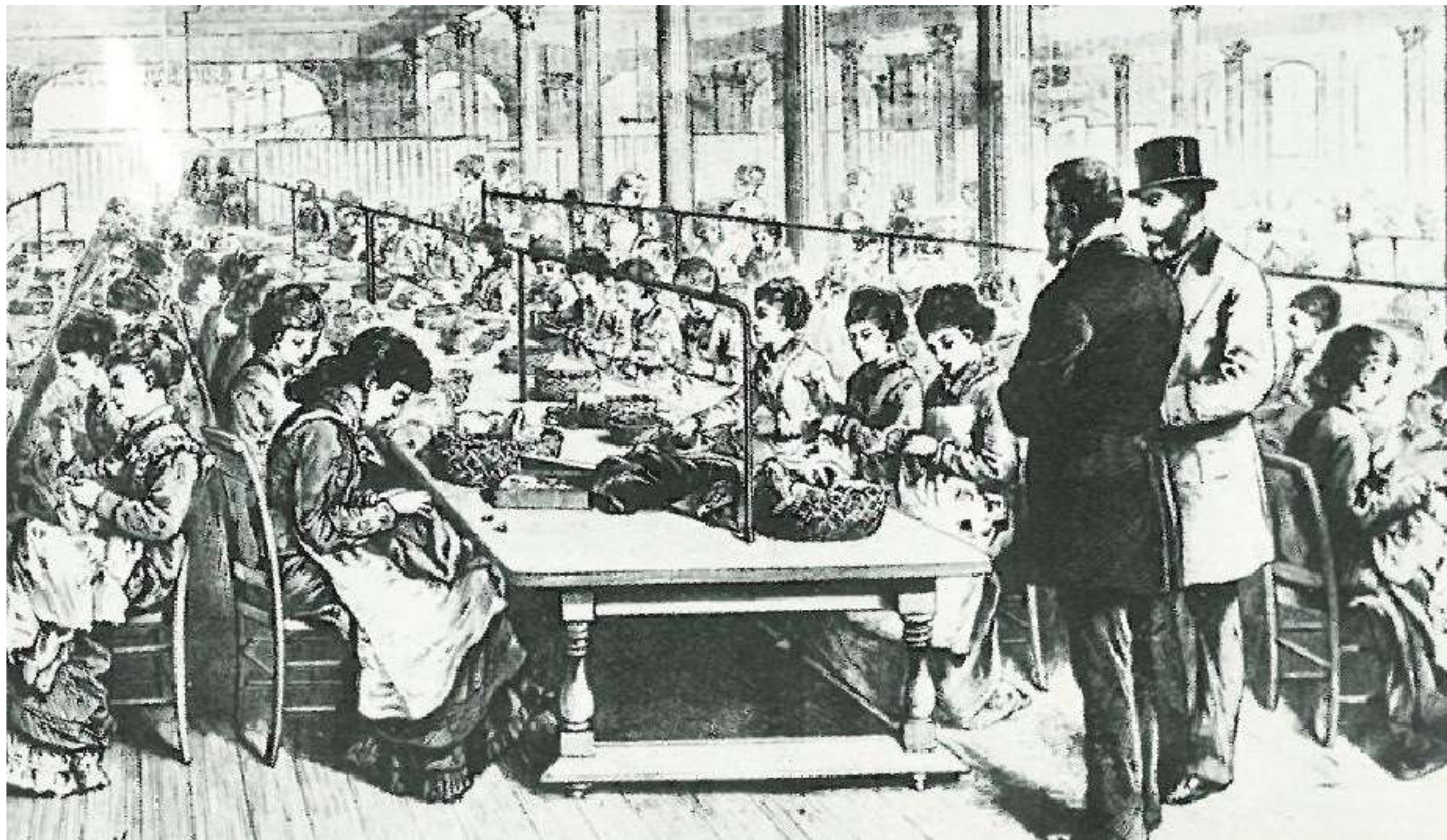


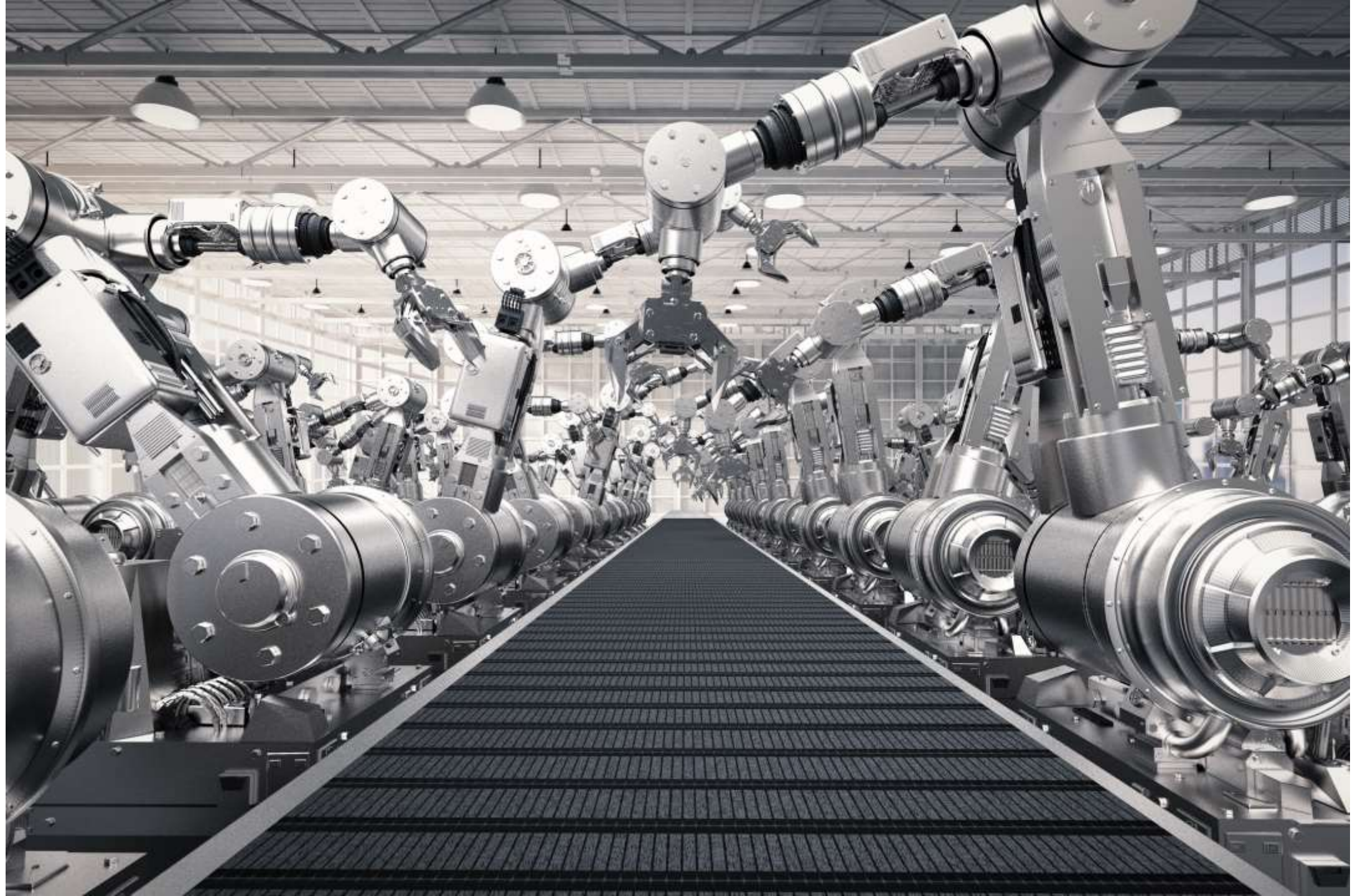
Our fast changing future

mandy@simpson.org.nz

 [mandysimpson](https://twitter.com/mandysimpson)

