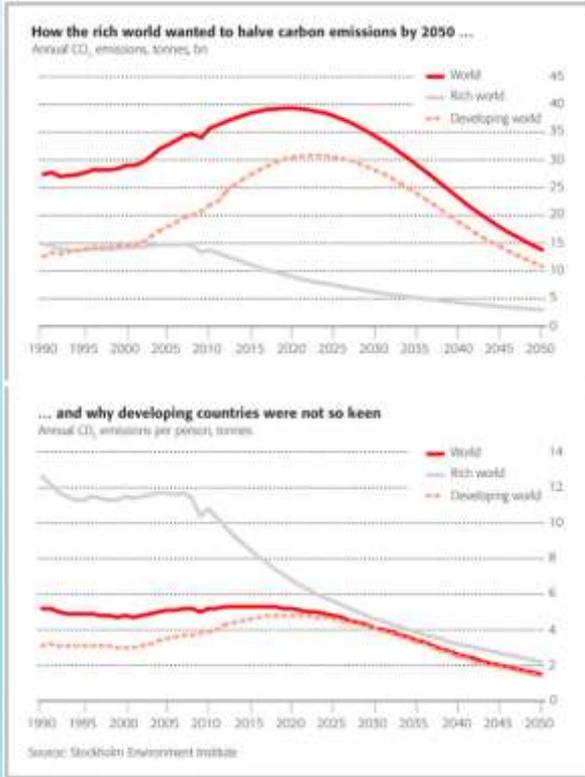


Note: Immediate CO₂ emission reductions limit cumulative CO₂ emissions shown in panel (c).

Maximum temperature rise is determined by cumulative net CO₂ emissions and net non-CO₂ radiative forcing due to methane, nitrous oxide, aerosols and other anthropogenic forcing agents.

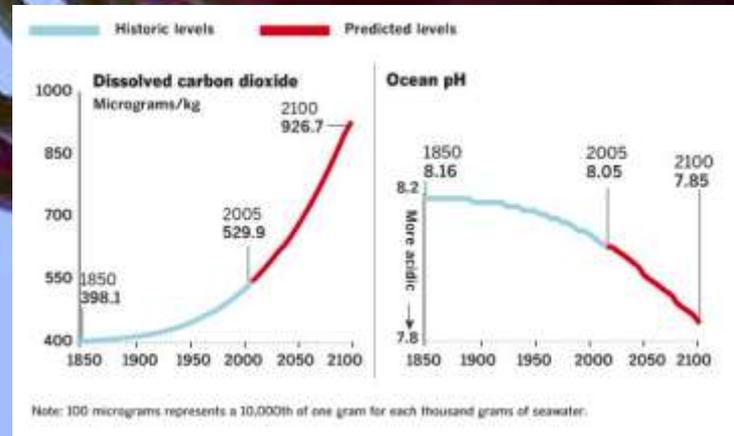


Some worrying facts...



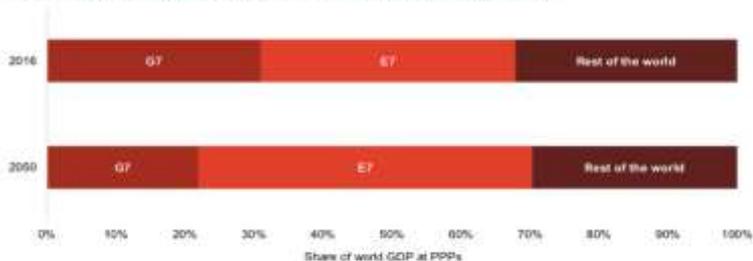
Some worrying facts...

Climate Change



Important shifts in economic growth & power...

Figure 1: Projected change in shares of world GDP from 2016 to 2050



Sources: IMF for 2016 estimate, PwC projections for 2050

Global economic power will shift to the E7 economies

In...
1995 E7 were **half** the size of **G7**

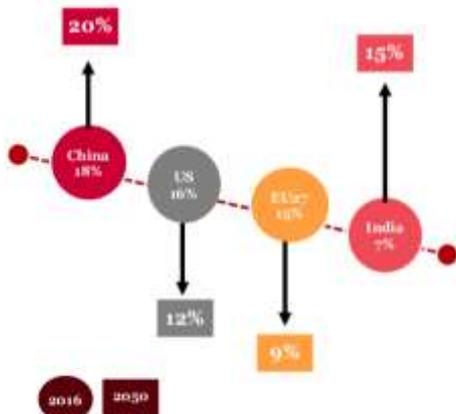
By...
2015 E7 were around the **same** size as **G7**

And in just 25 years...
2040 E7 could be **double** the size of **G7**

G7: US, UK, France, Germany, Japan, Canada and Italy
 E7: China, India, Indonesia, Brazil, Russia, Mexico and Turkey

The US and Europe will steadily lose ground to China and India

Share of world GDP (PPP's) from 2016 to 2050...



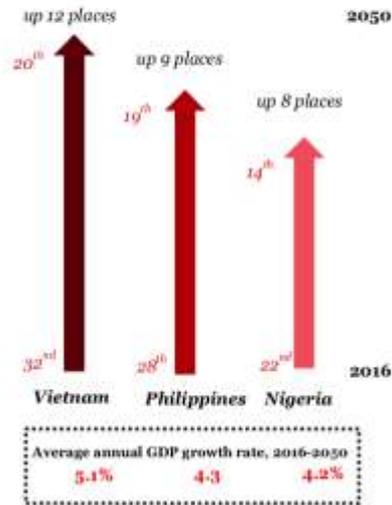
Sources: IMF for 2016 estimates, PwC analysis for projections to 2050

Emerging markets will dominate the world's top 10 economies in 2050 (GDP at PPPs)

	2016	2050	
China	1	1	China
US	2	2	India
India	3	3	US
Japan	4	4	Indonesia
Germany	5	5	Brazil
Russia	6	6	Russia
Brazil	7	7	Mexico
Indonesia	8	8	Japan
UK	9	9	Germany
France	10	10	UK

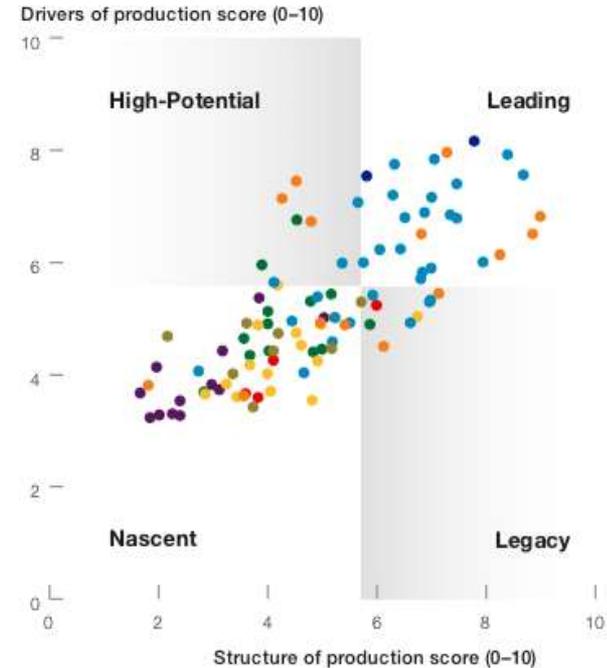
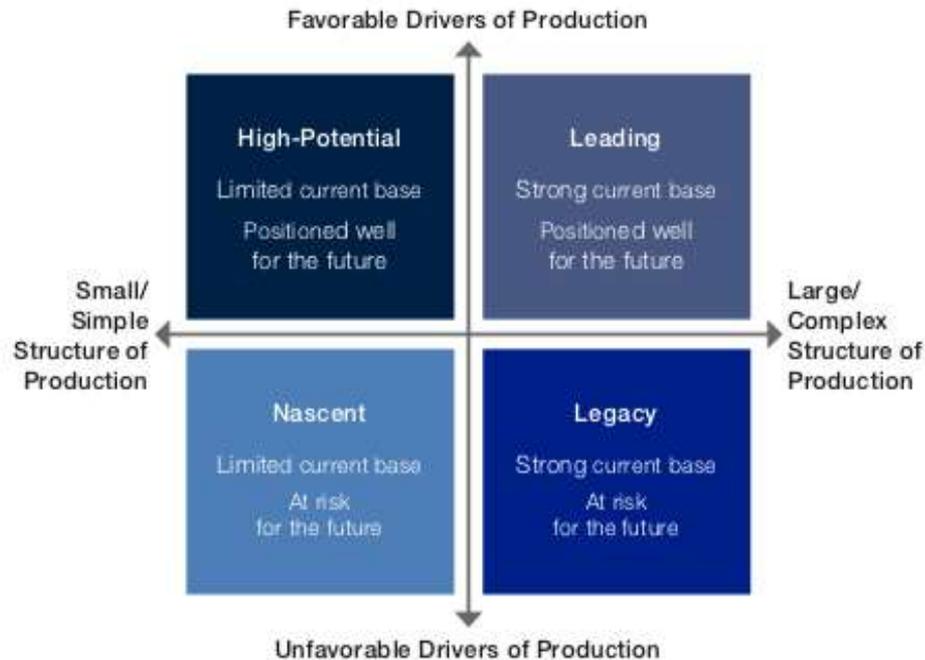
Legend: E7 economies (yellow), G7 economies (grey)

Vietnam, the Philippines and Nigeria could make the greatest moves up the rankings by 2050

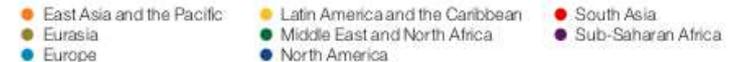


How “easy” is to adapt to the *new* economy?

Economic
Changes



Note: Average performance of the top 75 countries (weighted average driver score, weighted average structure score) is at the intersection of the four quadrants to create the archetype borders.



International anti-capitalist demonstration against G20 summit

G20
WELCOME
TO
HELL

Thursday 6 July 2017
4 p.m., St. Pauli Fischmarkt, Hamburg

When the heads of government of the world's 20 most powerful countries are arriving on 6 July and the assembled world media are waiting for news from the crisis zone around Hamburg's exhibition halls, we'll be already in the streets.

We are mobilizing internationally to turn Hamburg into a location and an exclamation mark of resistance against old and new authorities of capitalism.



Governing
is getting
harder

BREXIT

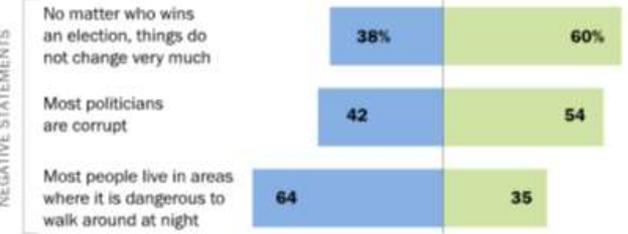
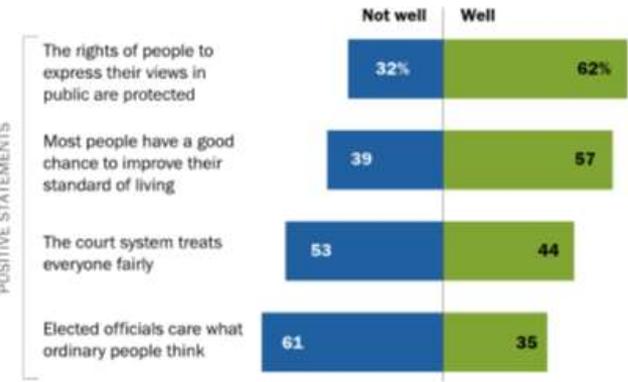
Governing is getting harder

Divided views around the world about how key aspects of democracy are working

% who say they are ___ with the way democracy is working in their country



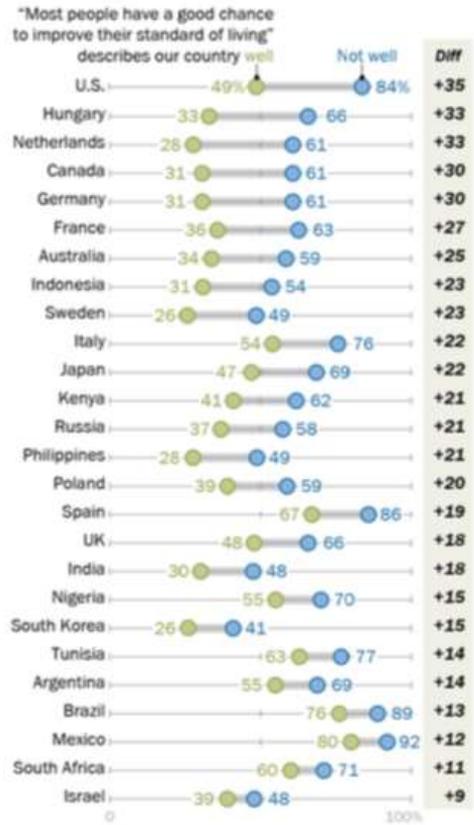
% who say the statement ___ describes their country ...



Note: Percentages are medians based on 27 countries. Don't know responses not shown. Source: Spring 2018 Global Attitudes Survey, Q4 & Q34a-g.

Pessimism about improving standard of living linked to dissatisfaction with democracy

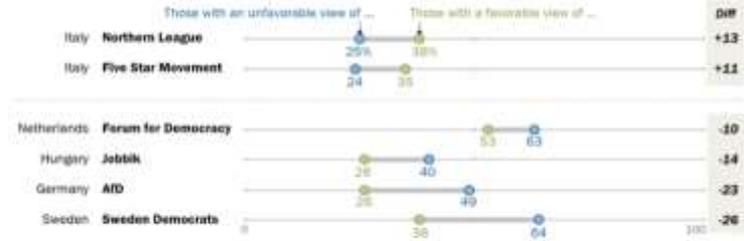
% who say they are dissatisfied with the way democracy is working in their country



Note: All differences shown are statistically significant. Source: Spring 2018 Global Attitudes Survey, Q4.

People with positive views of populist parties tend to say politicians are out of touch with ordinary people

% who say "elected officials care what ordinary people think" describes their country well



Note: All differences shown are statistically significant. Political party favorability was highest for "Northern League" in Italy (now called Lega). Source: Spring 2018 Global Attitudes Survey, Q14a.

