



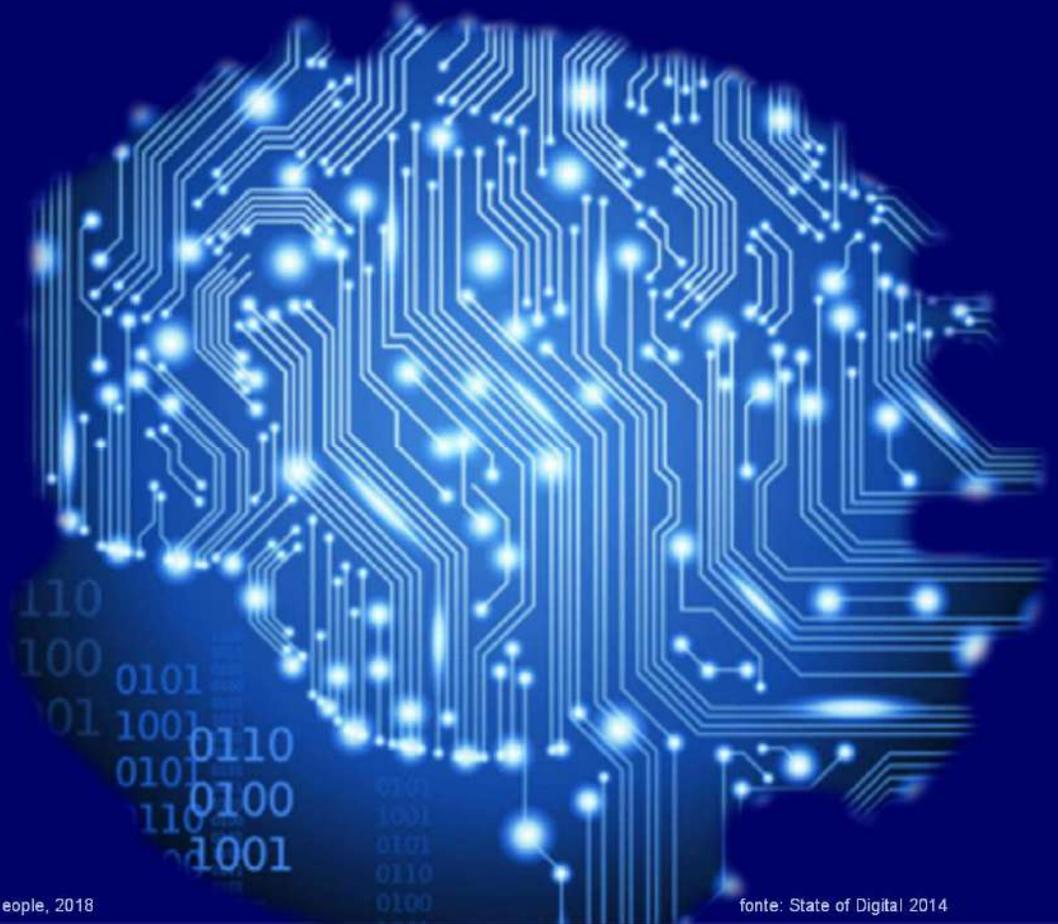
A transformação digital ... num mundo em mudança

António M. Cunha
UMinho e DTx-Colab
antonio.cunha@dtx-colab.pt

transformação digital



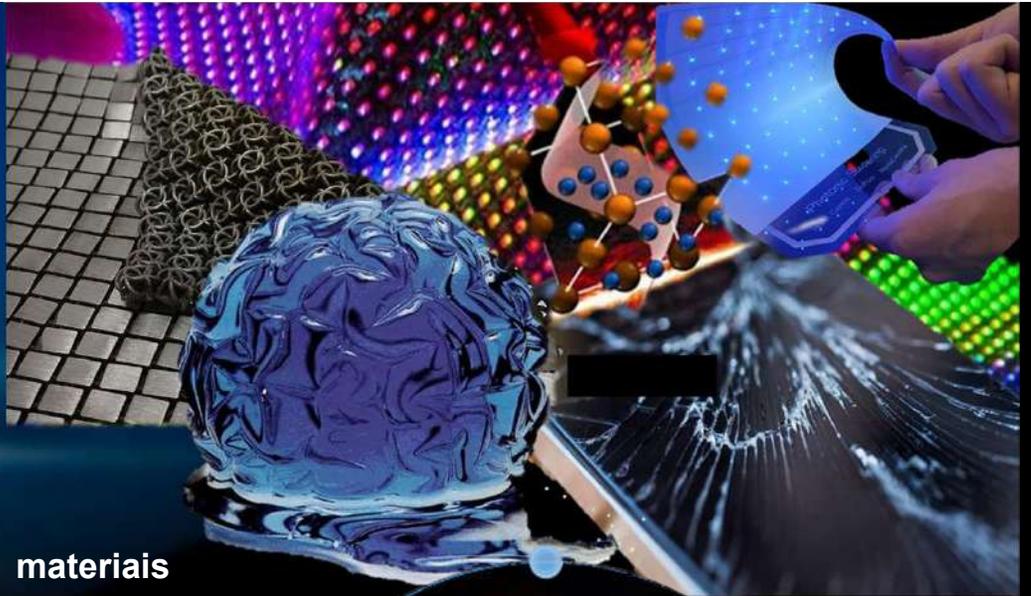
fonte: The Digital Transformation People, 2018