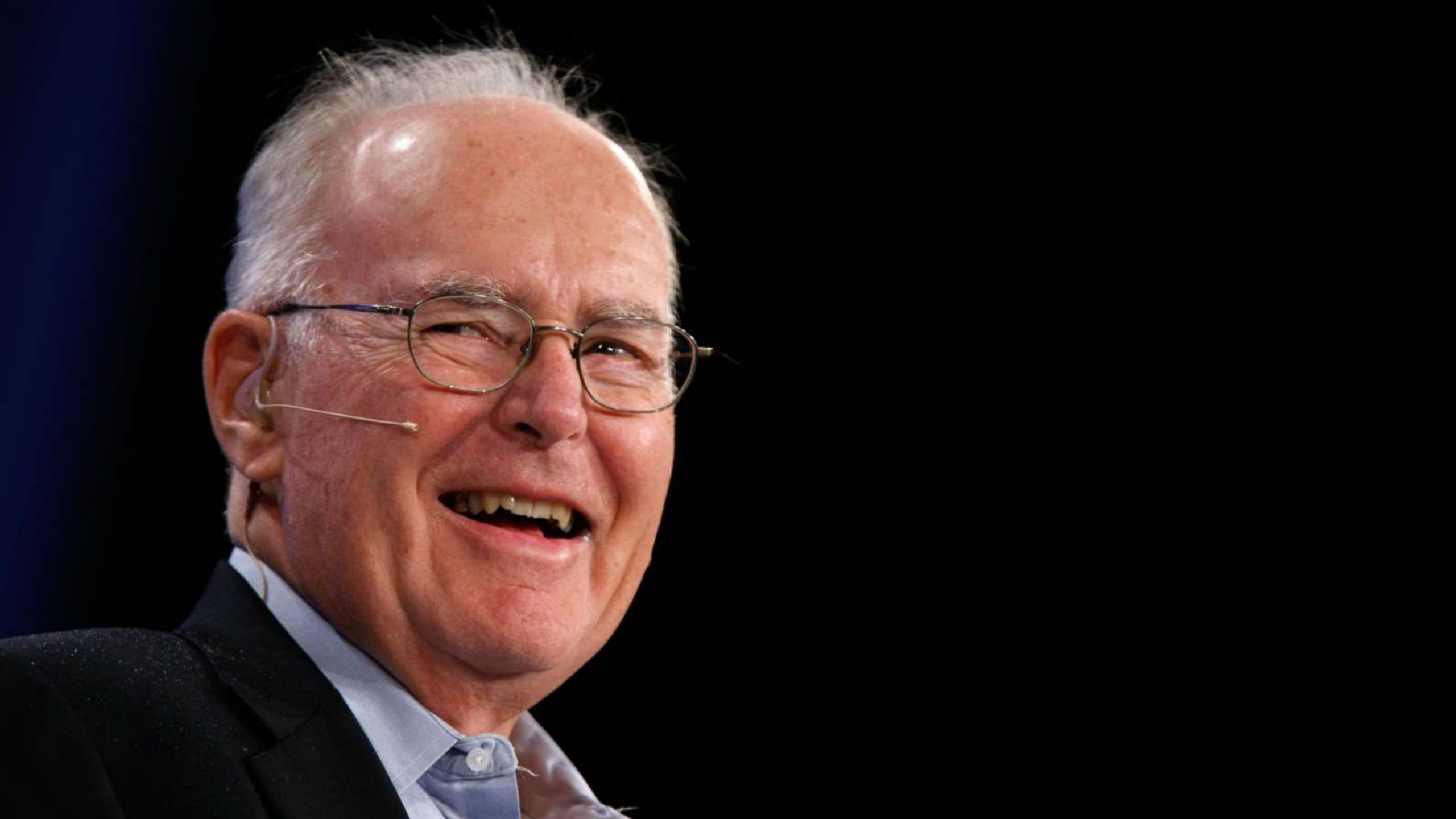








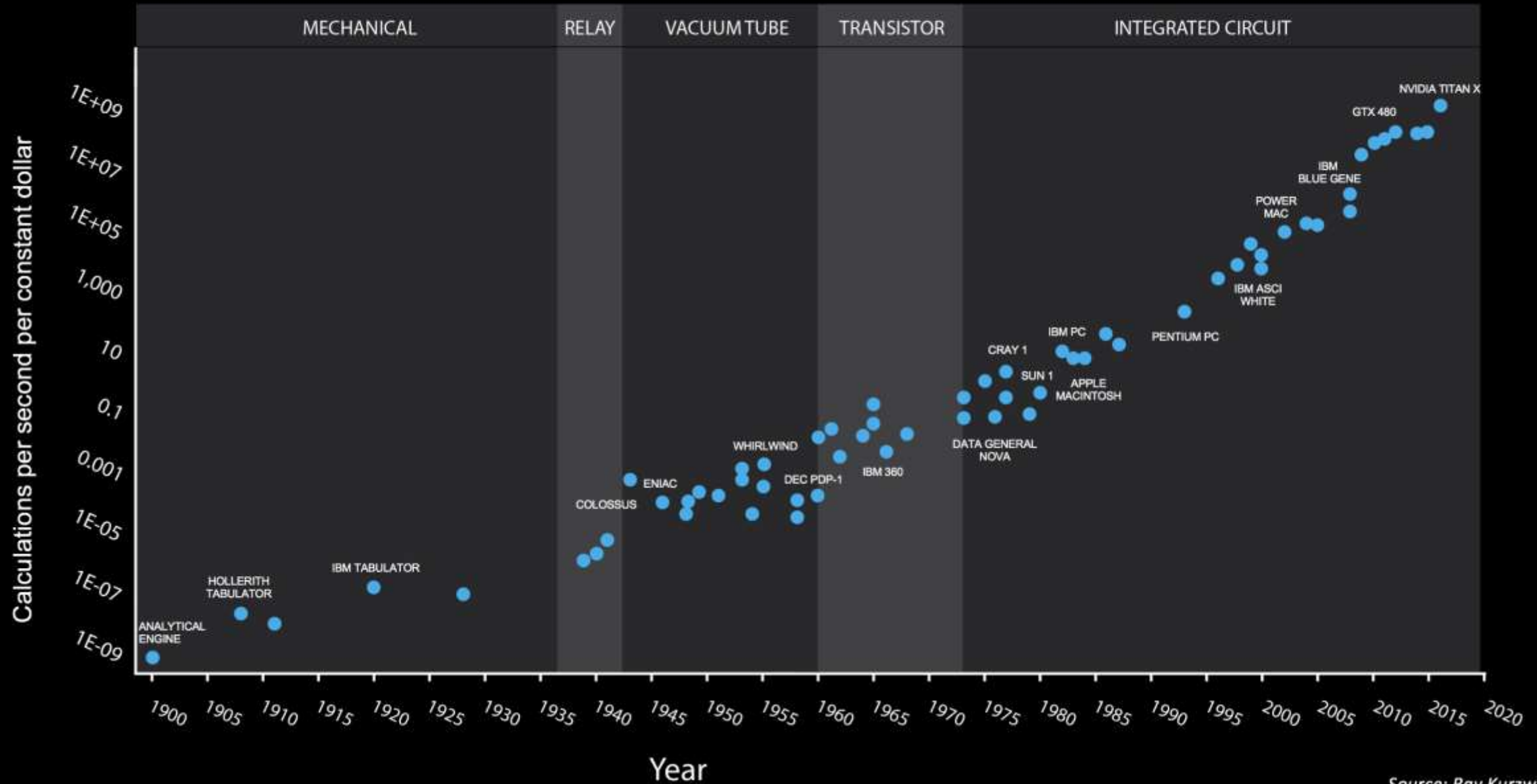






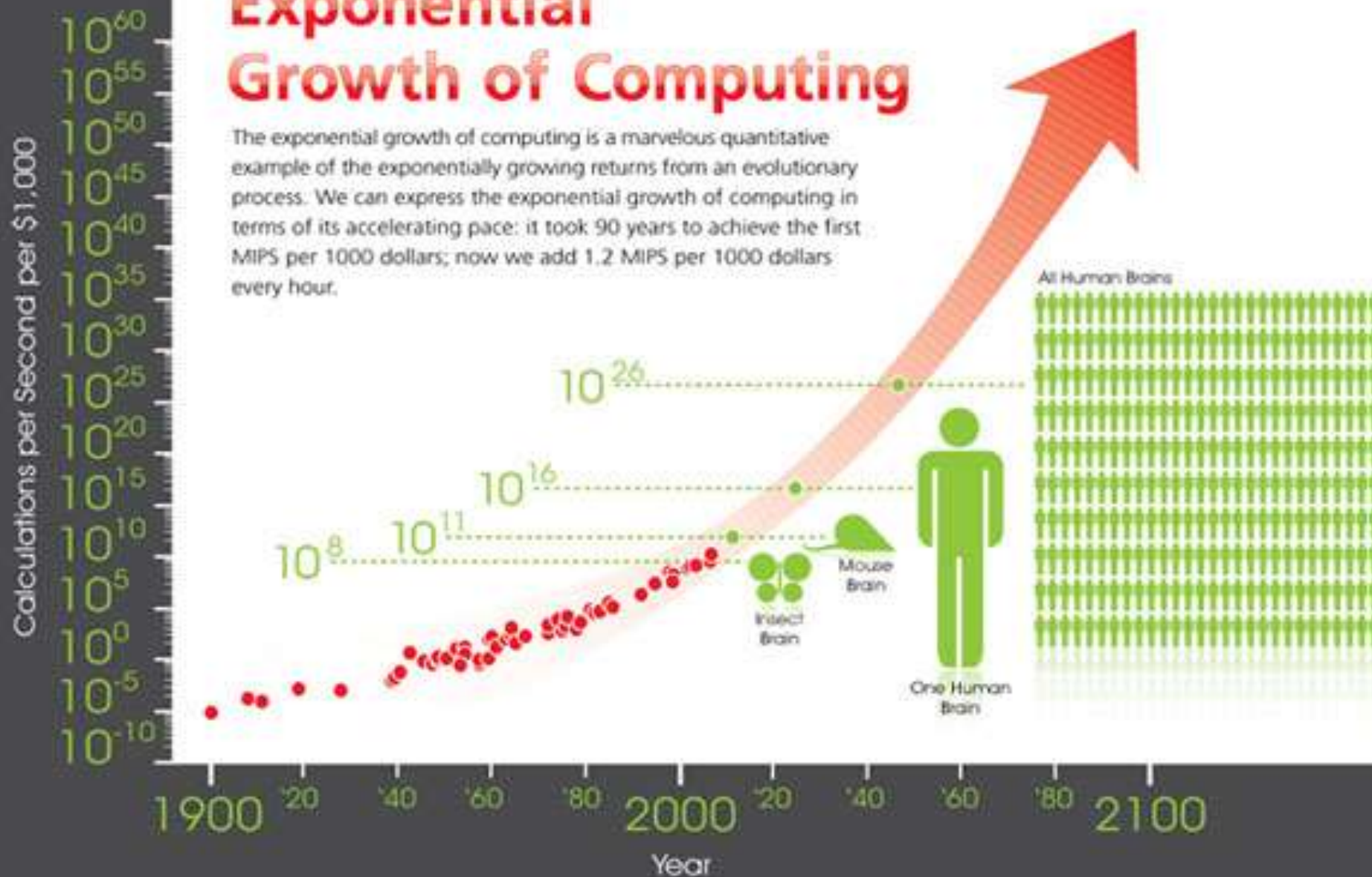


120 Years of Moore's Law



Exponential Growth of Computing

The exponential growth of computing is a marvelous quantitative example of the exponentially growing returns from an evolutionary process. We can express the exponential growth of computing in terms of its accelerating pace: it took 90 years to achieve the first MIPS per 1000 dollars; now we add 1.2 MIPS per 1000 dollars every hour.









October 31st



\$310,000



??