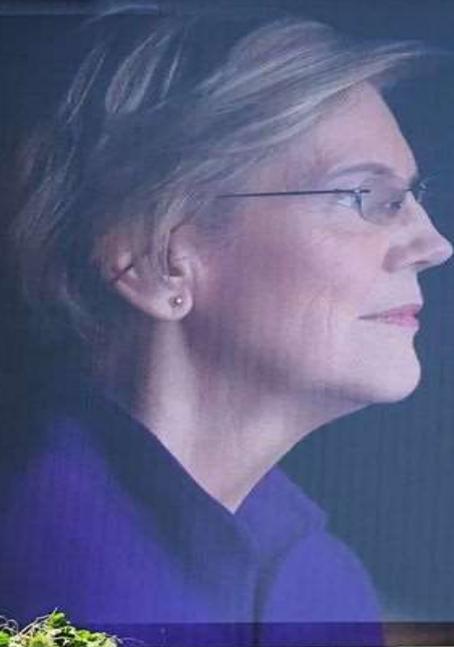
- @ inequity
- @ un/sub-employment
- @ gig economy
- @ anticapitalism
- @ immigration

LA / OC / SF

UPD... CUP.COM

#503688

Governing
is getting
harder



WARREN

BREAK UP BIG TECH

TEXT TECH TO 24477
TO JOIN OUR FIGHT

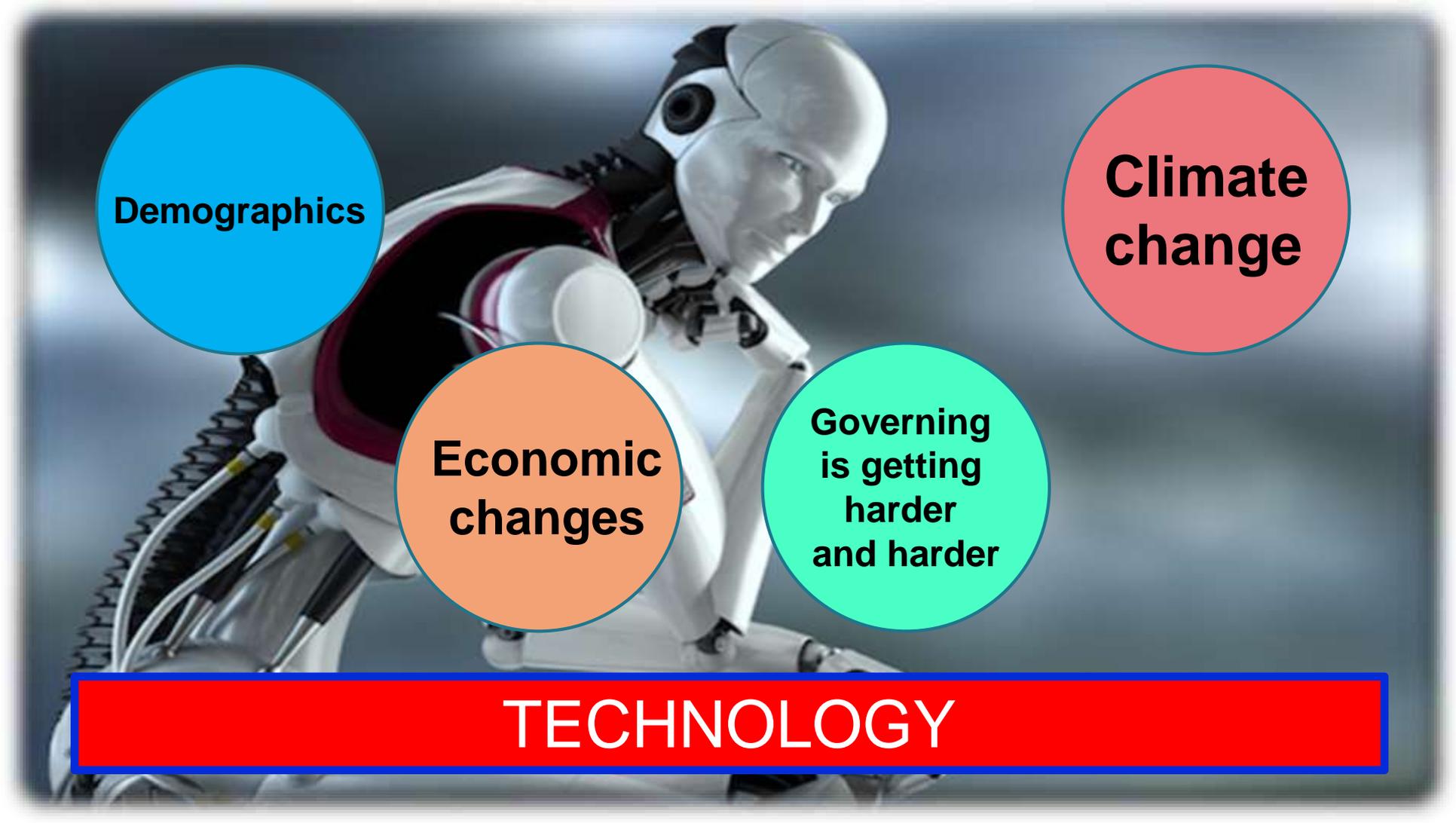
BY PROVIDING YOUR CELL PHONE NUMBER YOU CONSENT TO RECEIVE PERIODIC CAMPAIGN UPDATES FROM WARREN FOR PRESIDENT.
TEXT HELP FOR HELP; STOP TO END. RATE & DATA RATES MAY APPLY. [HTTPS://WWW.ELIZABETHWARREN.COM/PRIVACY-POLICY](https://www.elizabethwarren.com/privacy-policy).

 VOTE DEMOCRATIC

PAID FOR BY WARREN FOR PRESIDENT

WARREN MADE
PLAN
A
CONSENT

1446 x 25



Demographics

**Climate
change**

**Economic
changes**

**Governing
is getting
harder
and harder**

TECHNOLOGY

Fourth Industrial Revolution

4IR

What is the Fourth Industrial Revolution?



“The 4IR is characterized by a *fusion* of technologies that is *blurring* the lines between the *physical*, *digital* and *biological* spheres”.

“The Fourth Industrial Revolution”.
Klaus Schwab. World Economic
Forum.

It is different from previous revolutions because its:

velocity,
scope and
depth of changes.



Original Image

Image Reconstructed From Bacteria

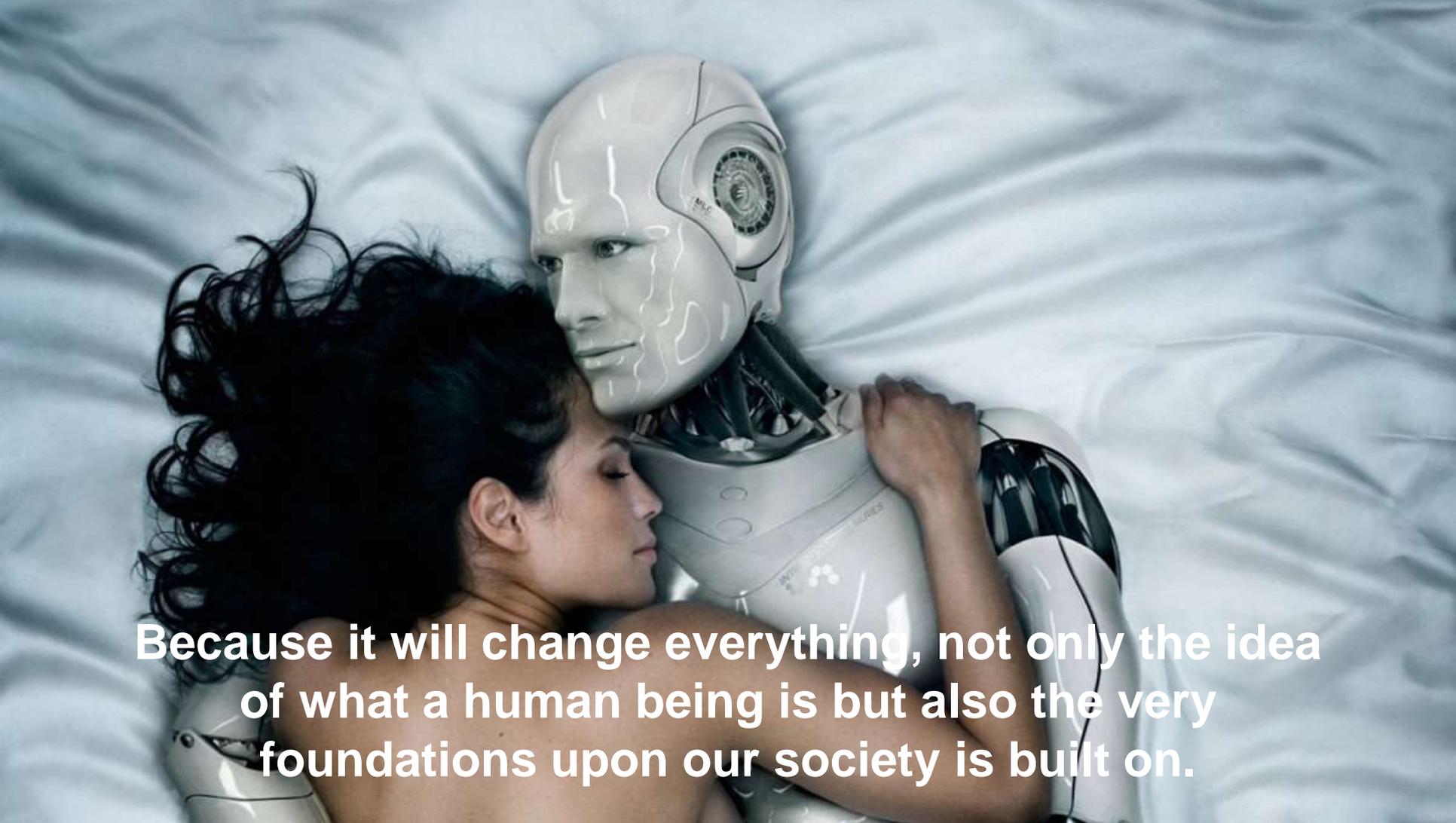
These overlapping technologies will define our lives in the decades to come.

- **Genetics** revolution will allow us to *reprogram our own biology*.
- **Nanotechnology** will allow us to *manipulate matter at the molecular and atomic scale*.
- **AI** will allow us to create a *greater than human non-biological intelligence*.





Why
should it
matter?



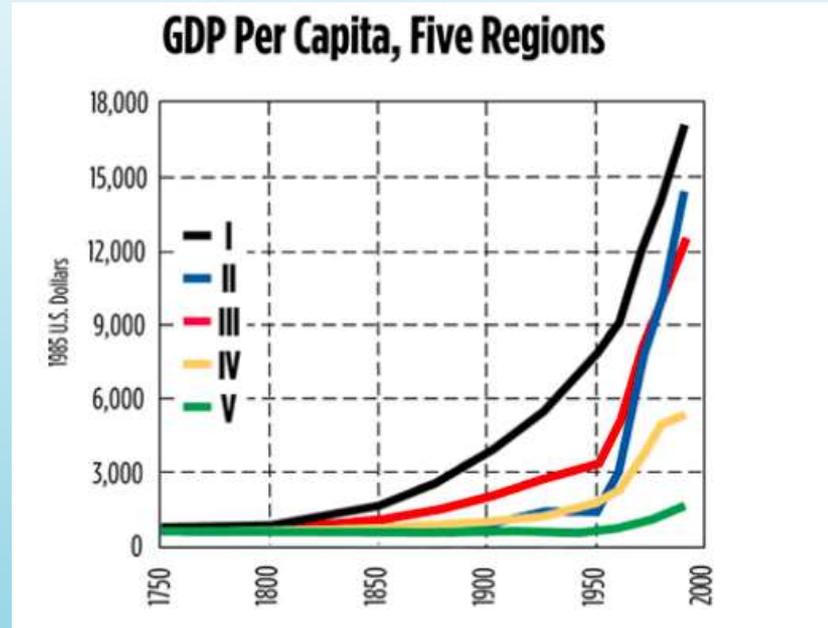
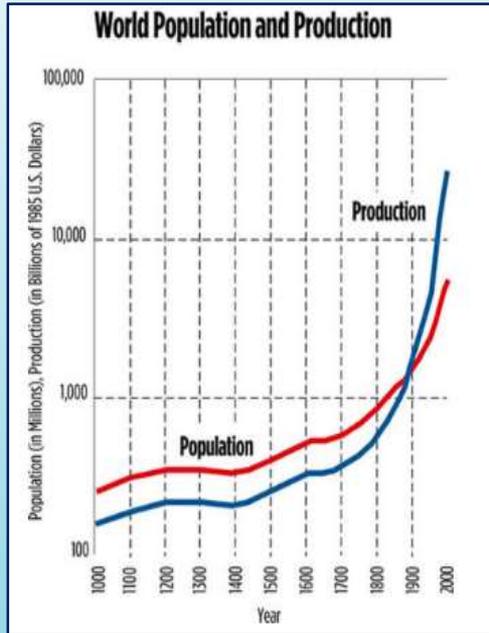
Because it will change everything, not only the idea of what a human being is but also the very foundations upon our society is built on.

**Where
are
we??**

**How
do we
get
here?**







Source: The Industrial Revolution: Past and Future - 2003 Annual Report Essay
 Robert E. Lucas, Jr. Published May 1, 2004.
 Federal Reserve Bank of Minneapolis.
<https://www.minneapolisfed.org/publications/the-region/the-industrial-revolution-past-and-future>

10%



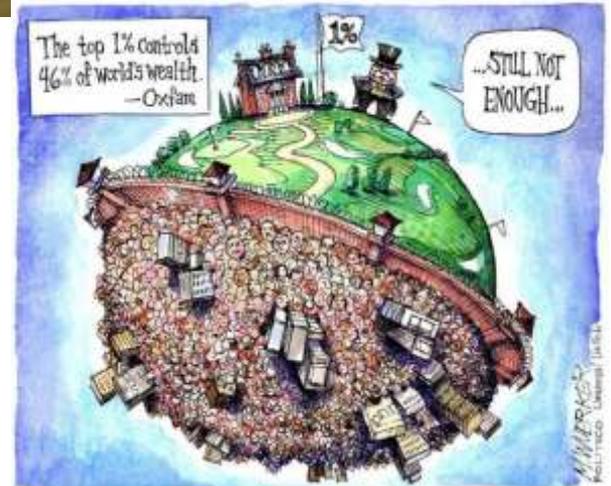
15%



45%



66 million people were forced to leave their homes.
23 million persons are refugees.



WARNING



**CHALLENGES
AHEAD**

Digital is the main reason just over half of the **companies** on the Fortune 500 have **disappeared** since the year 2000

Pierre Nanterme
CEO of Accenture





WE'LL MISS YOU,
FIFTH AVENUE!

Lord & Taylor

PLEASE VISIT US AT LORDANDTAYLOR.COM
to find your closest store

STORE HOURS

MONDAY	10 am - 7 pm
TUESDAY	10 am - 8 pm
WEDNESDAY	10 am - 7 pm
THURSDAY	10 am - 7 pm
FRIDAY	10 am - 9 pm
SATURDAY	10 am - 8 pm
SUNDAY	11 am - 6 pm

Do you remember Nokia or BlackBerry devices?...

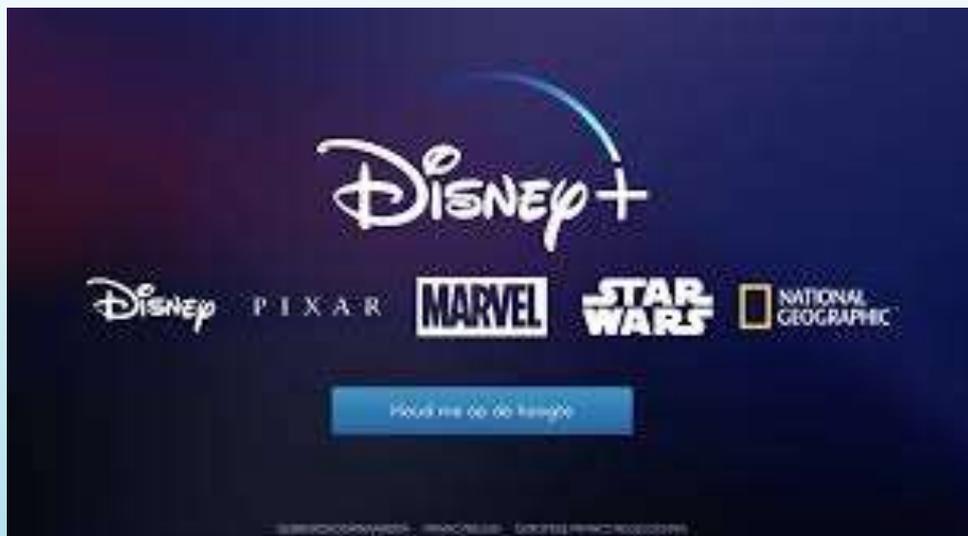
Their main failure was failing recognizing the importance of owning an eco-system...



Did you know about Walt Disney and Pixar history? ...