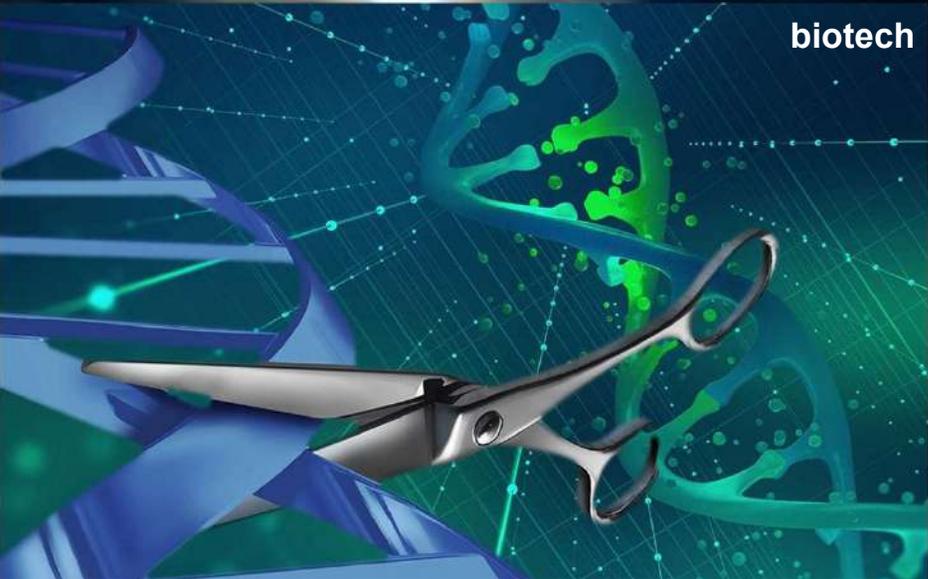
fonte: State of Digital 2014



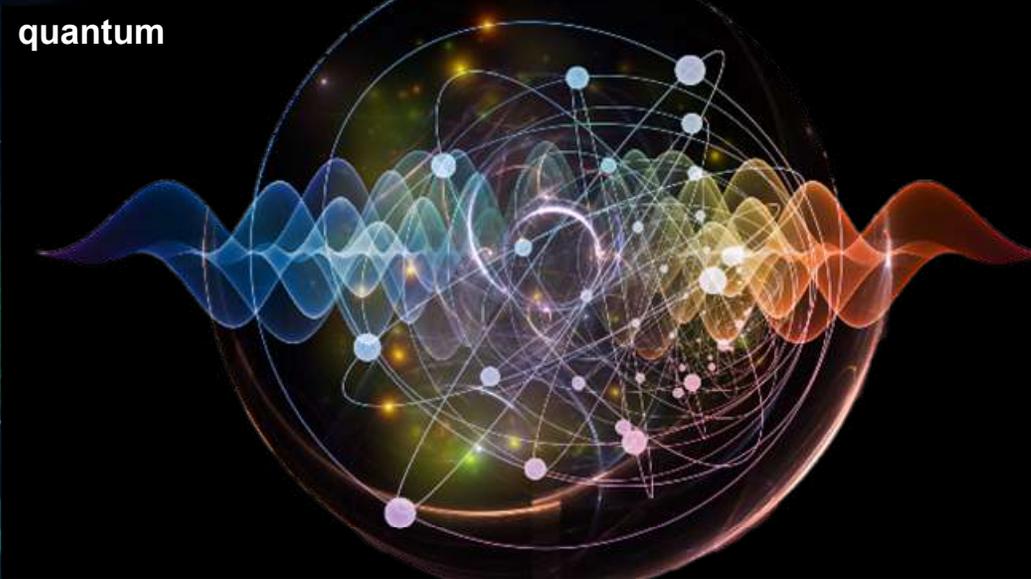
digital



materiais



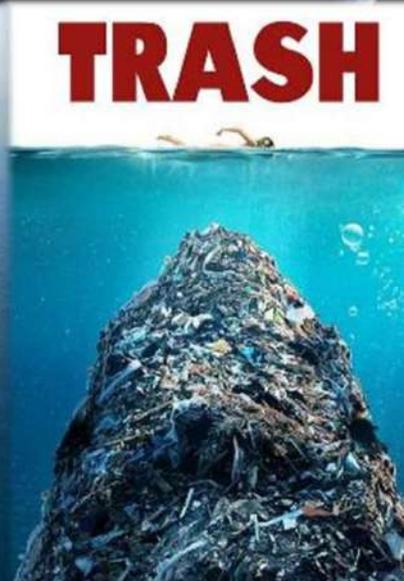
biotech



quantum

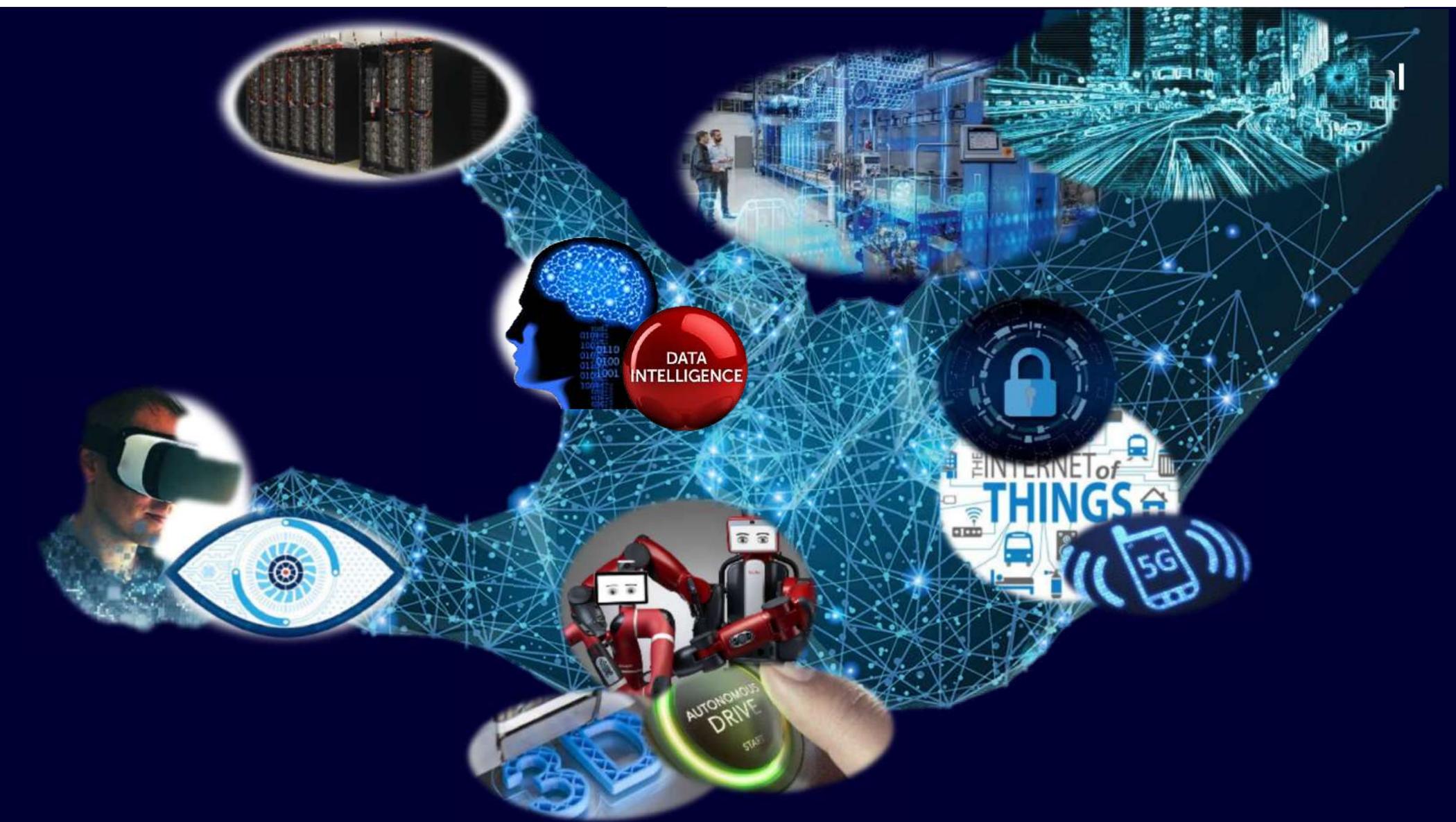
Revolução Científica

um mundo ... de risco



TRASH







**novos paradigmas na interface humano máquina
e nos modelos de negócio**





08/06/2020

2020		2010	
Microsoft \$1 200 000 bln		Petro China \$329 260 bln	
Apple \$1 113 000 bln		Exxon Mobil \$316 231,65 bln	
Amazon \$970 590 bln		Microsoft \$256 865 bln	
Alphabet \$782,68 bln		ICBC \$246 920 bln	
Alibaba Group \$521 740 bln		Apple \$213 097 bln	
Facebook \$475 460 bln		BHP Billinton \$209 935 bln	
Tencent \$471 660 bln		Wall-Mart \$209 001 bln	
Bershire Hathaway \$440 830 bln		Bershire Hathaway \$200 621 bln	
Visa \$357 020 bln		General Electric \$194 246 bln	
Johnson & Johnson \$345 700 bln		China Mobile \$192 999 bln	