October 15th



\$150,000



\$164

October 20th



\$200,000



\$5,242

October 31st

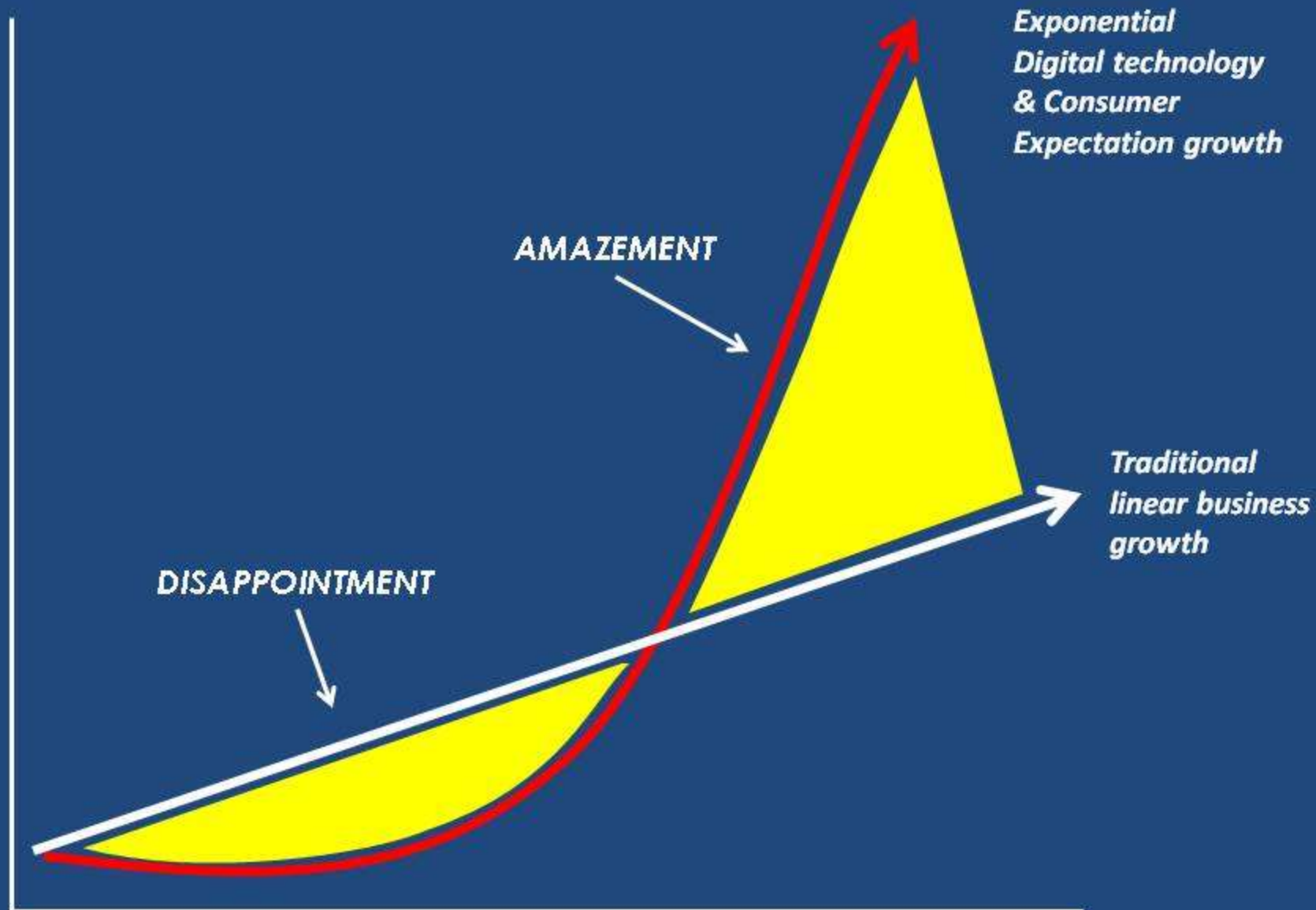


\$310,000



\$10.7m

LINEAR VS EXPONENTIAL GROWTH