NETFLIX

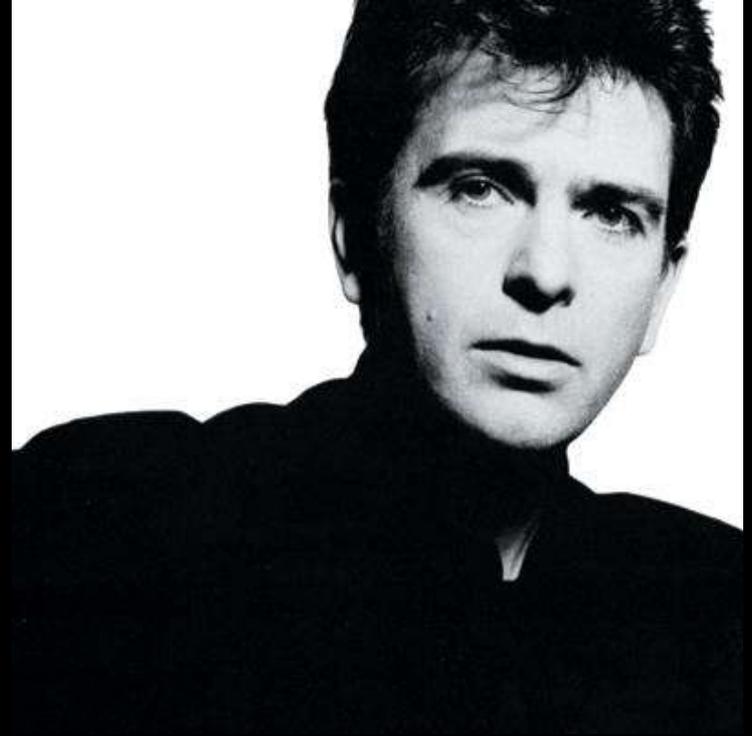


Disney+ | ESPN+ | hulu



“The only constant
I am sure of
Is this accelerating
rate of change” ...

“Downside Up, Upside Down”
Peter Gabriel



THE LARGEST COMPANIES BY MARKET CAP

The oil barons have been replaced by the whiz kids of Silicon Valley

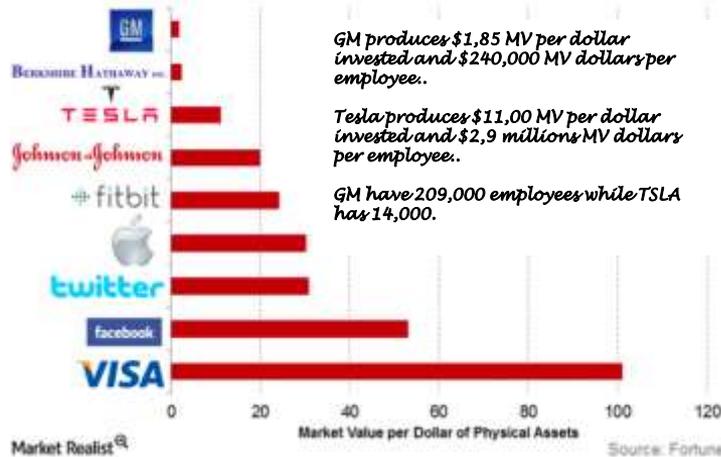


Top 5 Publicly Traded Companies (by Market Cap)

■ Tech ■ Other



More Companies Are Creating High Value With Scant Hard Assets



GM produces \$1,85 MV per dollar invested and \$240,000 MV dollars per employee.

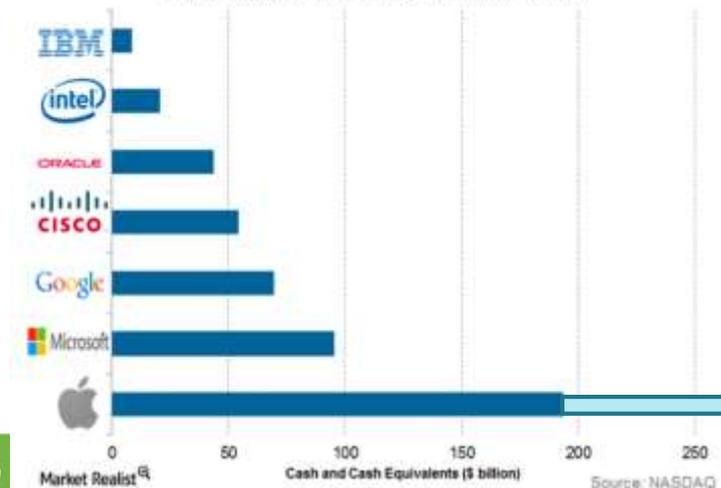
Tesla produces \$11,00 MV per dollar invested and \$2,9 millions MV dollars per employee.

GM have 209,000 employees while TESLA has 14,000.

Market Realist

Source: Fortune

Tech Companies Have Large Stockpiles of Cash



Market Realist

Source: NASDAQ



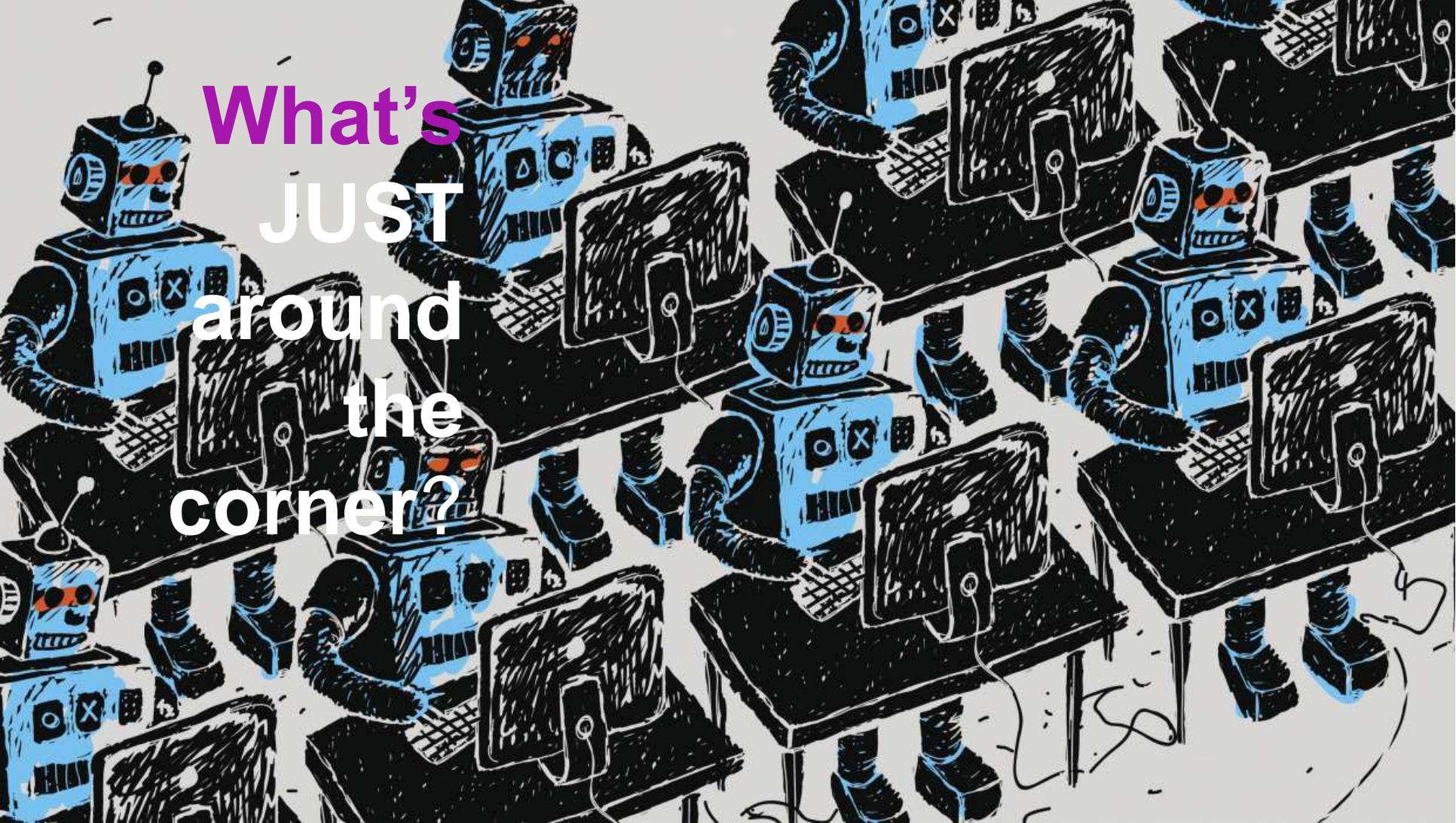
A 20 años de su creación, la firma se convirtió en la más valiosa de la Argentina. Luego de presentar su balance del primer semestre del año, que informó una facturación de US\$1019 millones en el período, las acciones se dispararon un 11% en Wall Street, donde cotiza desde 2007. De acuerdo con este indicador, la compañía vale hoy más de US\$36.160 millones, seis veces más que YPF, la mayor petrolera argentina (US\$6147 millones).







What's
JUST
around
the
corner?



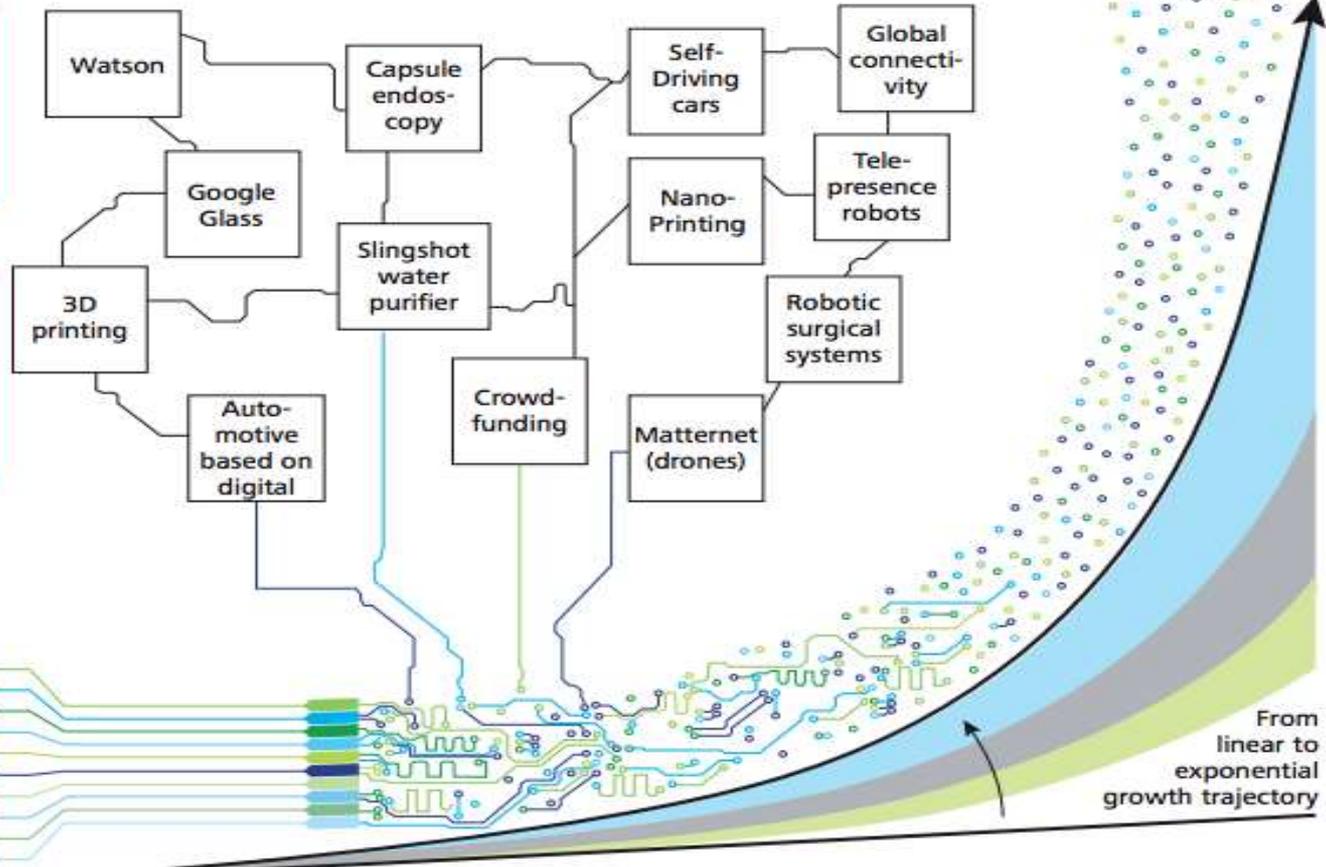
Speed of technological change

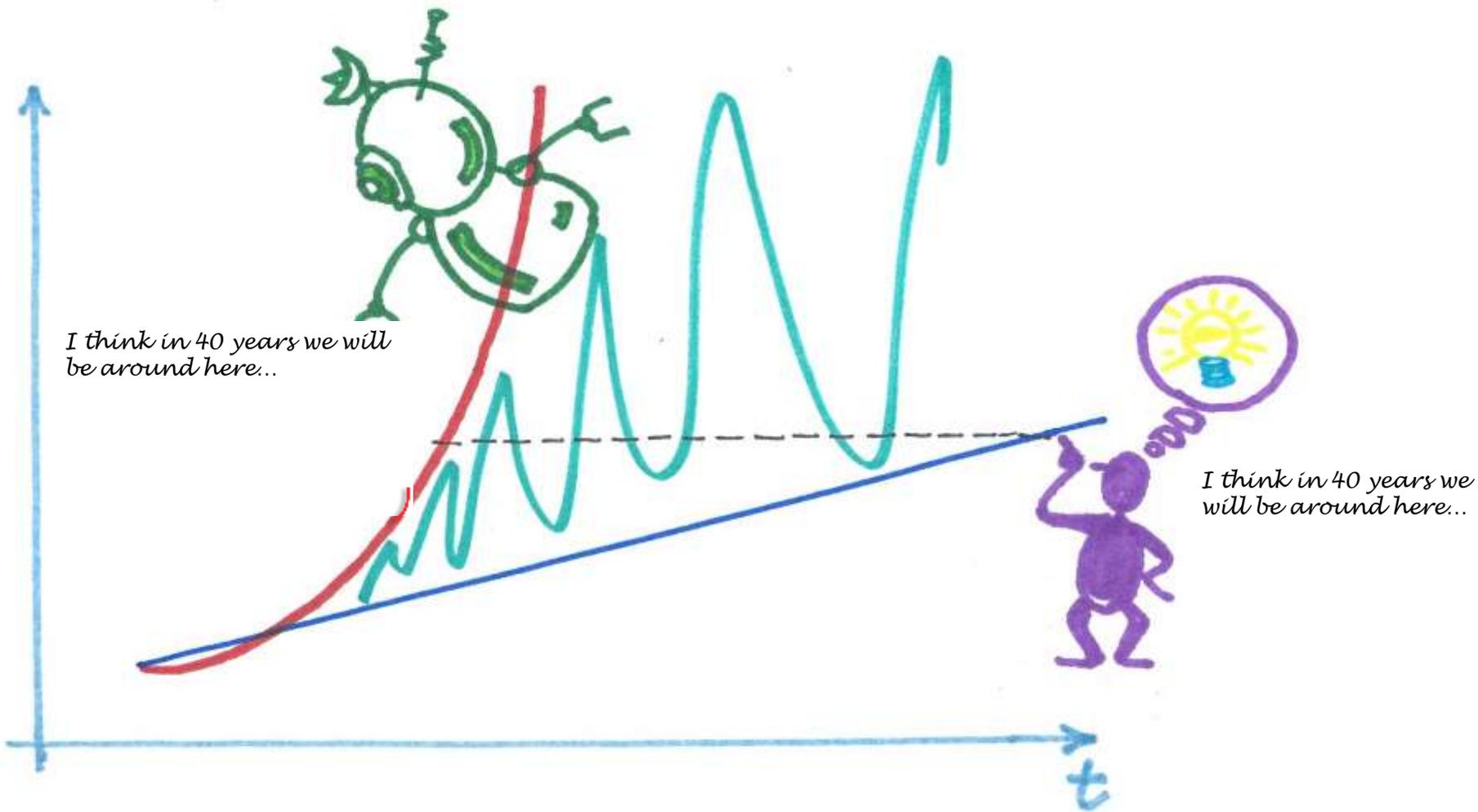
Technological development
Moore's Law: the power of chips, bandwidth and computers doubles appr. every 18 months