A omnipresença do digital

o futuro ... (todo) conectado



source: CoolThings

source: Sensirion

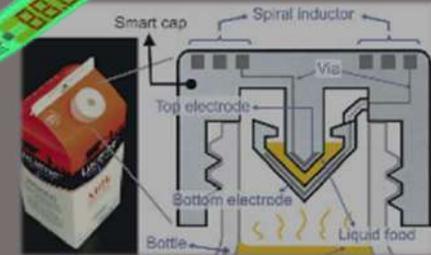
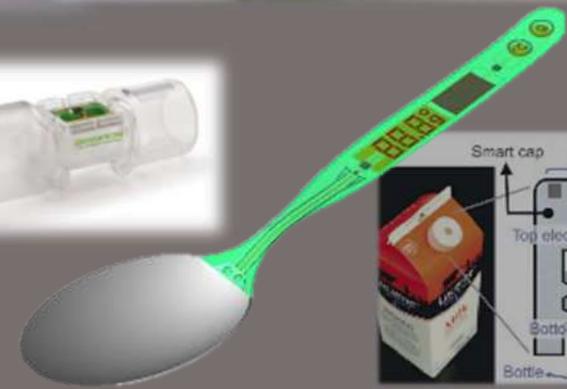
source: Deutsche Telekom



source: Dream Top



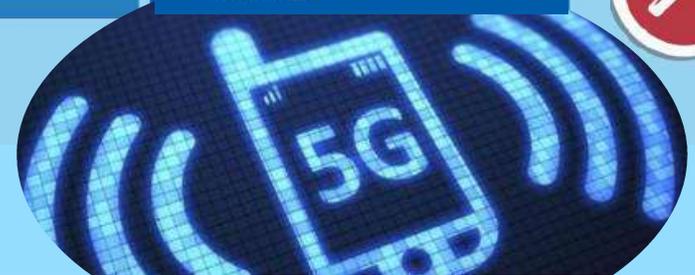
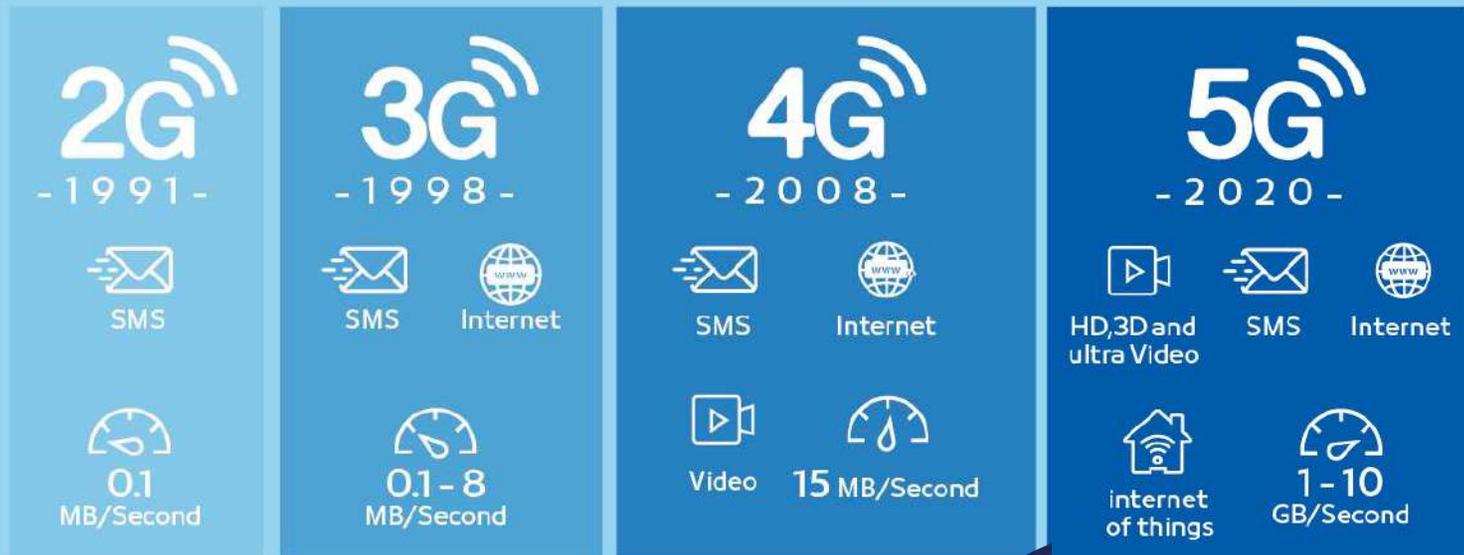
source: Janine Aikio, VTT



source: UC Berkely, 2015



5G To Transform Lives



... desmaterialização / virtualização

omnipresença dos
sistemas de
informação

desmaterialização
de processos

grandes volumes de
informação / *big data*



... conectado

soluções na Cloud

- infraestrutura (IaaS)
- plataforma (PaaS)
- software (SaaS)



The background is a complex digital visualization. It features a central wireframe model of a human head, rendered in a light blue color, set against a dark blue background. The scene is filled with glowing binary code (0s and 1s) in various colors (yellow, orange, blue) and orientations. There are also vertical bars of varying heights and widths, resembling a bar chart or data visualization, and several bright, glowing lines that suggest data flow or network connections. The overall aesthetic is futuristic and high-tech.

inteligência artificial = big data + algoritmos

cibersegurança



realidade virtual e aumentada

crescente
utilização
da realidade
virtual

e da
realidade
aumentada
(mixed reality)



fonte: Shutterstock



source: Google





fonte: I-SCOOP



fonte: Jean Perz



fonte: Skift / Microsoft



processamento de voz

fonte: ComputerWorld, 2020

realidade virtual tátil

fonte: ZDNet, 2019

novas e mais
frequentes
inovações
digitais

The Future

of Computing

The era of predictable improvement in computer hardware is ending.

The Economist, maio 2016

tecnologias de informação

organic field-effect
transistors
(OFET / OLED)