October 25th



\$250,000



\$167,772

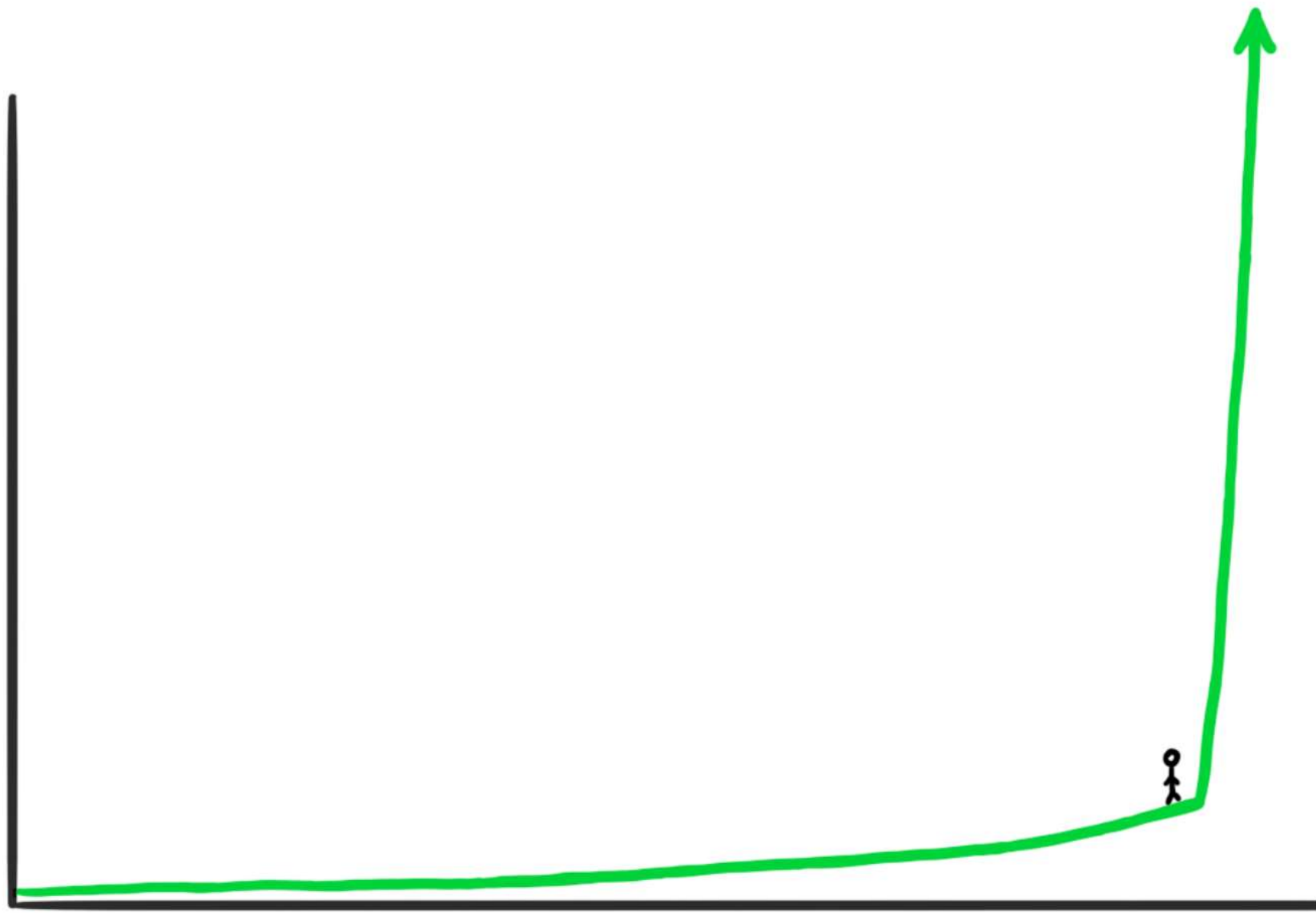


Topics

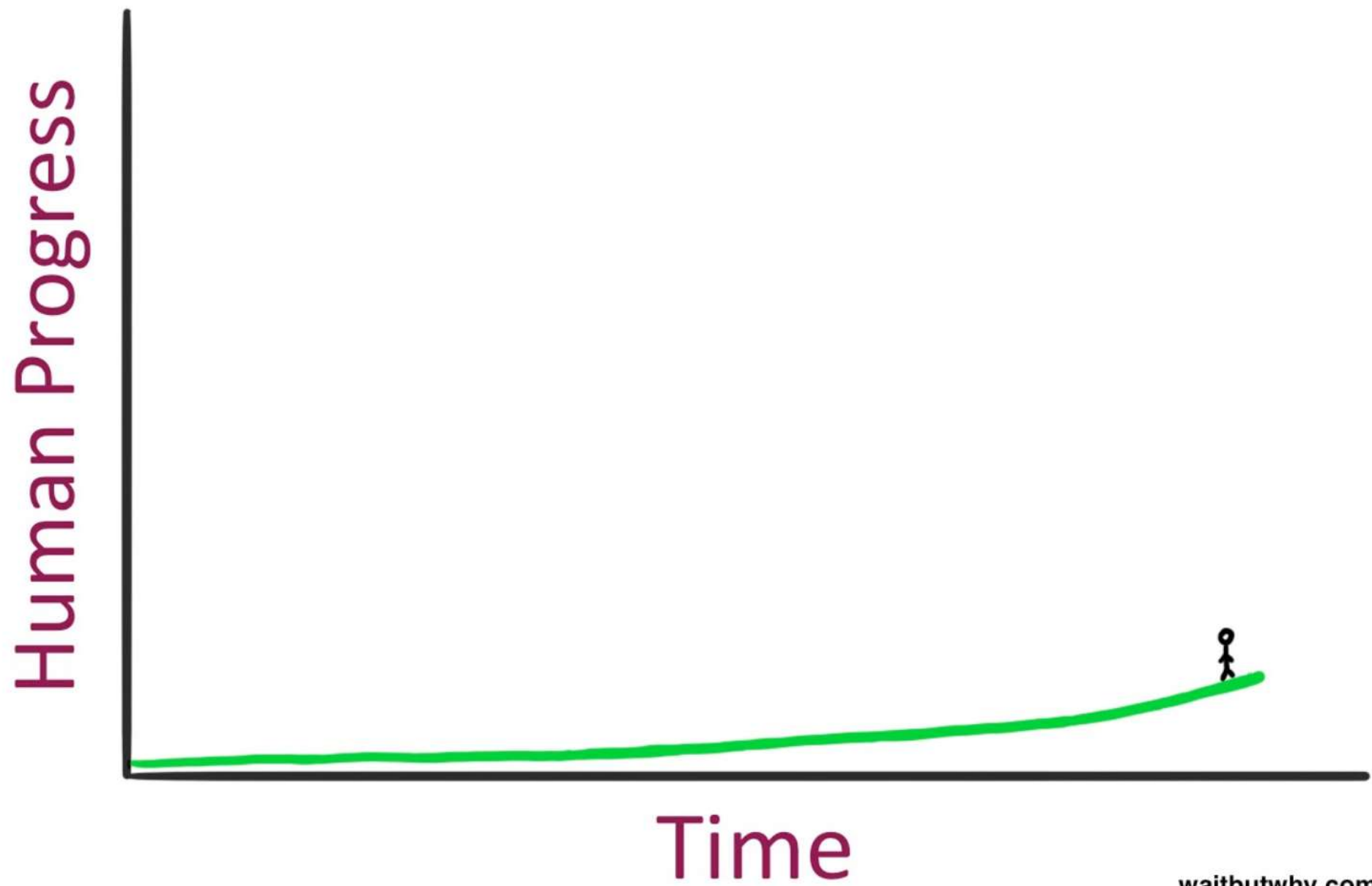
4 Billion New Minds Online: The Coming Era of Connectivity