The human factor
Technological development feeds and enables various trends in society: Democratisation, social connection, DIY, Decentralisation

Exponential technologies

Biotech
Neurotech
Nanotech
New energy & sustainability
ICT & mobile technology
Sensing
3D printing
Artificial intelligence
Robotics
Drones





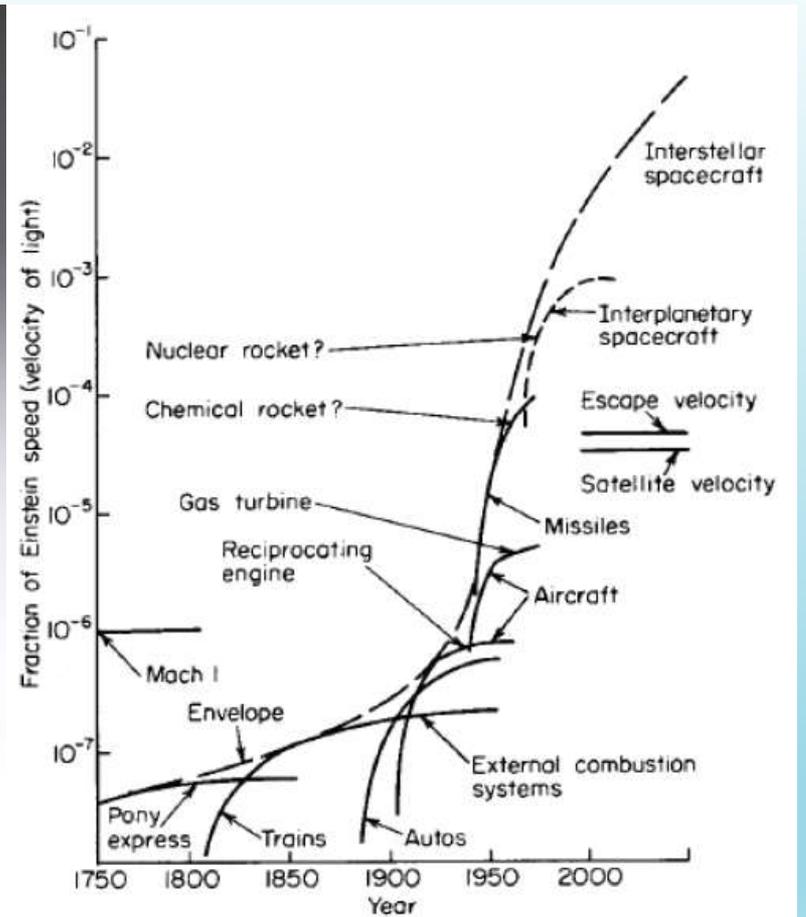


Figure 4.2. Speed trend. Source [7].

LightSail 2 sends its first signals back to Earth

The crowd-funded solar spacecraft is orbiting on its own.



Exponential technologies



1



2



3



4



5



6



7



8

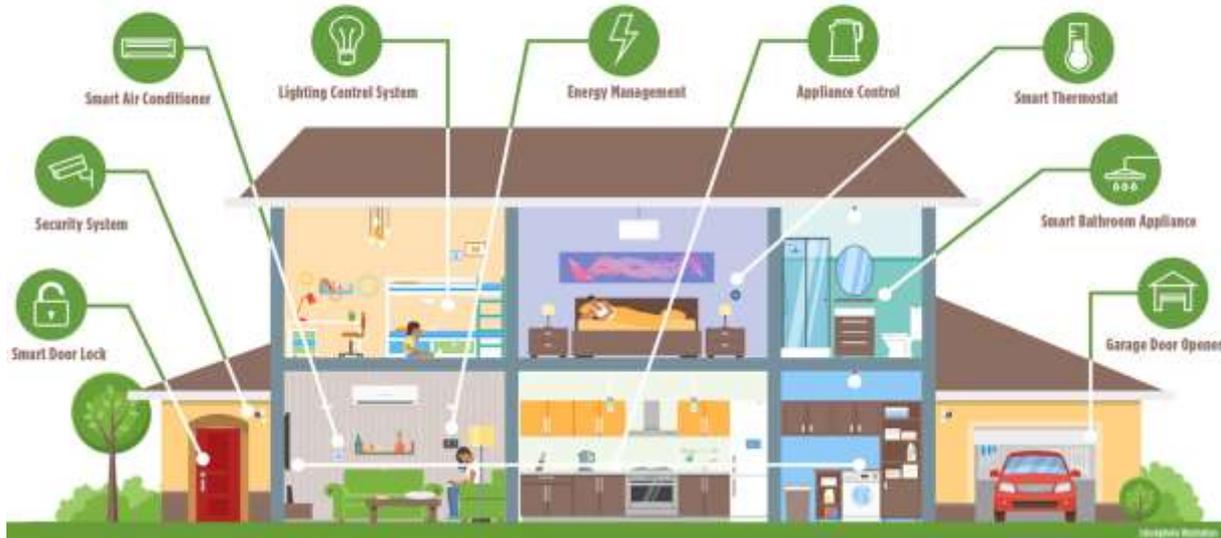
LIGHTS INFO TECH WWW SERVICES BIG CON SMART CONSUMER DEMAND MOBILE DEVICE
MULTIMEDIA NETWORK DEVICES THE INTERNET OF THINGS
PROJECTS WEB APPS EQUIPMENT
BRANDS SMART MACHINES OBJECTS VISION ENGINEERING RESEARCH
SOLUTIONS WEB SERVICES PROJECTS BIG DATA SERVICE STRATEGY WORLDWIDE AUTOMATION
EVERYTHING PROJECTS MOBILE SERVICE CODING M2M TOOLS
AUTOMOBILE SOLUTIONS



Homes and factories will start to change with the IoT... ...and so it will change (P&C) insurance industry

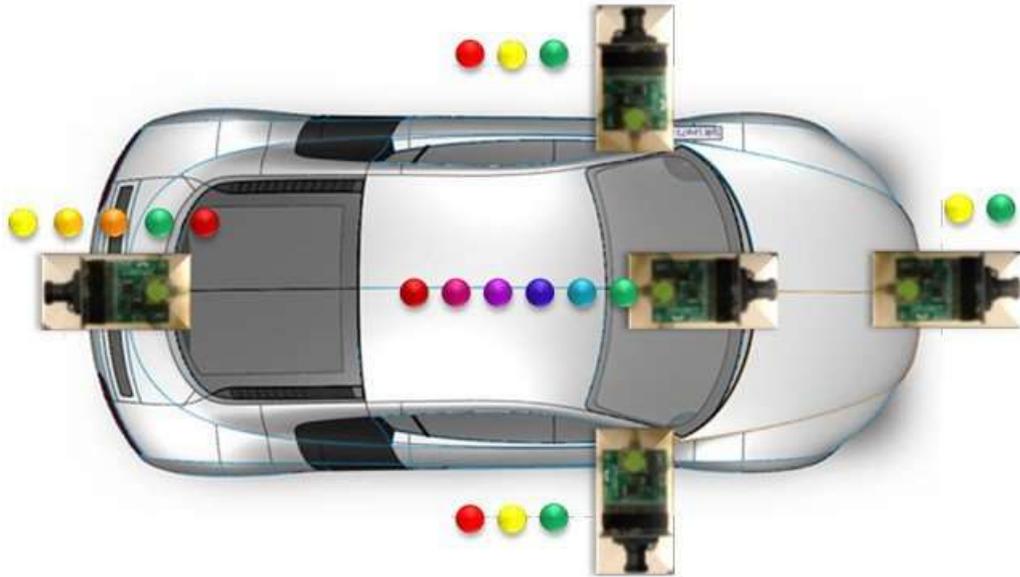
HOME, SMART HOME

Cool gadgets, practicality drive trend in residential lifestyle technology



Smart cars are already changing...

...and so it will change (cars) insurance industry



- 3D Surround View
- Rear View Camera
- Rear Cross Traffic
- Blind Spot Detection
- Lane Departure Warning
- Intelligent Headlamp Control
- Traffic Sign Recognition
- Forward Collision Warning
- Intelligent Speed Control
- Pedestrian Detection

And everything else as well of course!



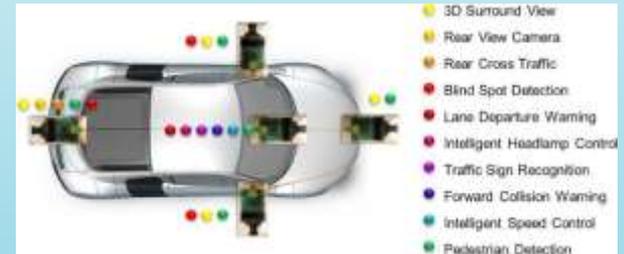
- ❖ IoT is an "Adjacent Frontier" mainly because of:
 - ❖ Technological entry costs are no longer barriers
 - ❖ Regulators are FAR BEHIND the curve on this matters (as in so many others...)

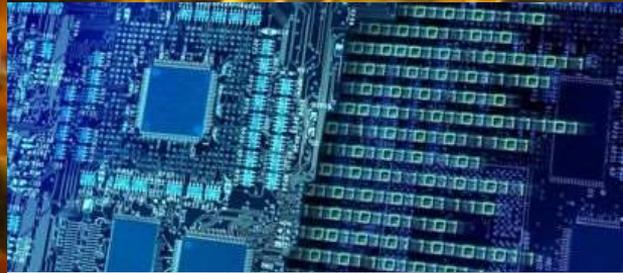
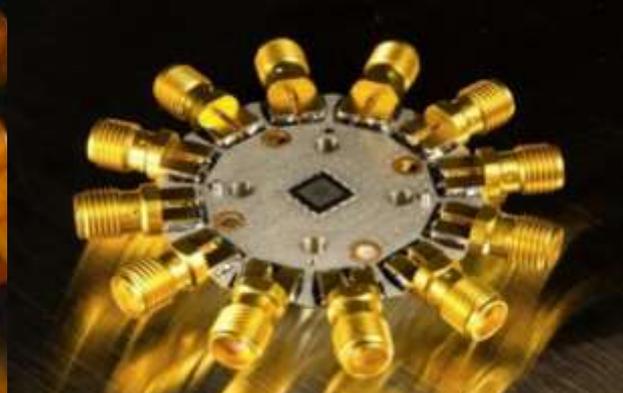
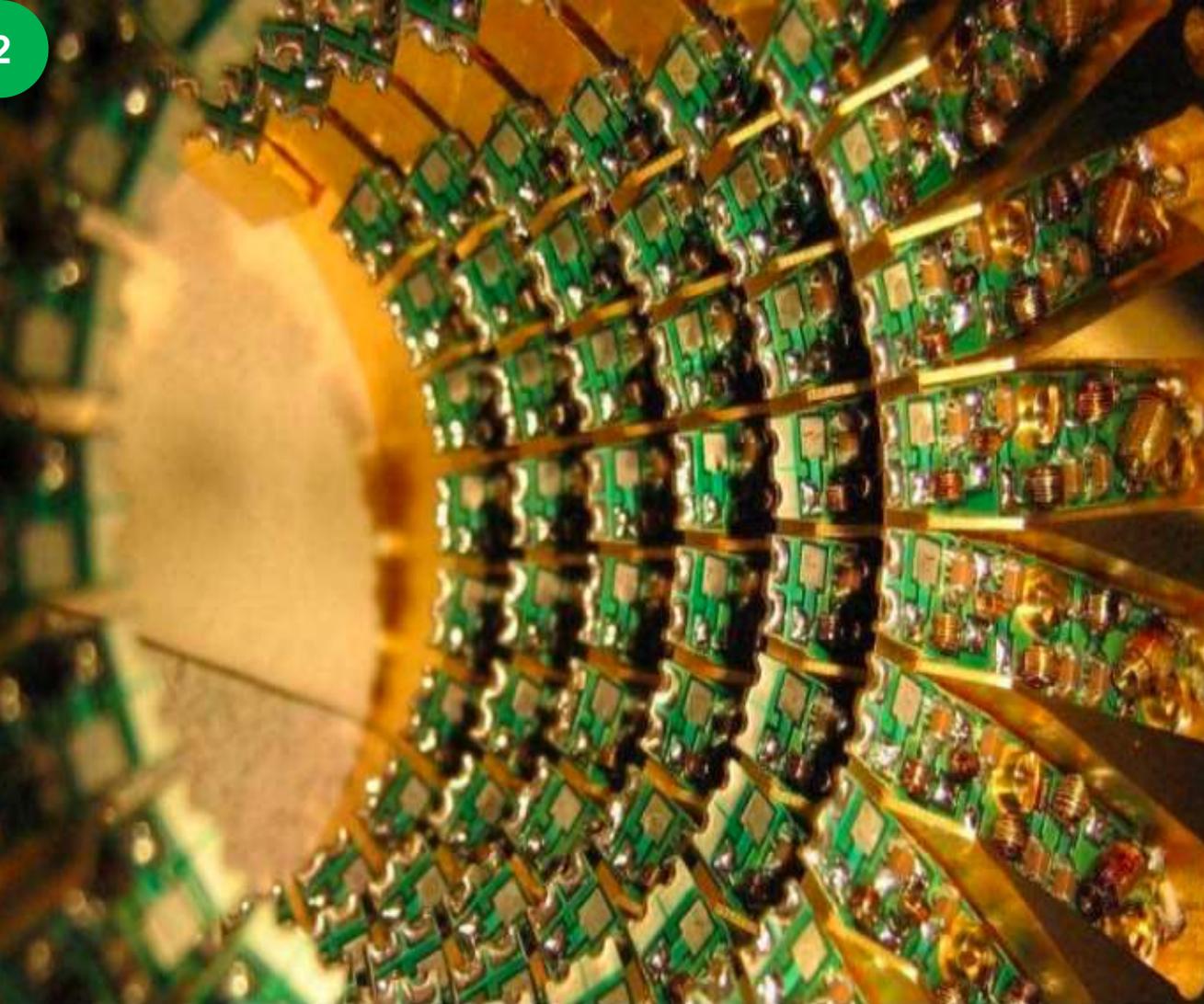
Smart cars are changing...

...and so it will change insurance industry

The product is **moving** from **post-event forensics** to **pre-event prevention**.

In the future the product will include **less and less** of the loss compensation element and **more services** designed to avoid/mitigate losses.