écrans flexíveis



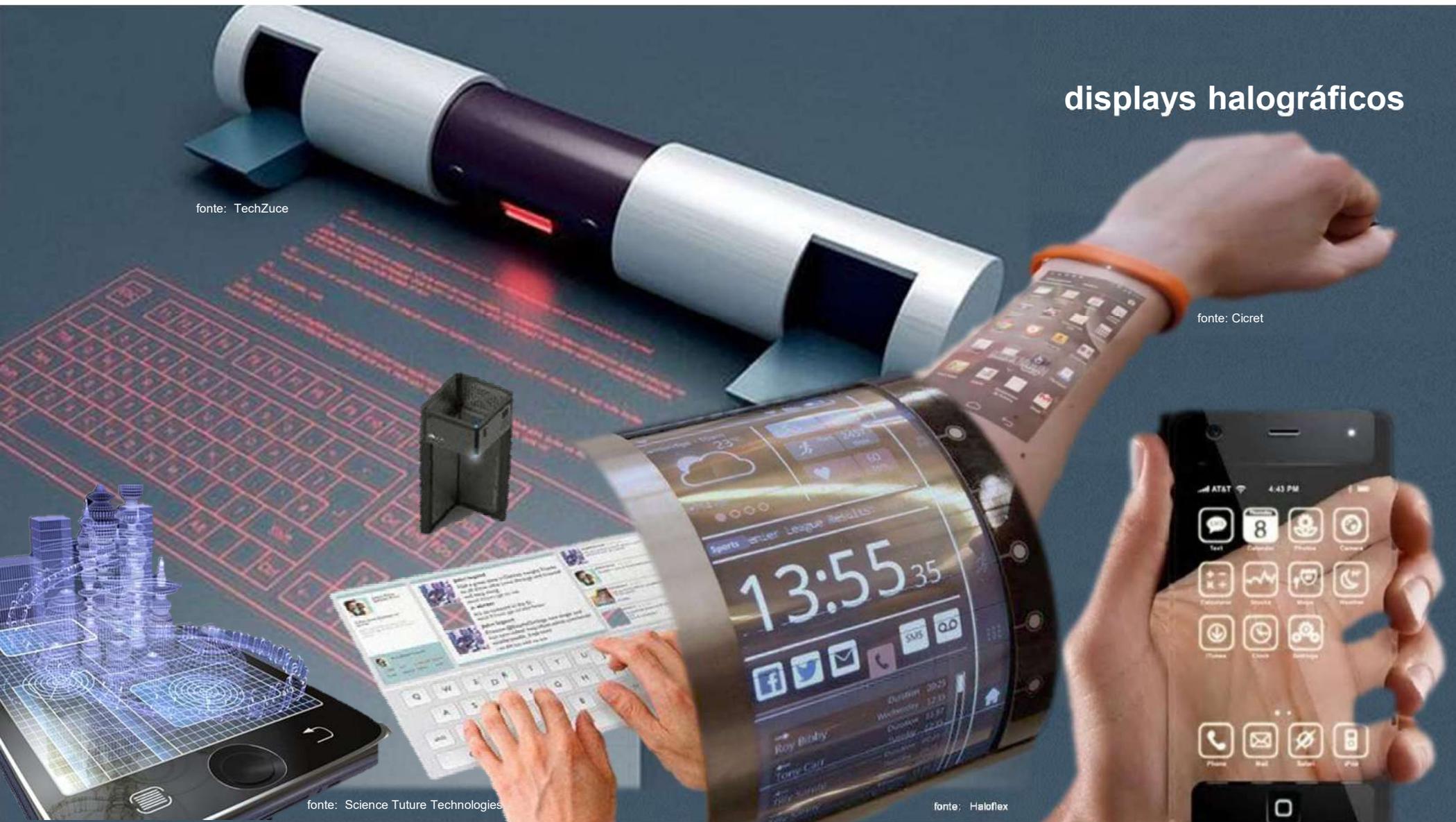
displays halográficos

fonte: TechZuce

fonte: Cicret

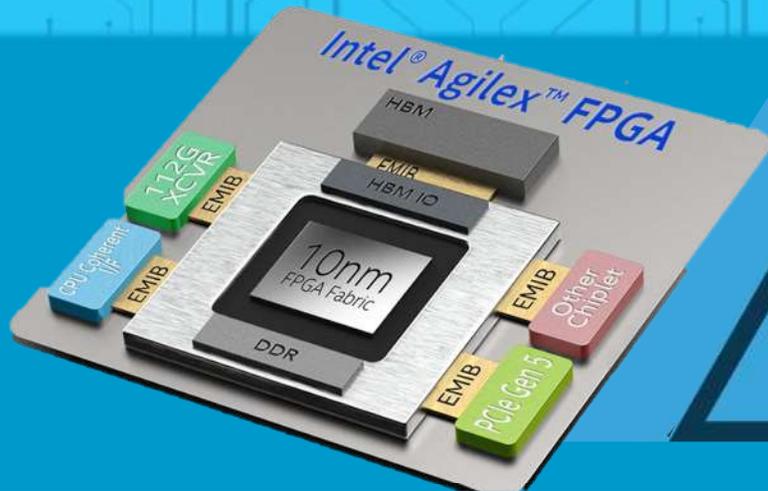
fonte: Science Tuture Technologies

fonte: Haloflex



Edge computing

Computação de fronteira



CLOUD

Data centers
milhares



PROXIMIDADE
(FOG)