By **Peter H. Diamandis, MD** - Jul 27, 2018  10,228

Human Progress



Time









Advanced Transport

Ford to Release a Car Without a Steering Wheel or Pedals

Volvo

IN BRIEF

- Ford plans to release a Level 4 autonomous vehicle by 2021, according to the company's CEO, Mark Fields.

SHARE



ALEX DAVIES TRANSPORTATION 01.12.18 12:01 AM

GM WILL LAUNCH ROBOCARS WITHOUT STEERING WHEELS NEXT YEAR



- Volkswagen Group of America
- Mercedes Benz
- Waymo LLC
- Delphi Automotive
- Tesla Motors
- Bosch
- Nissan
- GM Cruise LLC
- BMW
- Honda
- Ford
- Zoox, Inc.
- Drive.ai, Inc.
- Faraday & Future Inc.
- Baidu USA LLC
- Valeo North America, Inc.
- NIO USA, Inc.
- Telenav, Inc.
- NVIDIA Corporation
- AutoX Technologies Inc
- Subaru
- Udacity, Inc

- Navya Inc.
- Renovo.auto
- PlusAi Inc
- Nuro, Inc
- CarOne LLC
- Apple Inc.
- Pony.AI
- TuSimple
- Jingchi Corp
- SAIC Innovation Center, LLC
- Almotive Inc
- Aurora Innovation
- Nullmax
- Samsung Electronics
- Continental Automotive Systems Inc
- Voyage
- CYNGN, Inc
- Roadstar.Ai
- Changan Automobile
- Lyft, Inc.
- Phantom AI
- Qualcomm Technologies, Inc.

- aiPod, Inc.
- SF Motors Inc.
- Toyota Research Institute
- Apex.AI
- Intel Corp
- Ambarella Corporation
- Gatik AI. Inc.
- DiDi Research America LLC
- TORC Robotics Inc
- Boxbot Inc
- EasyMile
- Mando America Corporation
- Xmotors.ai, Inc.