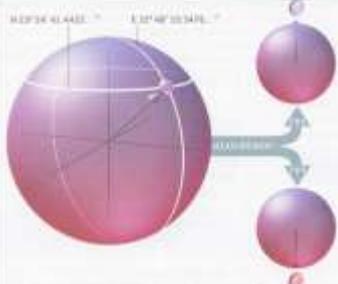


QUBITS EXPLAINED

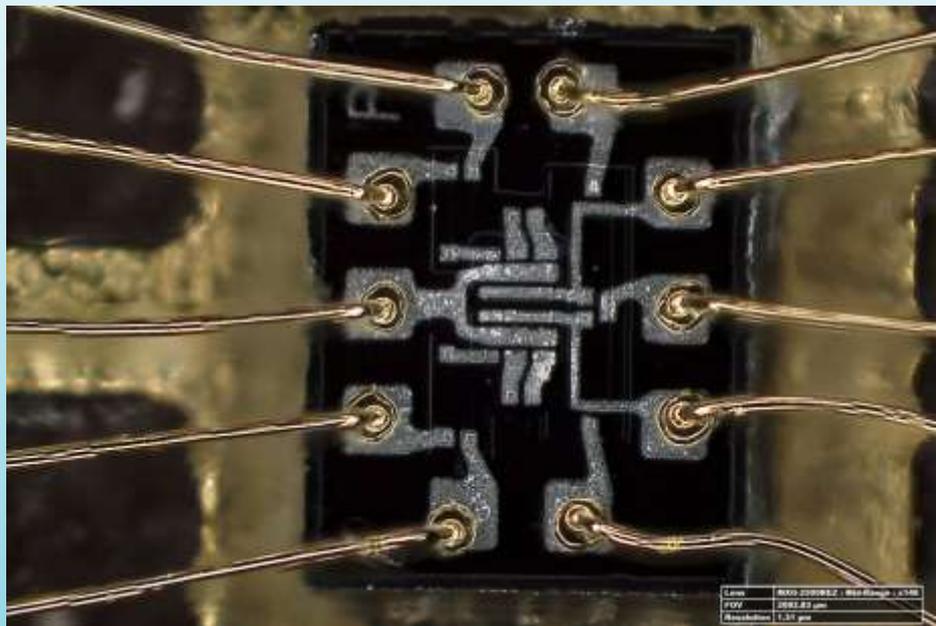
A bit can have one of two states: 0 or 1. A bit can be represented by a transistor switch set to 'off' or 'on' or abstractly by an arrow pointing up or down.



A qubit, the quantum version of a bit, may have more possible states. The states can be represented by an arrow pointing to a location on a sphere. The north pole is equivalent to 1, the south pole to 0. The other locations are quantum superpositions of 0 and 1.



A QUBIT NEEDS TIME TO CONTAIN AN infinite amount of information because its combination can include an infinite sequence of digits. But the information in a qubit must be extracted by a measurement. When the qubit is measured, quantum mechanics requires that the result is always an ordinary bit - a 0 or a 1. The probability of each outcome depends on the qubit's "latitude".



Physicists reverse time using quantum computer

by Moscow Institute of Physics and Technology





3











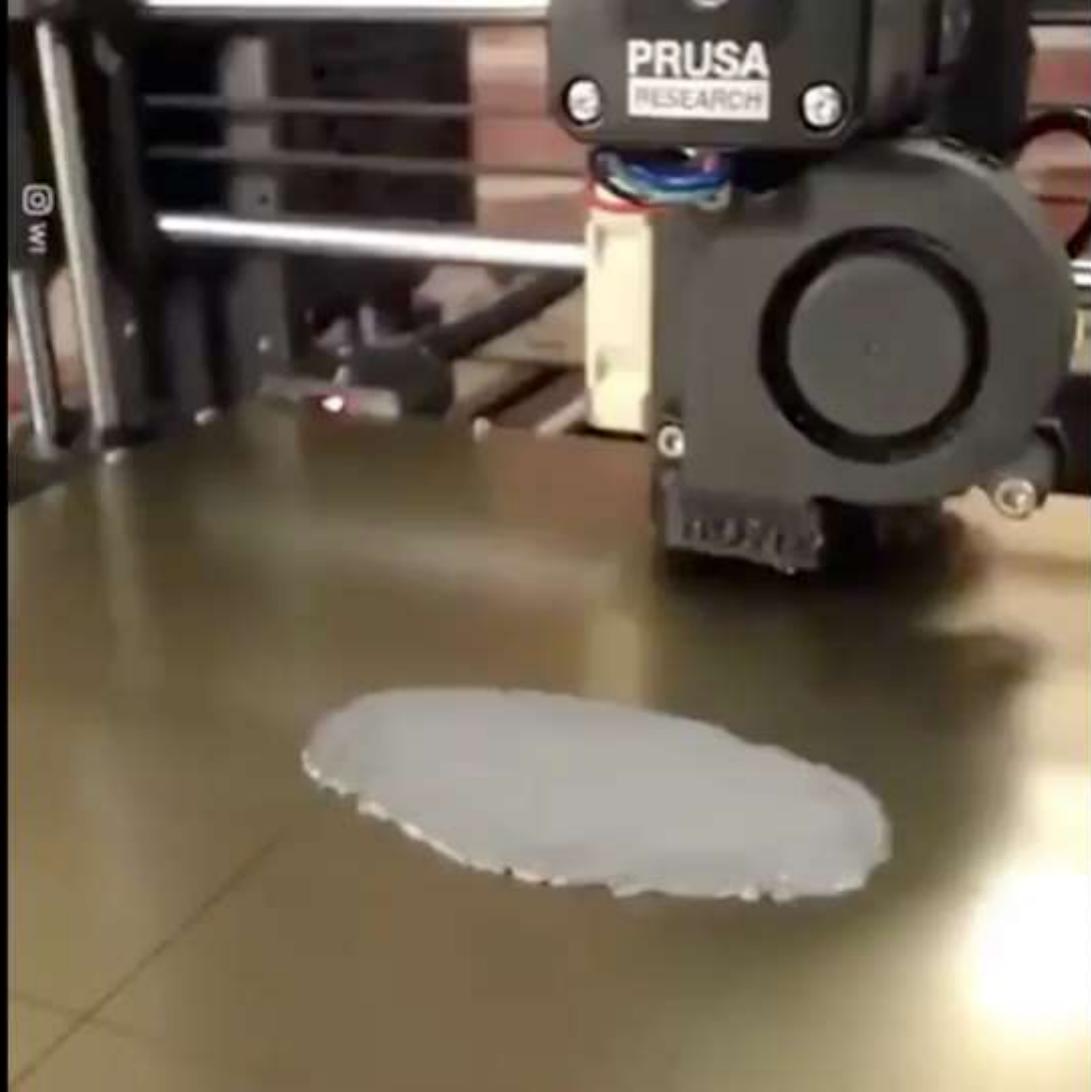
Sogou 搜狗

AI 合成主播

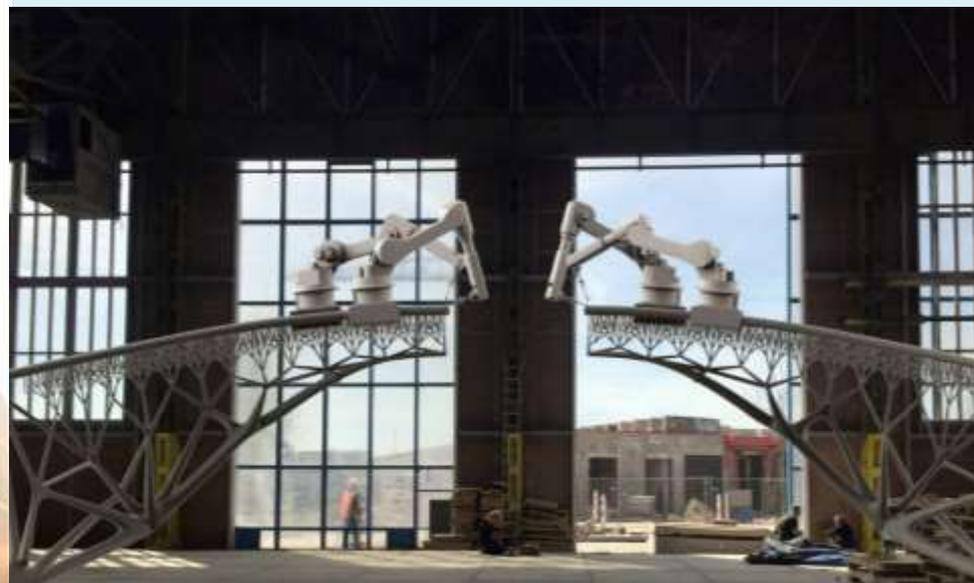








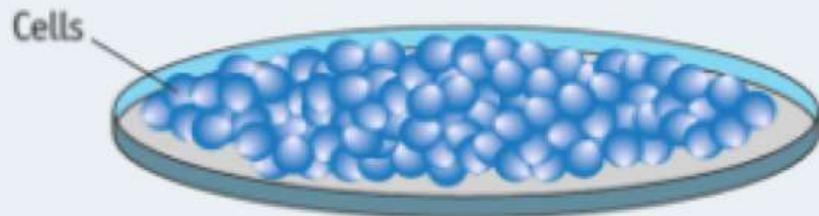




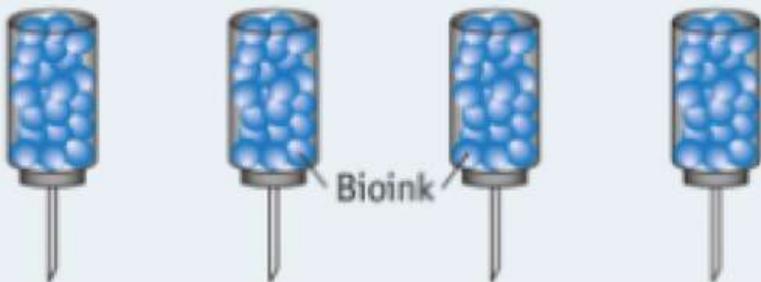




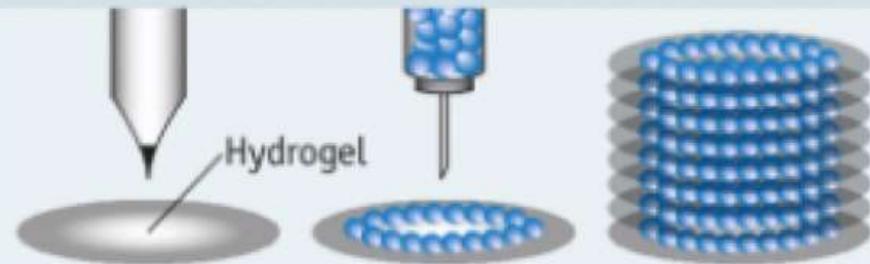
¿Cómo funciona una bio-impresora 3D?



1. Se dejan reproducir, en un ambiente propicio, células madre o células tomadas del organismo de una persona. Estas células serán usadas para producir la "bio-tinta".



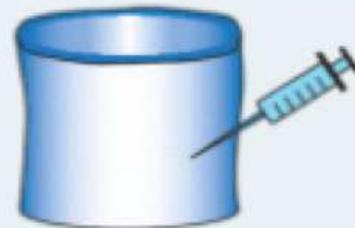
2. Esta "bio-tinta" se introduce en unos cartuchos en forma de jeringas con una agujas largas para la impresión.



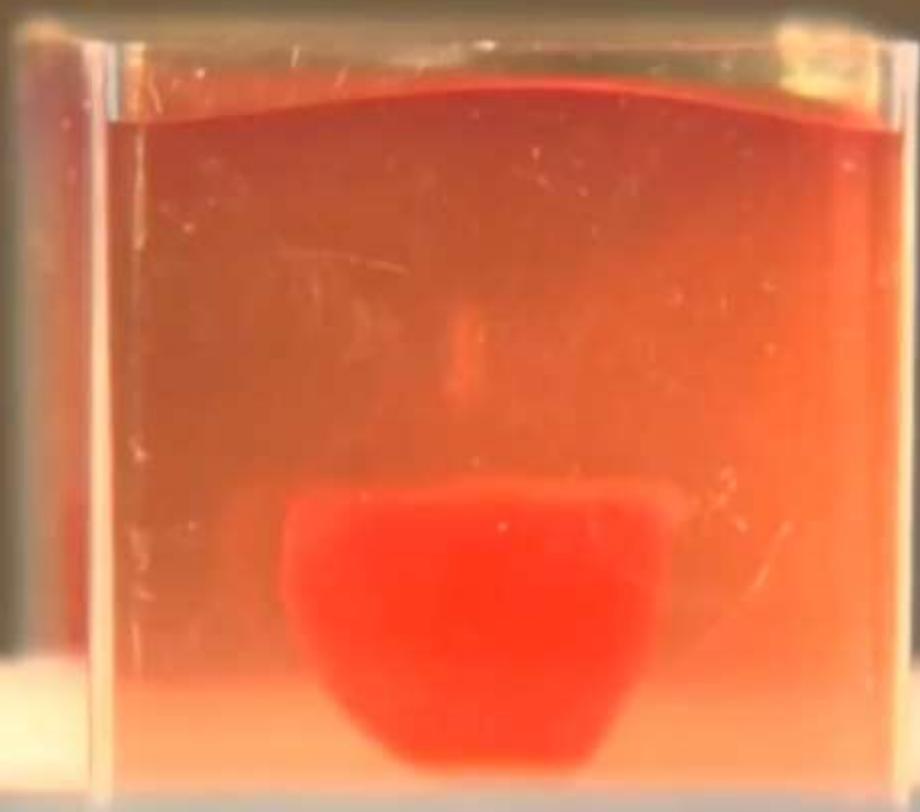
3. La computadora guía a la bio-impresora para ir depositando un diseño de células en capas muy precisas; una capa sobre otra. Entre cada capa se coloca una sustancia llamada "hidrogel", la cual se coloca a través de una jeringa especial y que sirve para "darle forma" a las células.



4. El tejido así "impreso", se deja crecer y madurar y se retira el "hidrogel".



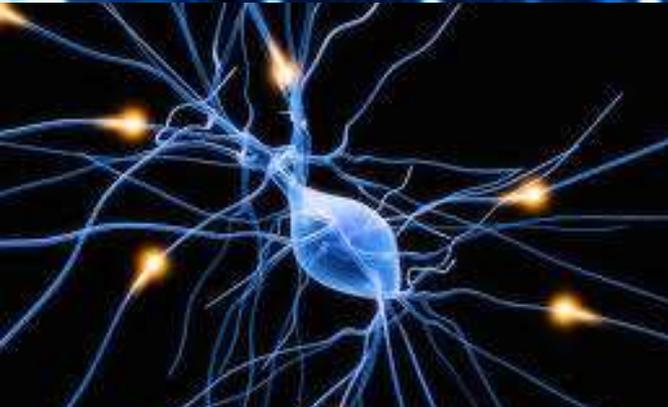
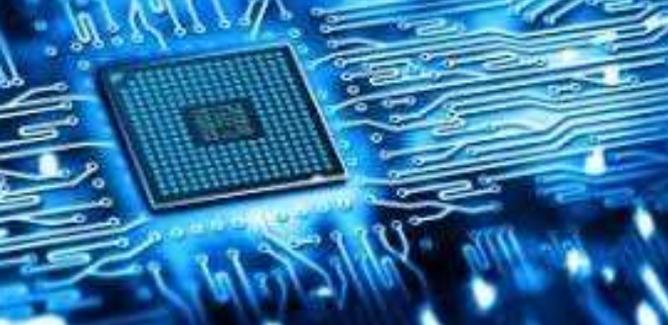
4. El tejido así "impreso", se puede usar para investigación médica o como material para trasplantes.



In a near future everything will be anything but than a "design"...

What is going to happen with extended warranty deals? What are we going to insure?

Intellectual property worries?



Efficient Farming

A unit of water goes further with C4 crops, producing far more food. In China, planting C4 rice could feed 50 percent more people per hectare.