Nós
milhões

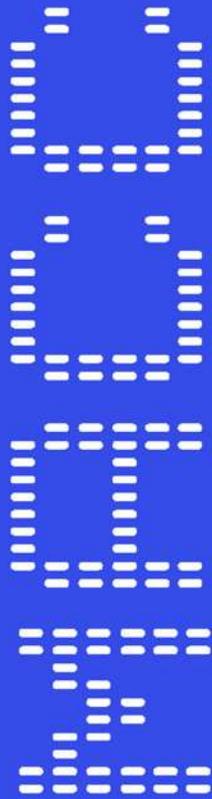


FRONTEIRA

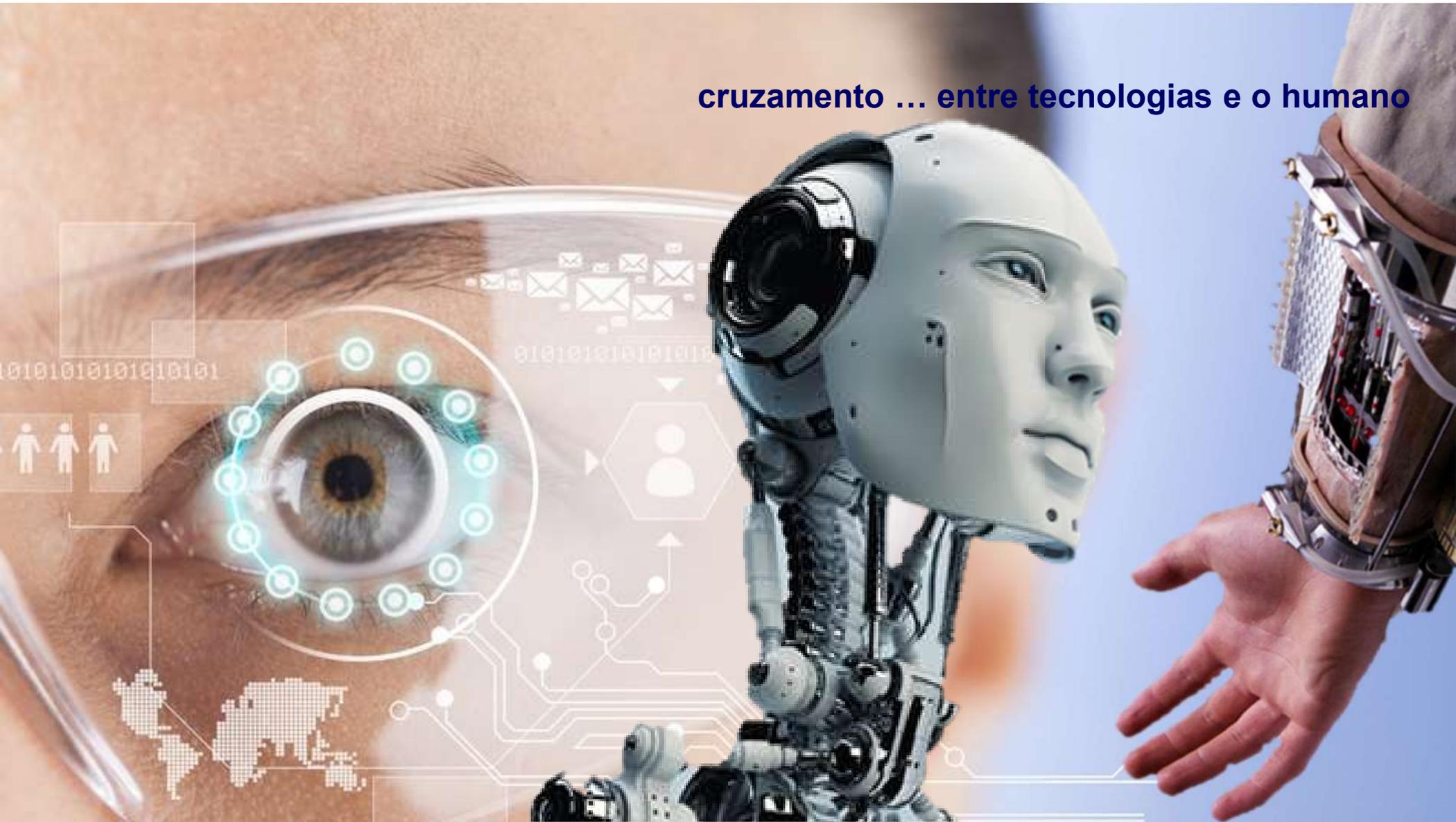
Dispositivos
bilhões

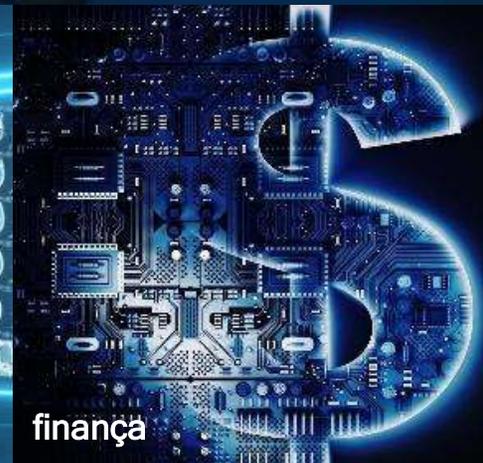


Minho Advanced Computing Center



cruzamento ... entre tecnologias e o humano







indústria



robótica



o futuro ... automatizado / robotizado





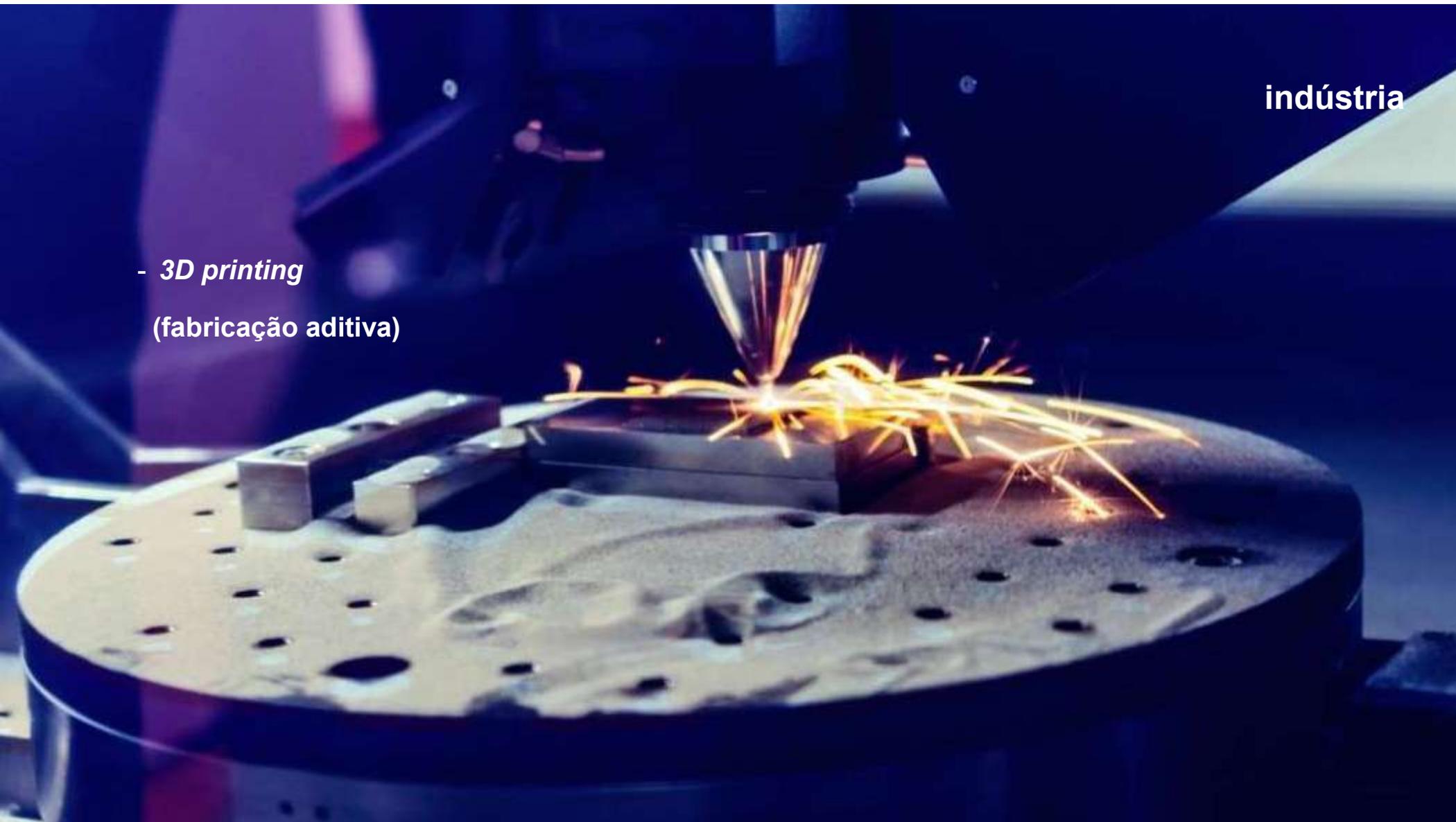
hiperautomação

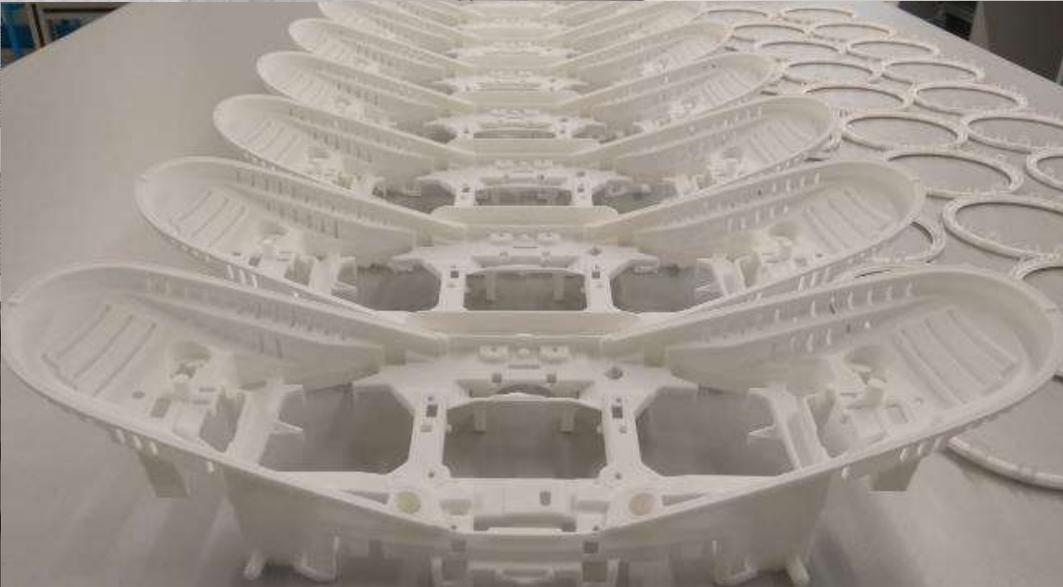
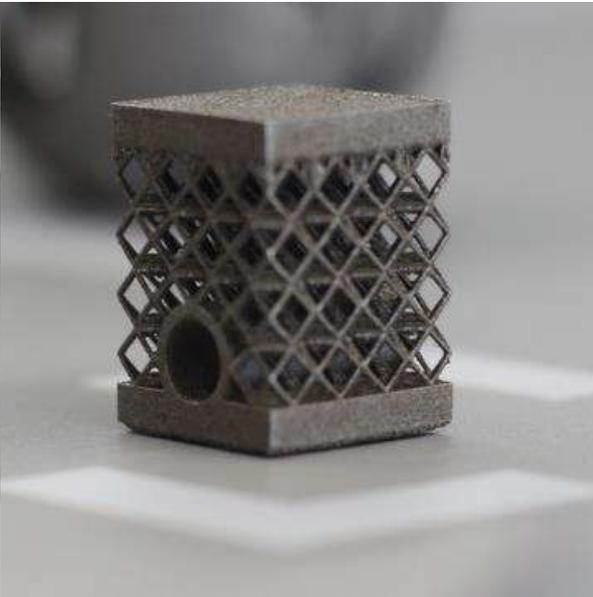
fonte: Gartner, 2020