Rice and corn grown with equivalent amount of water (the small rectangles covered by a fourth of one millimeter with water)

C4 Crops
30-37 kg

C3 Rice
15-22 kg



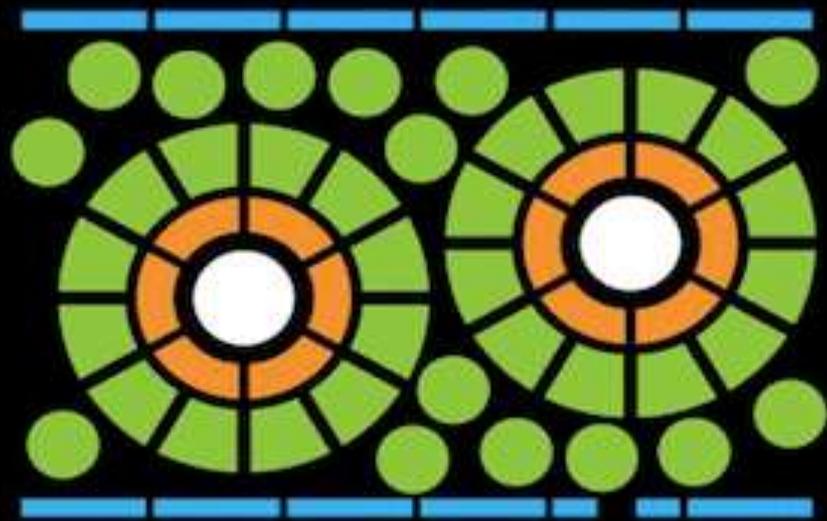
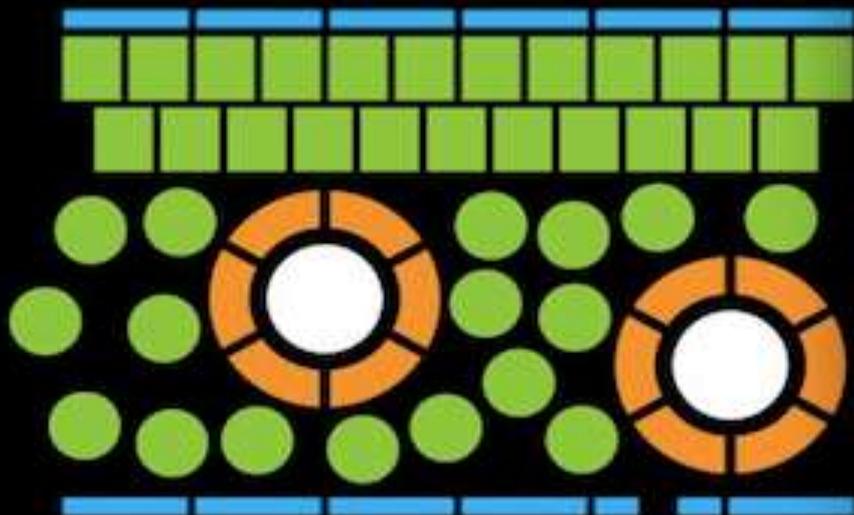
Possible yields in China for one hectare from one hectare of C3 vs. C4 rice

C3 Rice

36 people

C4 Rice

54 people





CRISPR 101

Your Guide to Understanding CRISPR

SYNTHEGO



Special Report **Genomics**

crispr gene editing ready for testing in humans

Biotech companies plan to use the technique to treat blood diseases and blindness

CRISPR, a pioneering genome-editing technique could be used to edit living human cells

David Crow MARCH 5, 2018



Rewriting Life

China's CRISPR twins might have had their brains inadvertently enhanced

New research suggests that a controversial gene-editing experiment to make children resistant to HIV may also have enhanced their ability to learn and form memories.

by Antonio Regalado February 21, 2019

SingularityHub

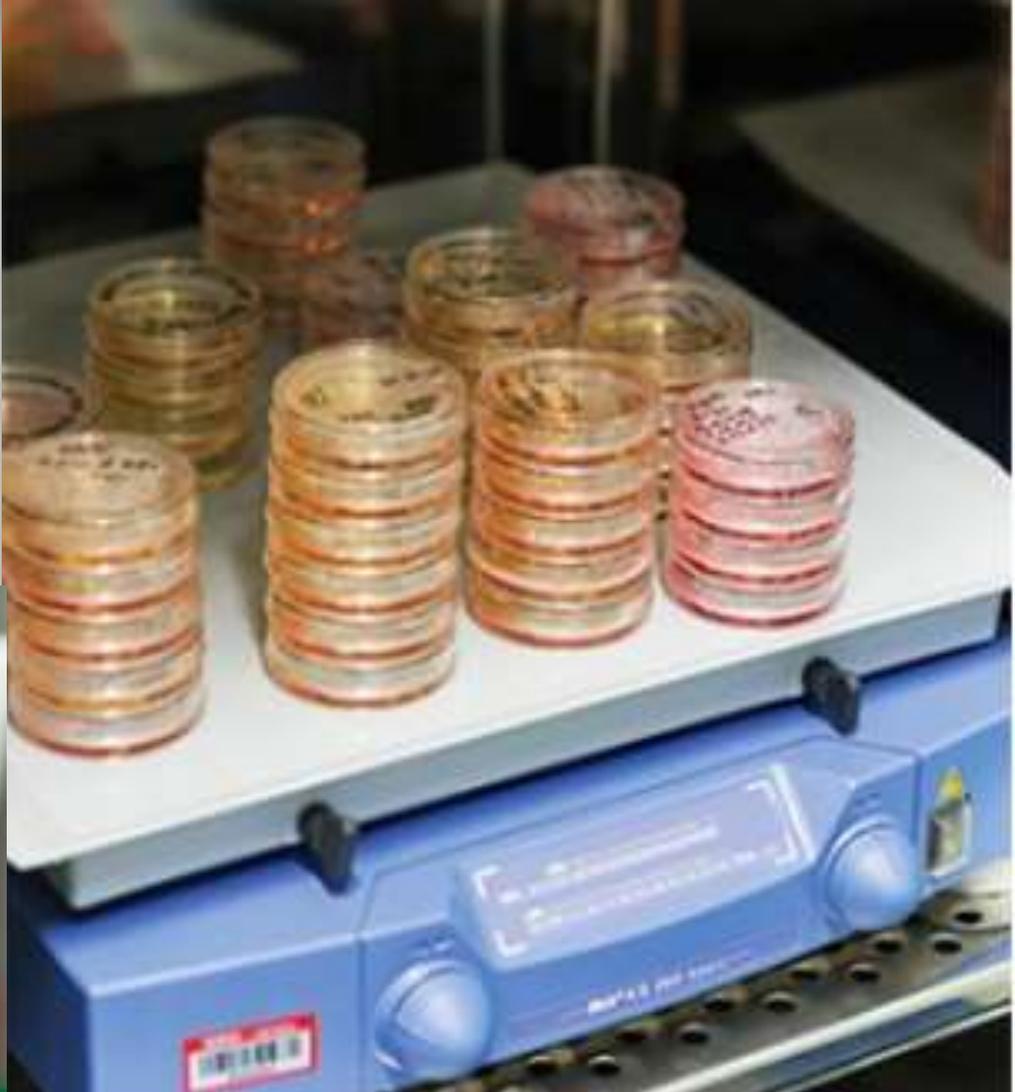
TOPICS IN FOCUS EXPERTS EVENTS VIDEOS

Topics

Scientists Just Added Four New Letters to the Genetic Code

By **Edd Gent** - Feb 24, 2019 2,045





Preventing diseases for \$199



Personal Genome Service™

Get to know your DNA. All it takes is a little bit of spit.

Here's what you do:



1. Order a kit from our online store.



2. Register your kit, spit into the tube, and send it to the lab.



3. Our CLIA-certified lab analyzes your DNA in 6-8 weeks.



4. Log in and start exploring your genome.



Carrier status

Find out if your children are at risk for inherited conditions, so you can plan for the health of your family.



Health risks

Understand your genetic health risks. Change what you can, manage what you can't.



Drug response

Ask your doctor with information on how you might respond to certain medications.



Health tools

Document your family health history, track inherited conditions, and share the knowledge.



Inherited traits

Explore your genetic traits for everything from eye color to whether to make pattern baldness.



Scientific advances

Keep receiving updates on your DNA as discoveries and results, so your knowledge grows as you do.

Disease Risks (100)

↑ Elevated Risks		Your Risk	Average Risk
Calcitriol	new	11.5%	7.8%
Reefless Laga Syndrome		2.5%	2.8%
more >			
↓ Decreased Risks		Your Risk	Average Risk
Prostate Cancer	cf	12.7%	17.8%
Alzheimer's Disease	new	4.8%	7.2%
Colorectal Cancer		4.2%	5.6%
more >			

[See all 100 risk reports...](#)

Carrier Status (24)

Hemochromatosis	Variant Present
Alpha-1 Antitrypsin Deficiency	Variant Absent
Bloom's Syndrome	Variant Absent
BRECA Cancer Mutations (Selected)	Variant Absent
Cystic Disease	Variant Absent
Cystic Fibrosis	Variant Absent
Familial Dysautonomia	Variant Absent
Factor XI Deficiency	Variant Absent

[See all 24 carrier status...](#)

Traits (50)

Alcohol Flush Reaction	Open Not Flush
Bitter Taste Perception	Can Taste
Earwax Type	Wet
Eye Color	Likely Brown
Hair Curl	Slightly Curlier Hair on Average

[See all 50 traits...](#)

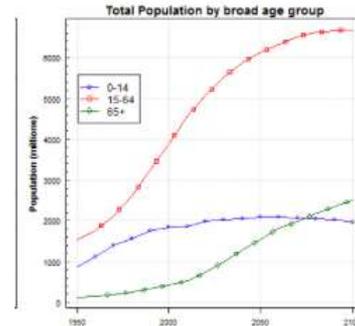
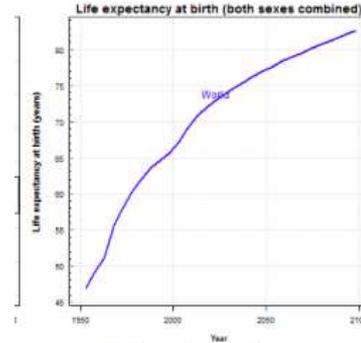
Drug Response (19)

Warfarin (Coumadin®) Sensitivity	Increased
Abacavir Hypersensitivity	Typical
Alcohol Consumption, Smoking and Risk of Esophageal Cancer	Typical
Clopidogrel (Plavix®) Efficacy	Typical
Fluorouracil Toxicity	Typical

[See all 19 drug response...](#)

We will start cheating death...

... so how it would affect (Life) insurance industry

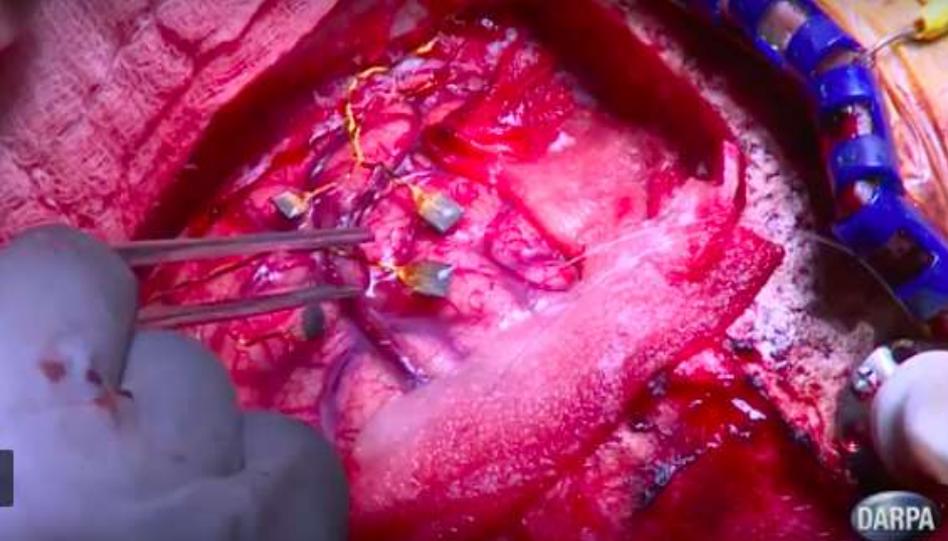


- ⌘ 3D Bio - Printing
- ⌘ Use of AI in medicine
- ⌘ Predictive genetic testing...
- ⌘ might lead to adverse selection through asymmetry of information. .



The NeuroMedical Center Clinic





Providing a Sense of Touch through a Brain-Machine Interface

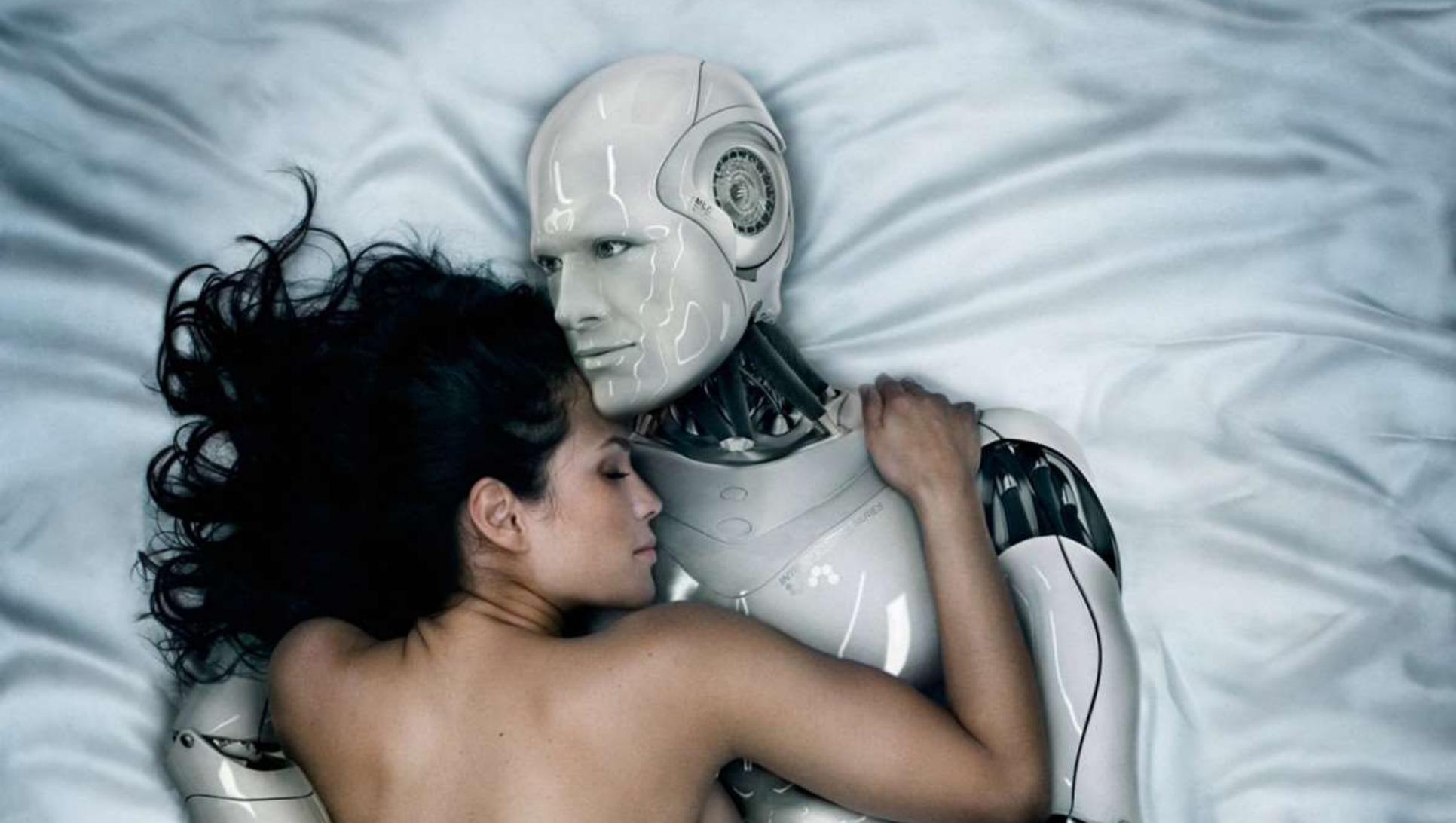


MORE VIDEOS



Jesse Sullivan and Claudia Mitchell demonstrate the capabilities of their RIC six-motor, neural-controlled prosthetic arms with a high five.
Photo courtesy of the Rehabilitation Institute of Chicago.





6





¿Quién cree que Blockchain revolucionará a la industria?



¿Quién puede explicar qué es Blockchain?...





People in Bangkok are using **blockchain to trade electricity** with each other

Last but not least...

... what about Blockchain?



[THE GROUP](#)

[REINSURANCE](#)

[PRIMARY INSURANCE](#)

[INVESTOR RELATIONS](#)

[MEDIA RELATIONS](#)

[CAREER](#)

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Other Company News

You have access to the database of Munich Re company news. To find information quickly, you can choose from among the following search options:

10 September 2017

B3i launches working reinsurance blockchain prototype

B3i, the Blockchain Insurance Industry Initiative, announces launch of market beta-testing of its reinsurance blockchain prototype.





Autonomous vehicles
will **entirely re shape**
the new economy to
come...

40%

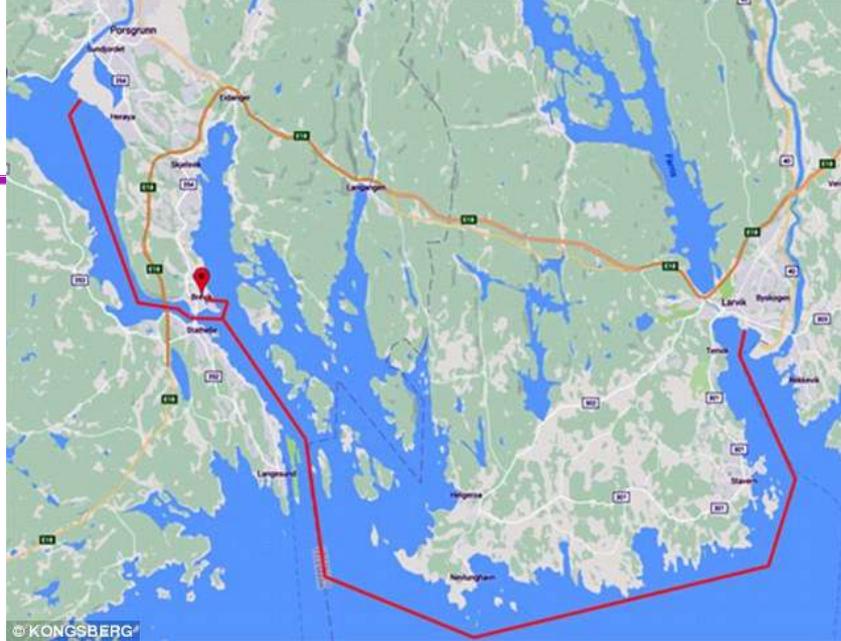
”Ownership
?”

What about if instead of
insuring x billion cars
now we will have to
insure a few thousand of
fleets...

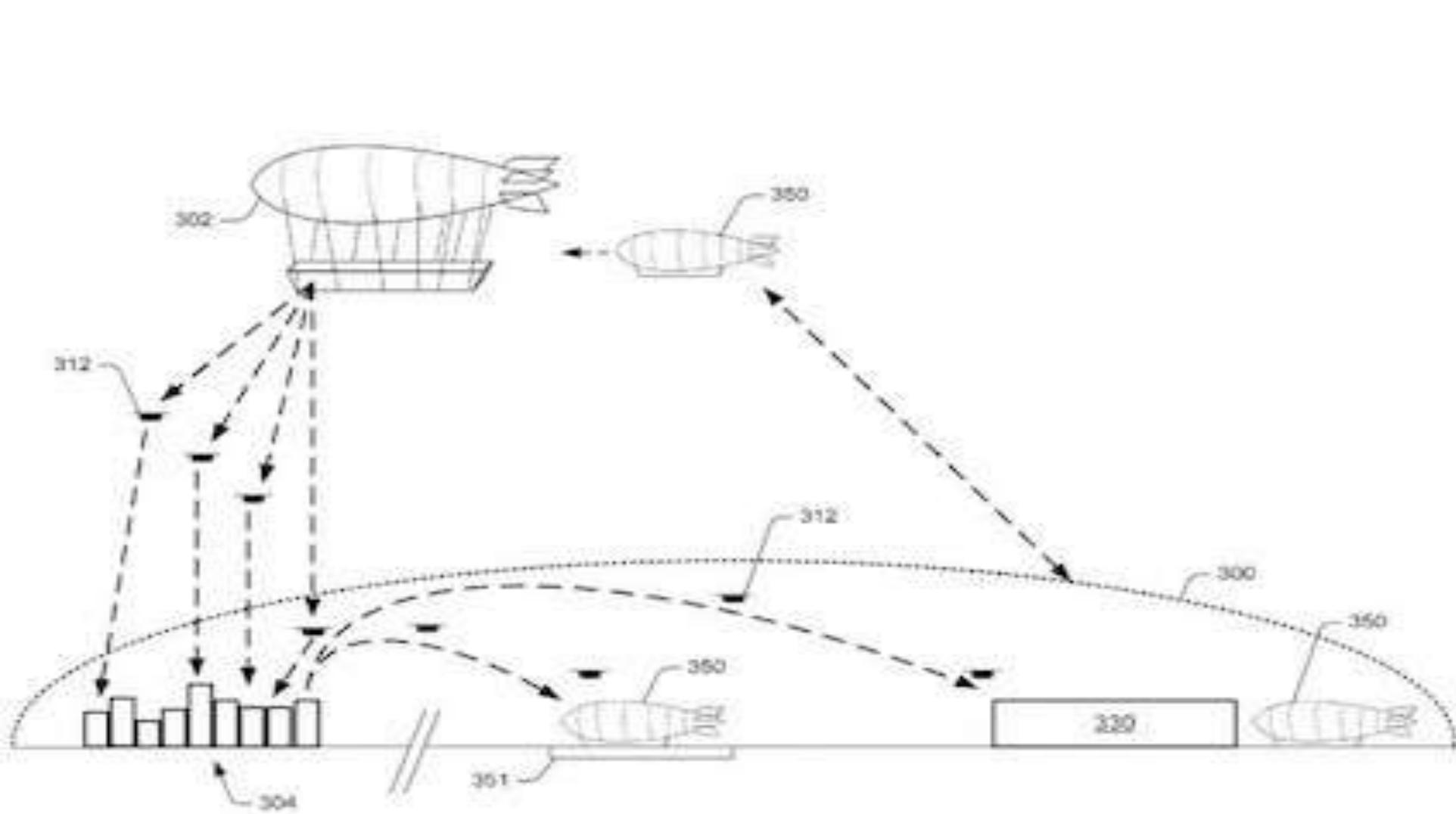
- 3D Surround View
- Interior Camera
- Rear Cross Traffic
- Blind Spot Detection
- Lane Departure Warning
- Intelligent Headlamp Control
- Traffic Sign Recognition
- Forward Collision Warning
- Intelligent Speed Control
- Pedestrian Detection



The autonomous ship YARA Birkeland.