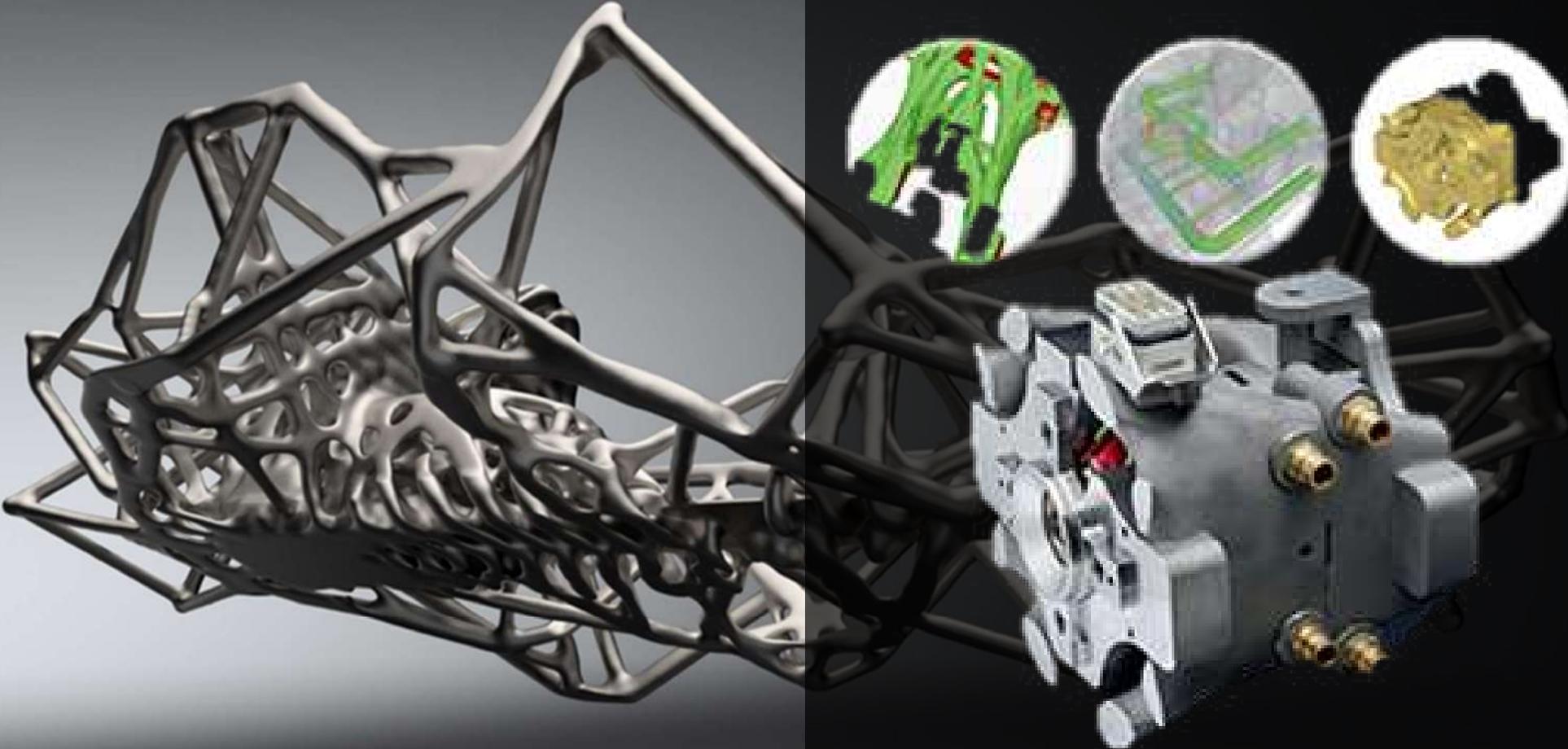
indústria

- *3D printing*
(fabricação aditiva)