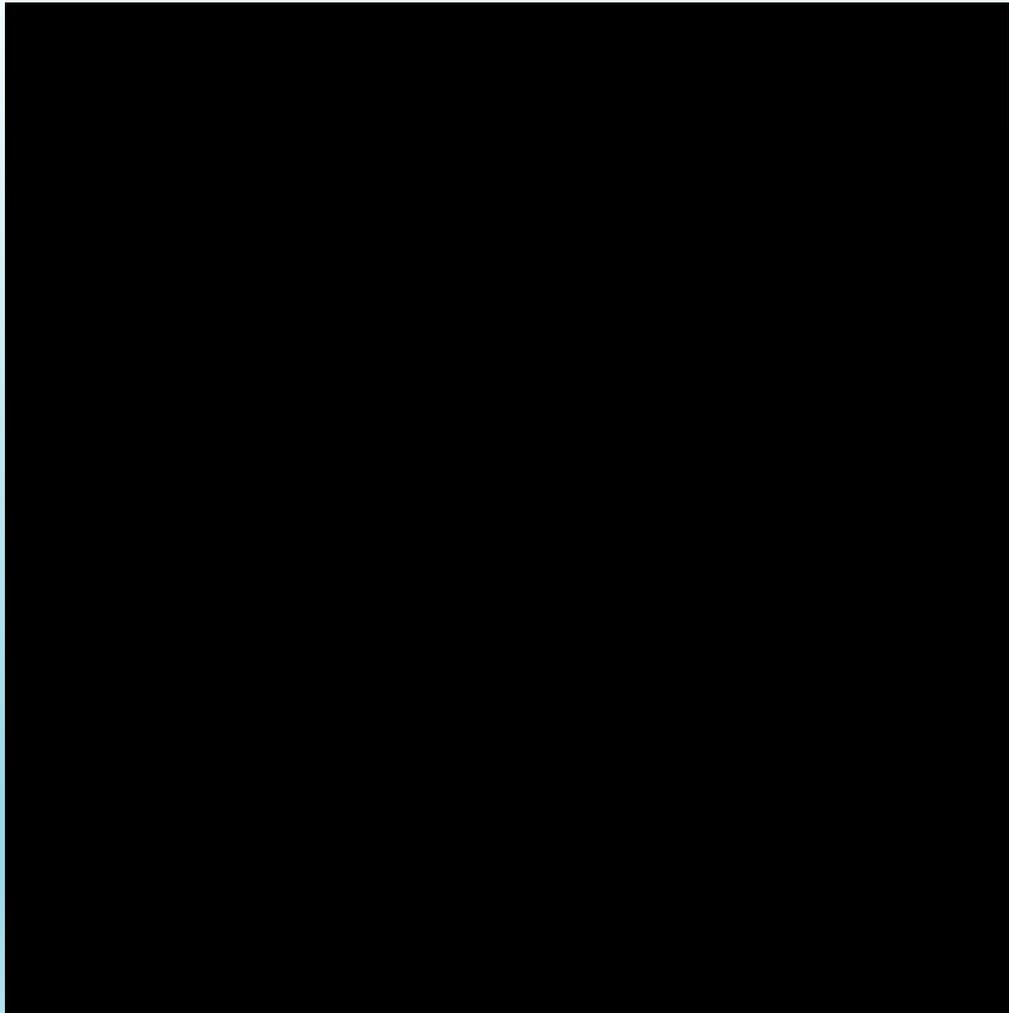












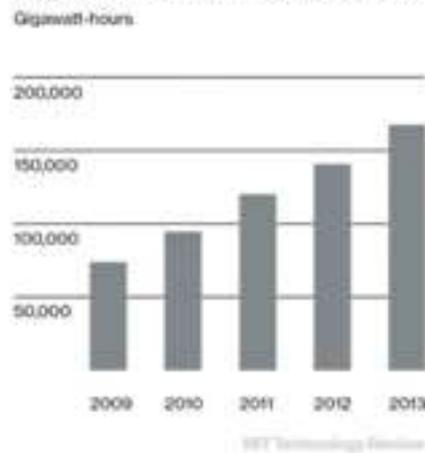




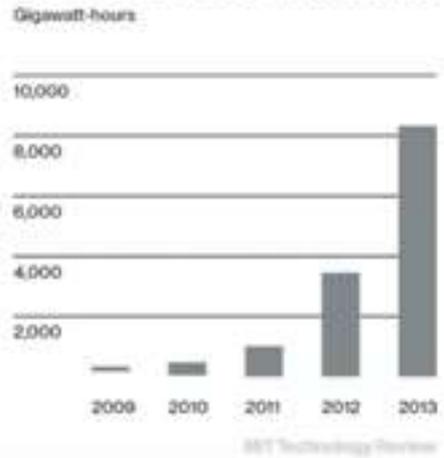




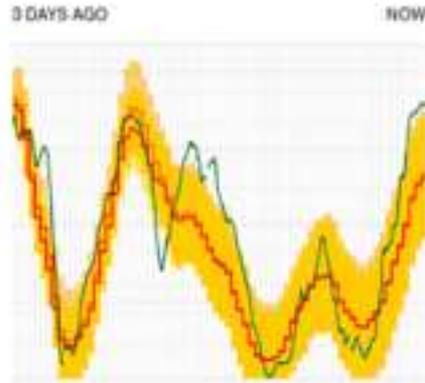
U.S. Wind Power Generation



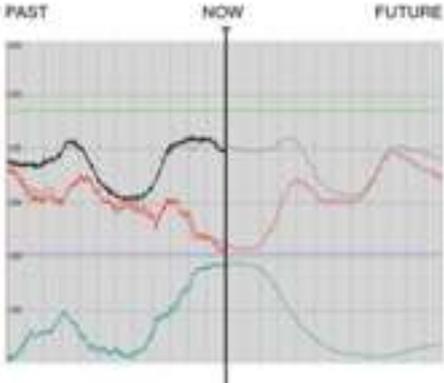
U.S. Solar Power Generation



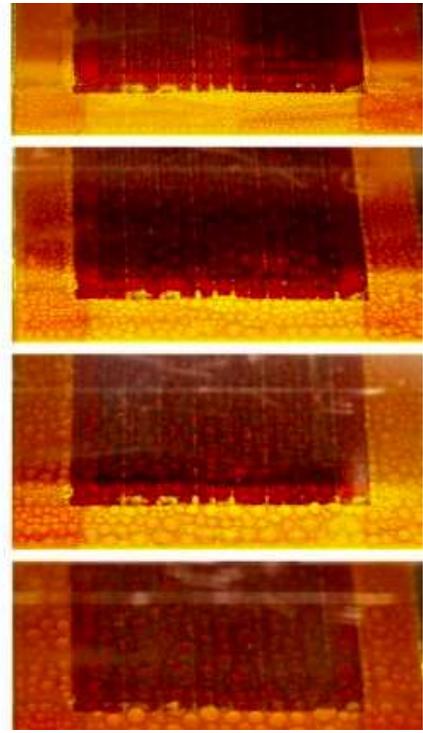
Power Forecast



Power Balancing







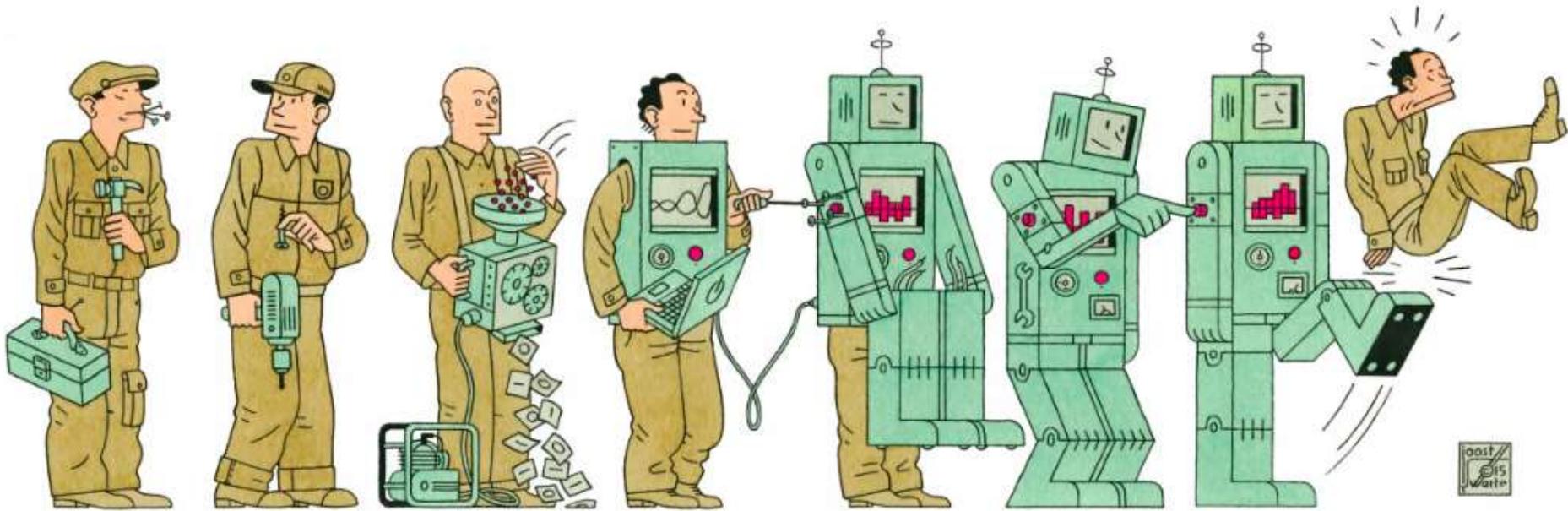


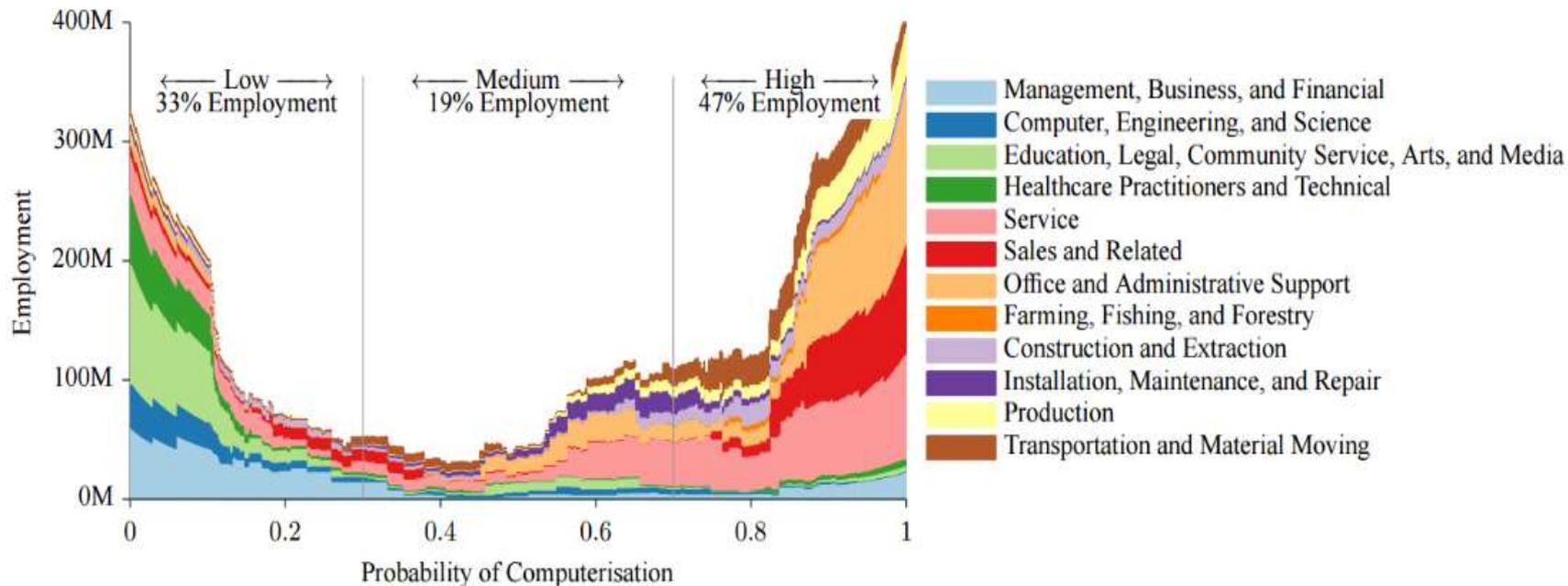




**Who
will be
impacted
?**





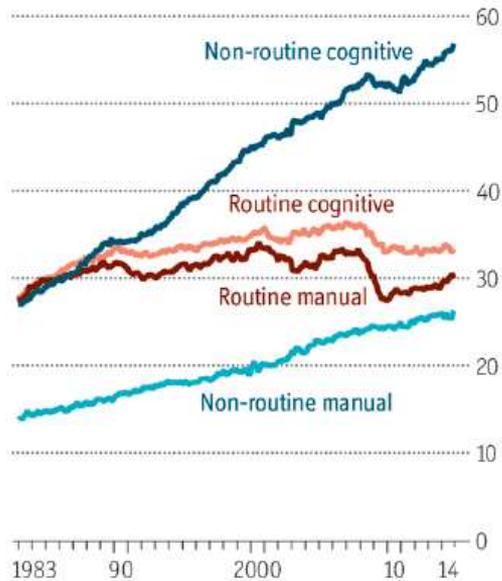


* Distribution based on 2010 job mix.

Source: Frey, C.B. and M.A. Osborne, "The Future of Employment: How Susceptible Are Jobs to Computerisation?", 17 September 2013

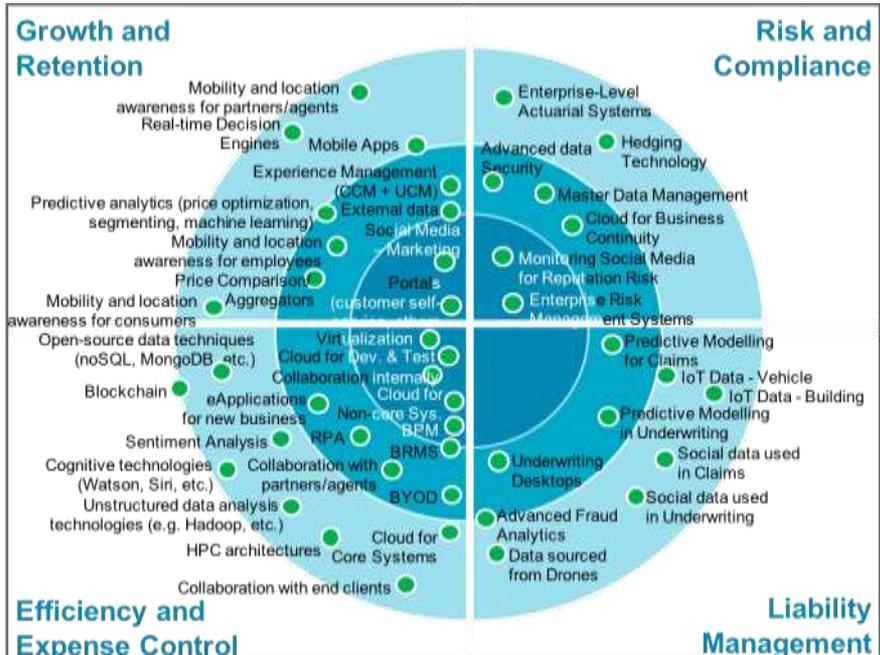
Think

United States employment, by type of work, m

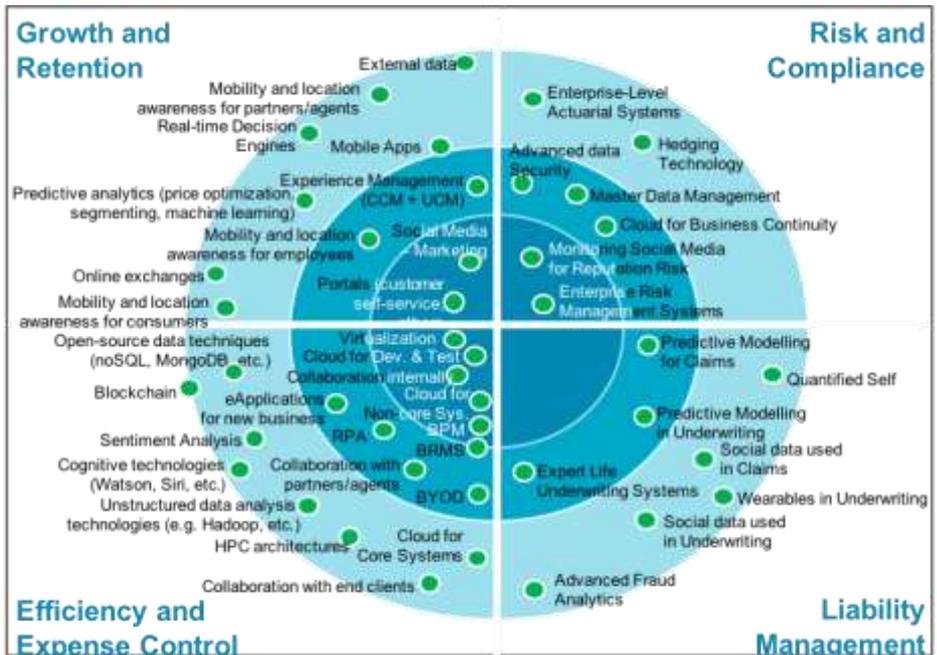


Sources: US Population Survey; Federal Reserve Bank of St. Louis





P&C



Life



The Pulse of Fintech Q4 2017

Global analysis of
investment in fintech

Top 10 predictions for 2018

- 1 AI accelerates:** Continued innovation and adoption of AI as an underlying tech
- 2 Regtech rising:** Increased investment in regtech around the world
- 3 Building bridges:** Greater collaboration and partnering between large-scale providers
- 4 Next gen digital lending:** The rise of online mortgage technology and platforms
- 5 Beyond use cases:** Early success efforts in the initiation of blockchain production systems
- 6 Open banking:** Open APIs pave the road for third party developers in Europe and Globally
- 7 New challenger banks:** Financial services incumbents building their own digital banks
- 8 Insurtech innovation:** Accelerated investment into driving insurtech innovations and building hubs around the world
- 9 Going full-stack:** Broadening of solution sets by mature fintech companies
- 10 Big tech participation:** More partnering between fintech and technology giants

Top 10 Trends in Financial Services, 2018

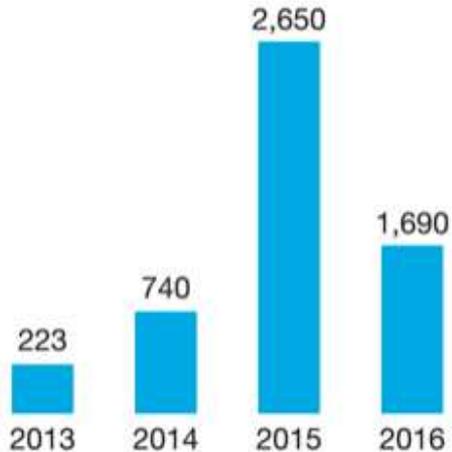
JANUARY 2018

- **Data protection and privacy take center stage:** Several factors, including ceaseless cyberthreats and Europe's General Data Protection Regulation (GDPR), will force insurers to adopt a fresh data strategy.
- **Unstructured data spreads in property and casualty (P&C) underwriting and claims:** Consumers want quicker underwriting and claims decisions, which will compel carriers to turn to unstructured data.
- **Technology becomes a greater part of loss-control strategies:** High-severity losses are pushing carriers to think differently about how to limit those losses.
- **Instant claims payouts become key differentiators in P&C:** In an increasingly customer-centric environment, more carriers will strengthen policyholder engagement and relationships by using available technology to pay claims quickly.
- **Life insurers step up customer-facing full-office digital transformations:** Customer demand and the need to improve upon the full customer experience will force life insurance carriers to look beyond front-office digital solutions to solutions that will support the full policy life cycle.
- **Accelerated life insurance underwriting gets personal:** The need to create an individualized experience while providing immediate gratification, simplicity, convenience, and products that fit consumers' needs is pushing carriers to shift to a true accelerated underwriting process, employing rules engines, scoring tools, advanced algorithms, and third-party data.
- **Life insurers embrace automation:** Reducing operational costs, improving scalability, and streamlining internal processes while plagued by legacy systems are some key reasons life insurance carriers are forced to implement RPA to support automation.
- **Health plans emerge as a medical bill payment channel:** Deepening provider and member relationships are the linchpin for more payers to implement medical bill payment collection technologies, paving the way for a new disruptive consumer collection model in healthcare.
- **Health insurers revamp provider data management:** Better provider data management is being driven by Centers for Medicare & Medicaid Services. But with potential financial penalties, health plans recognize this capability's importance as their businesses become more consumer-focused.

The incipient world of InsurTech...

The growth of insurtechs.

Insurance tech funding, \$ million



McKinsey&Company | Source: CB Insights

Where insurtechs are focusing.

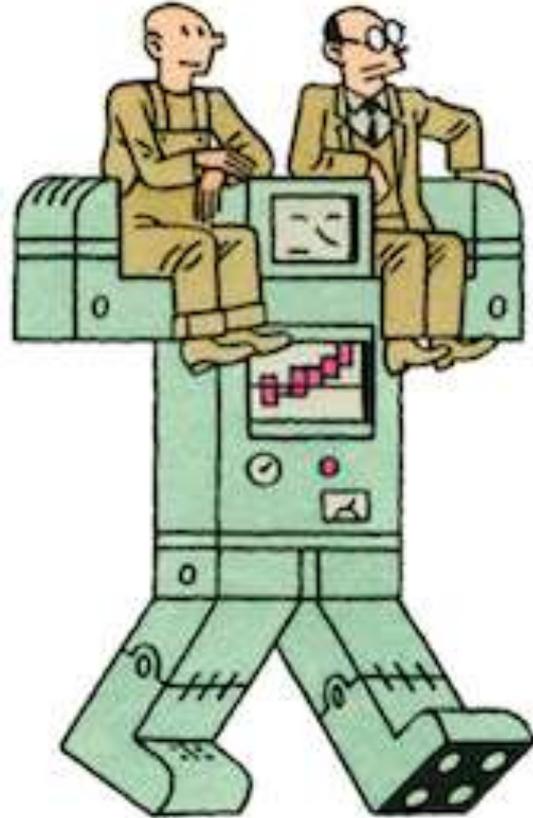
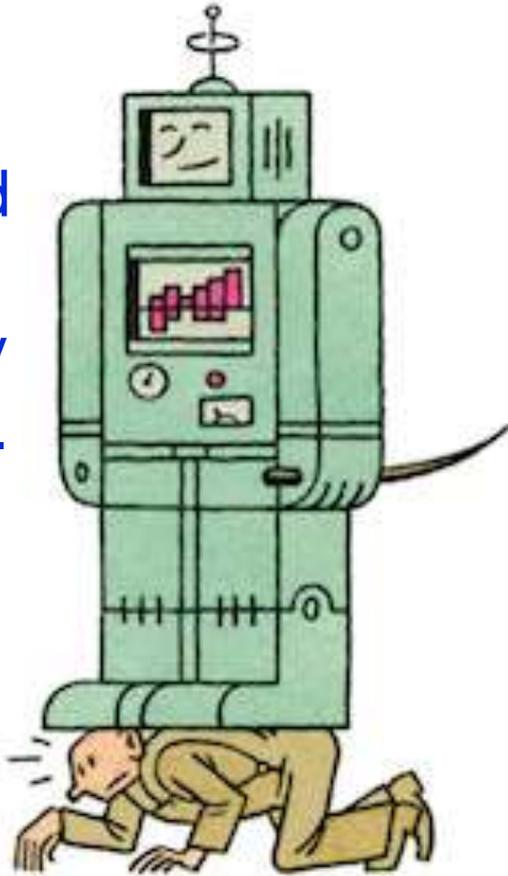
Number of innovations as % of total in the database¹

Share of innovations in Insurtech database

● <5% ● 5-10% ● >10%



We have to figure out how to avoid being displaced by technology...



...and instead, how we can get the most of it for everyone.

Carlos Alejandro Belloni