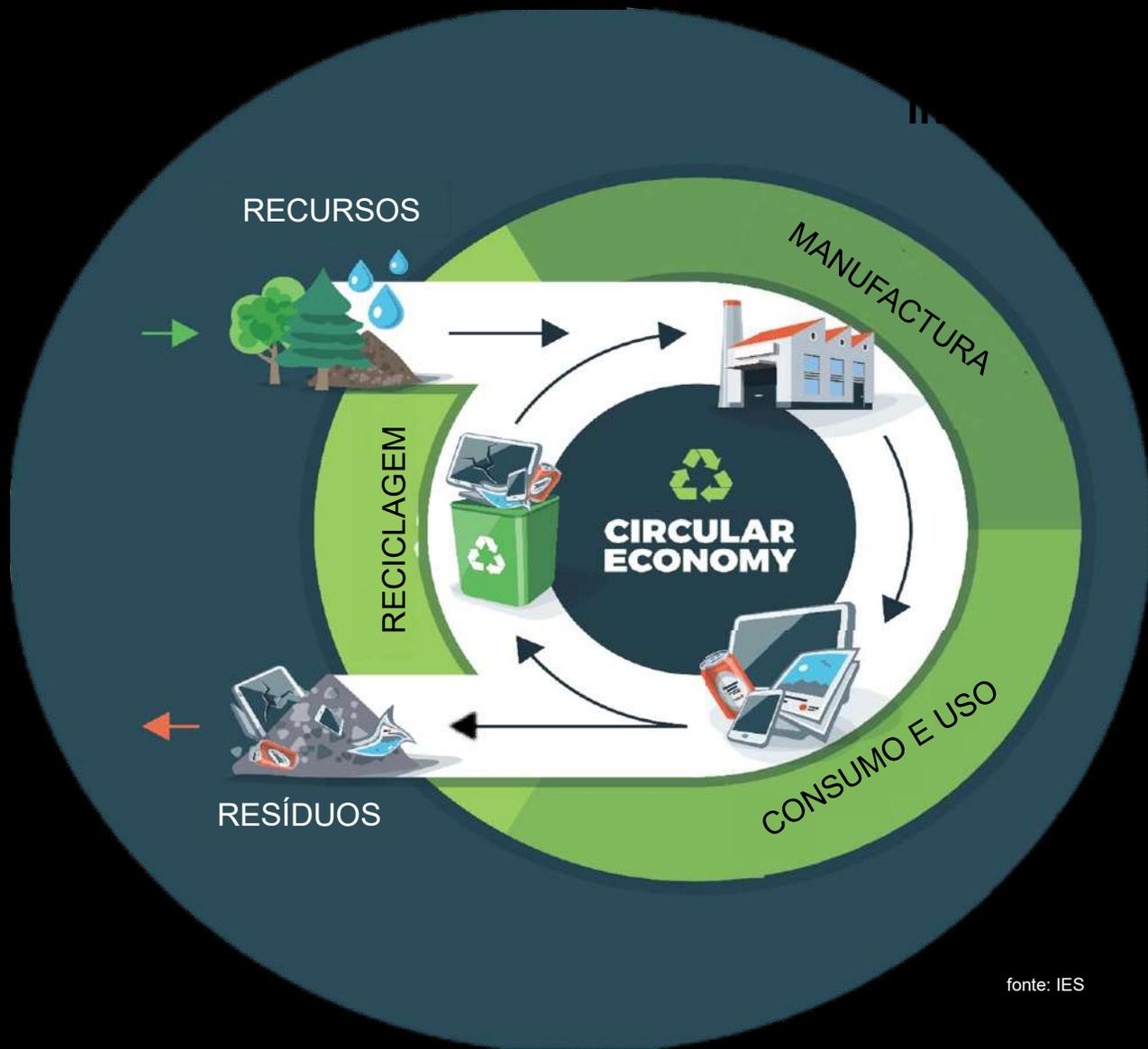




tendências: **otimização topológica**



economia circular





mobilidade

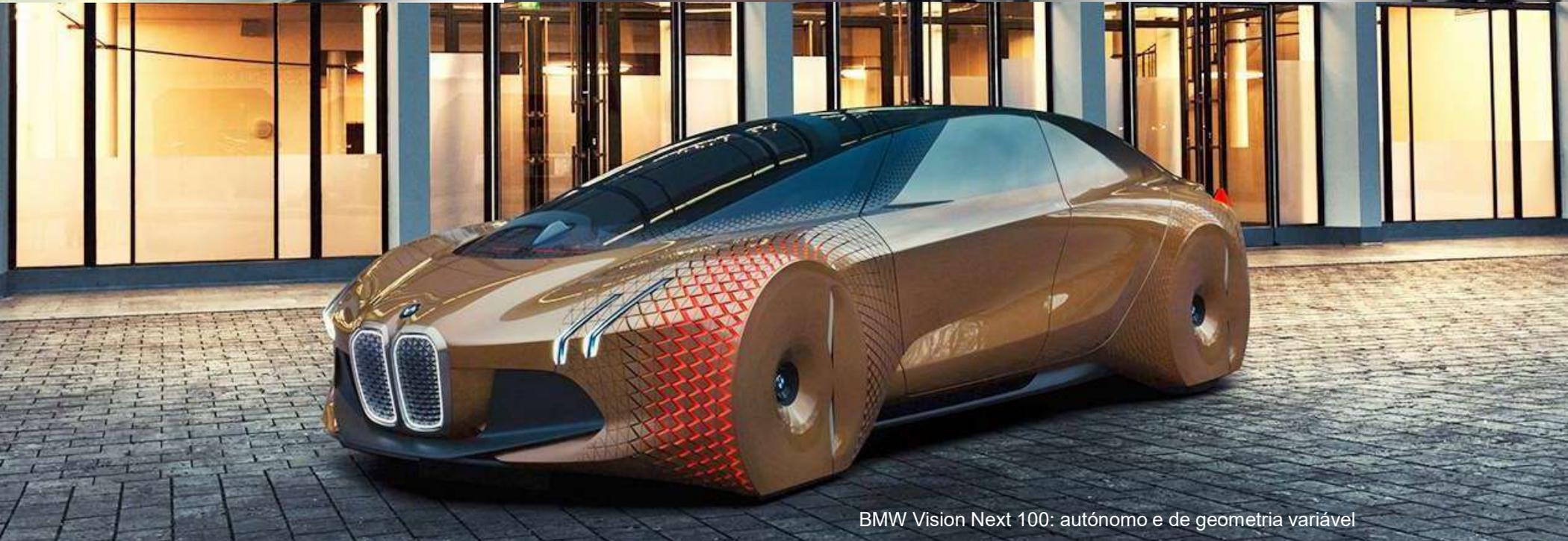
movilidad



**movilidad
elétrica**

**veículos
autónomos**



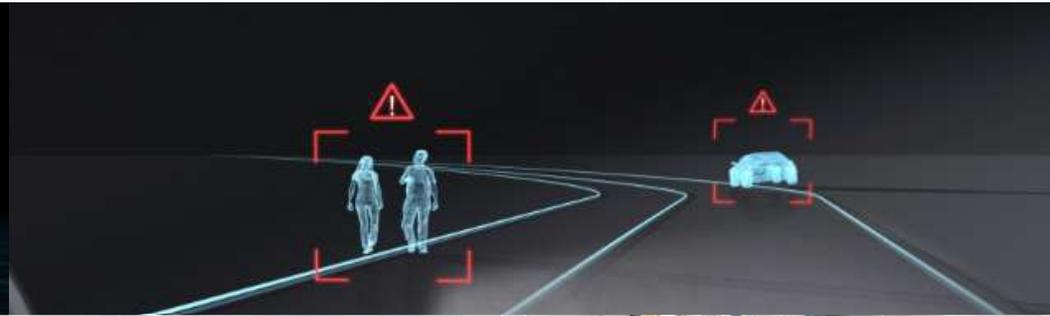


BMW Vision Next 100: autónomo e de geometria variável



Universidade do Minho

INNOVATIVE CAR HMI



... e os novos modelos negócio



OnlineMarketplace, 2019



Toyota, 2019



Bosch, 2019



AsianWire, 2019



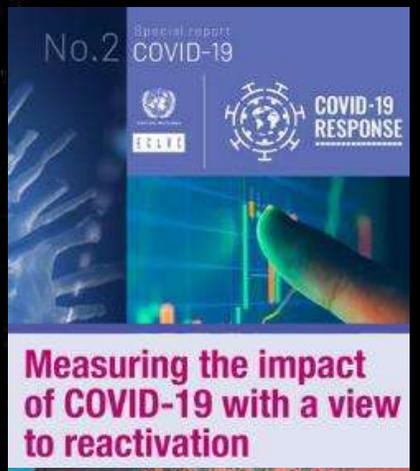
...

... a sociedade e a economia pós-COVID



Shifts in the Low Touch Economy

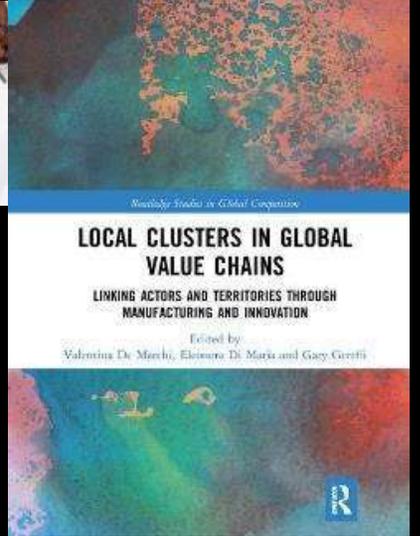
board of innovation
updated reports and insights on boardofinnovation.com/low-touch-economy



No.2 Special report COVID-19

ERTU COVID-19 RESPONSE

Measuring the impact of COVID-19 with a view to reactivation



Research Studies in Global Competition

LOCAL CLUSTERS IN GLOBAL VALUE CHAINS

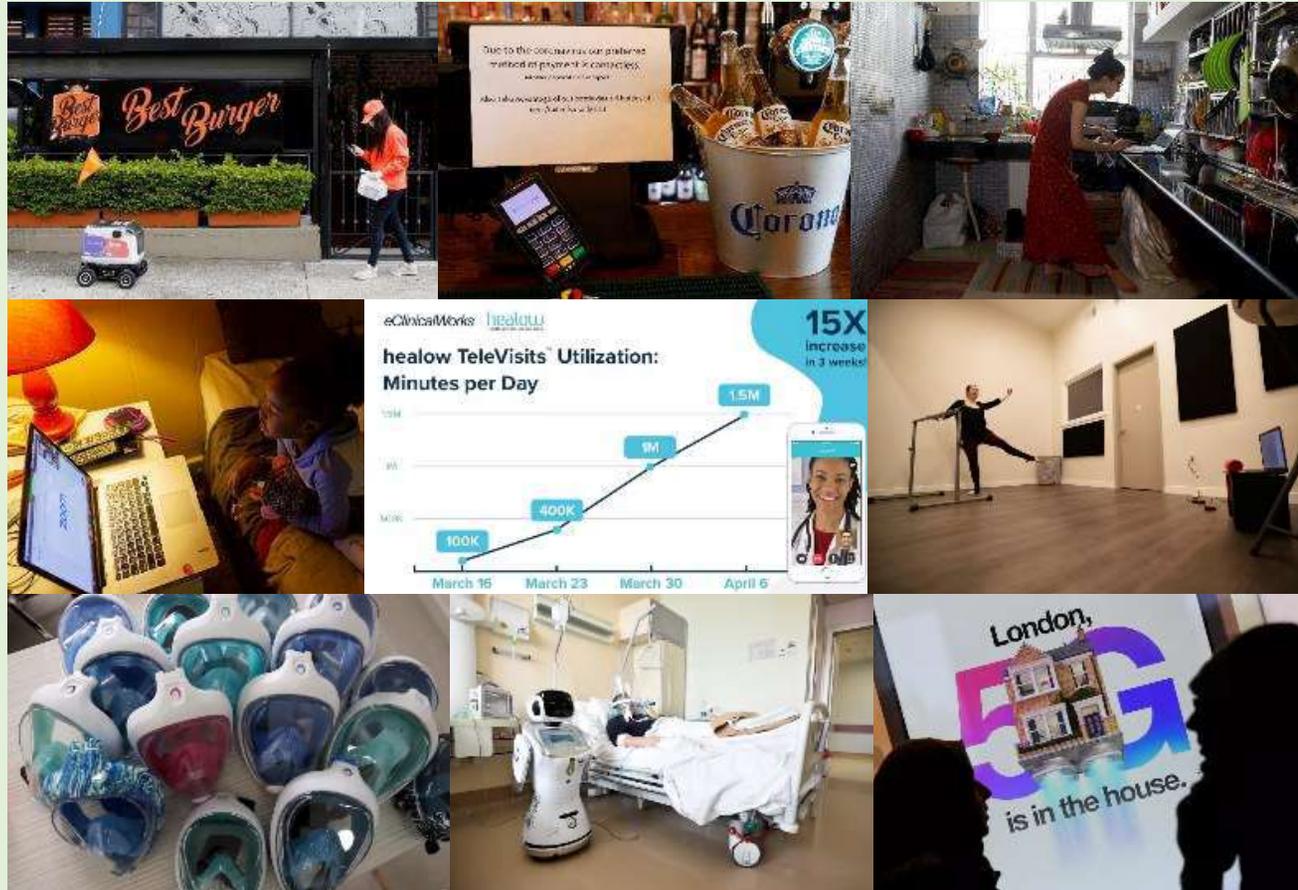
LINKING ACTORS AND TERRITORIES THROUGH MANUFACTURING AND INNOVATION

Edited by
Valentina De Marchi, Elisavira Di Marco and Gary Gereffi

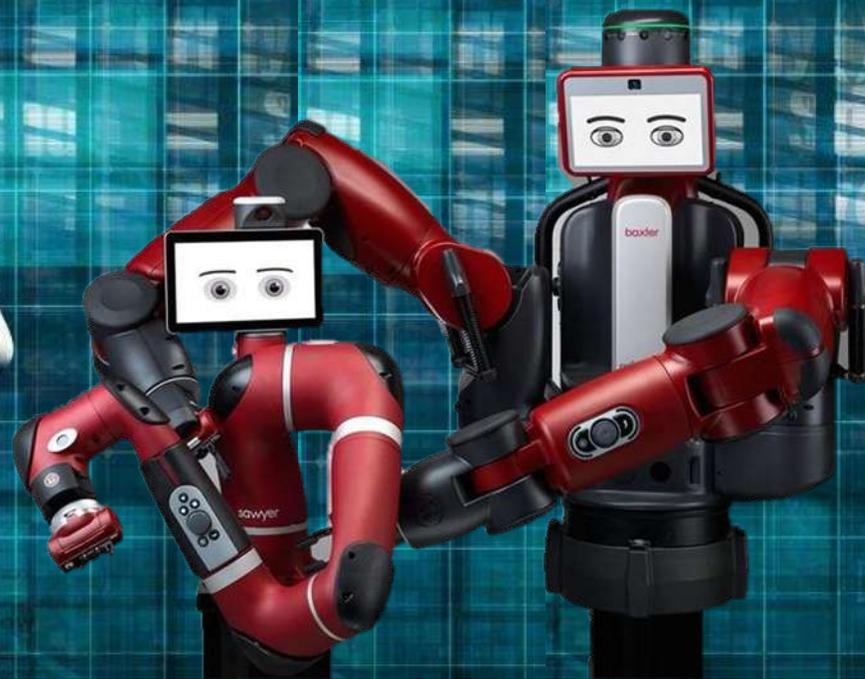
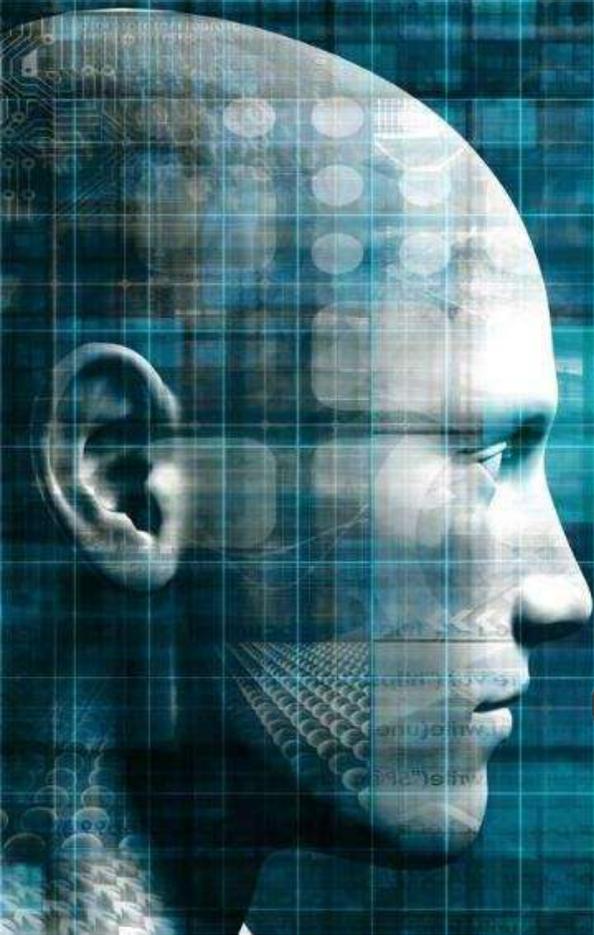
Routledge

10 technology trends to watch in the COVID-19 pandemic

- compras online
- pagamentos digitais sem contacto
- trabalho remoto
- aprendizagem a distância
- telemedicina
- entretenimento *online*
- cadeia de fornecimento 4.0
- impressão 3D / fabrico aditivo
- robótica e os drones
- 5G e demais tecnologias de informação e comunicação



novos modelos de trabalho e de emprego



conectividade ... humano-máquina

fonte: MC10 attachable computer
John A. Rogers
The University of Illinois at Urbana-Champaign