Autonomous vehicle traffic accidents in California, 2014-2018

■ AV not at fault ■ AV at fault

Autonomous mode

AV MOVING



AV STOPPED



Conventional mode

AV MOVING



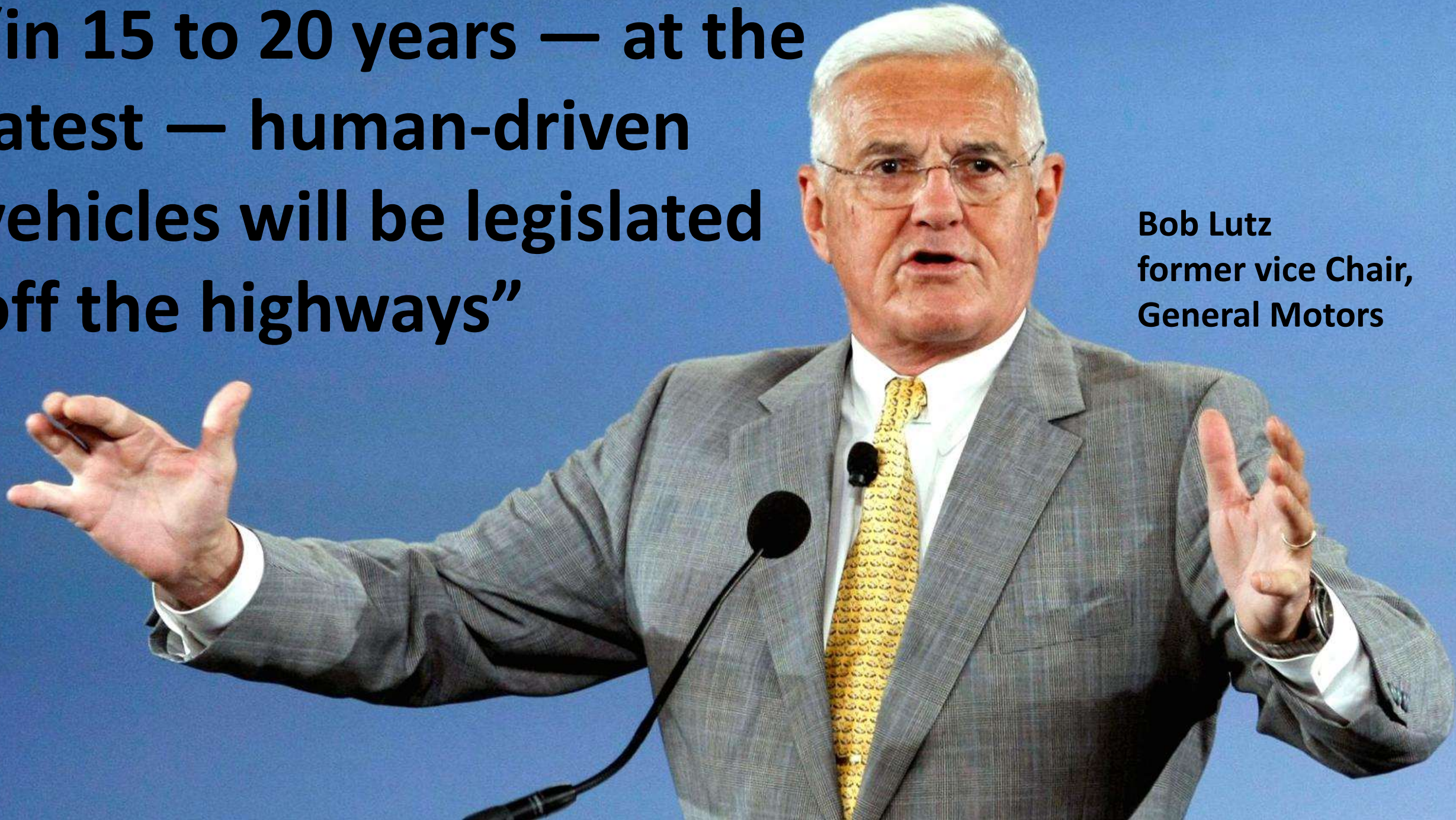
AV STOPPED



Data: [State of California Department of Motor Vehicles](#); Note: As of August 24, 2018; Icon: [Guilhem/The Noun Project](#); Chart: Andrew Witherspoon/Axios

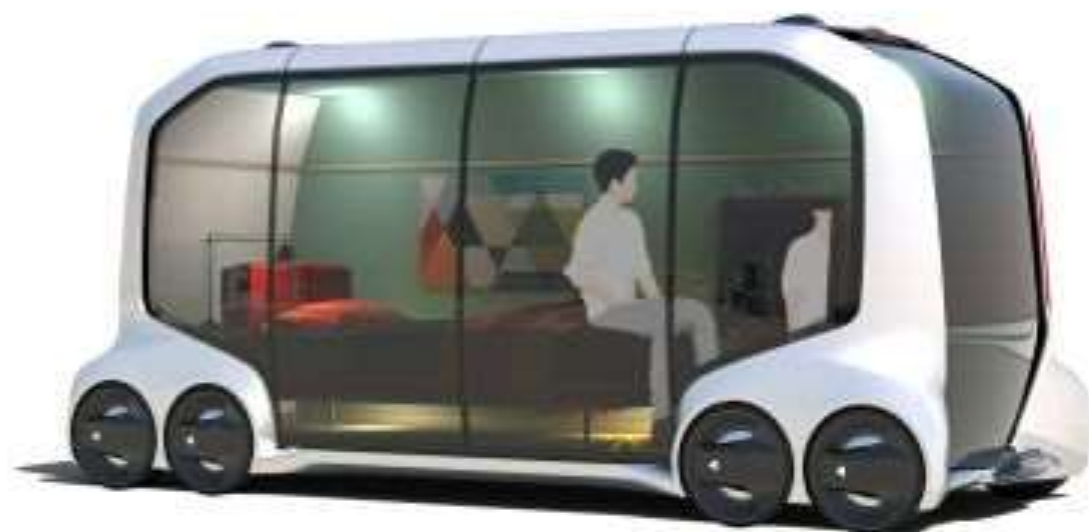
“in 15 to 20 years — at the latest — human-driven vehicles will be legislated off the highways”

Bob Lutz
former vice Chair,
General Motors



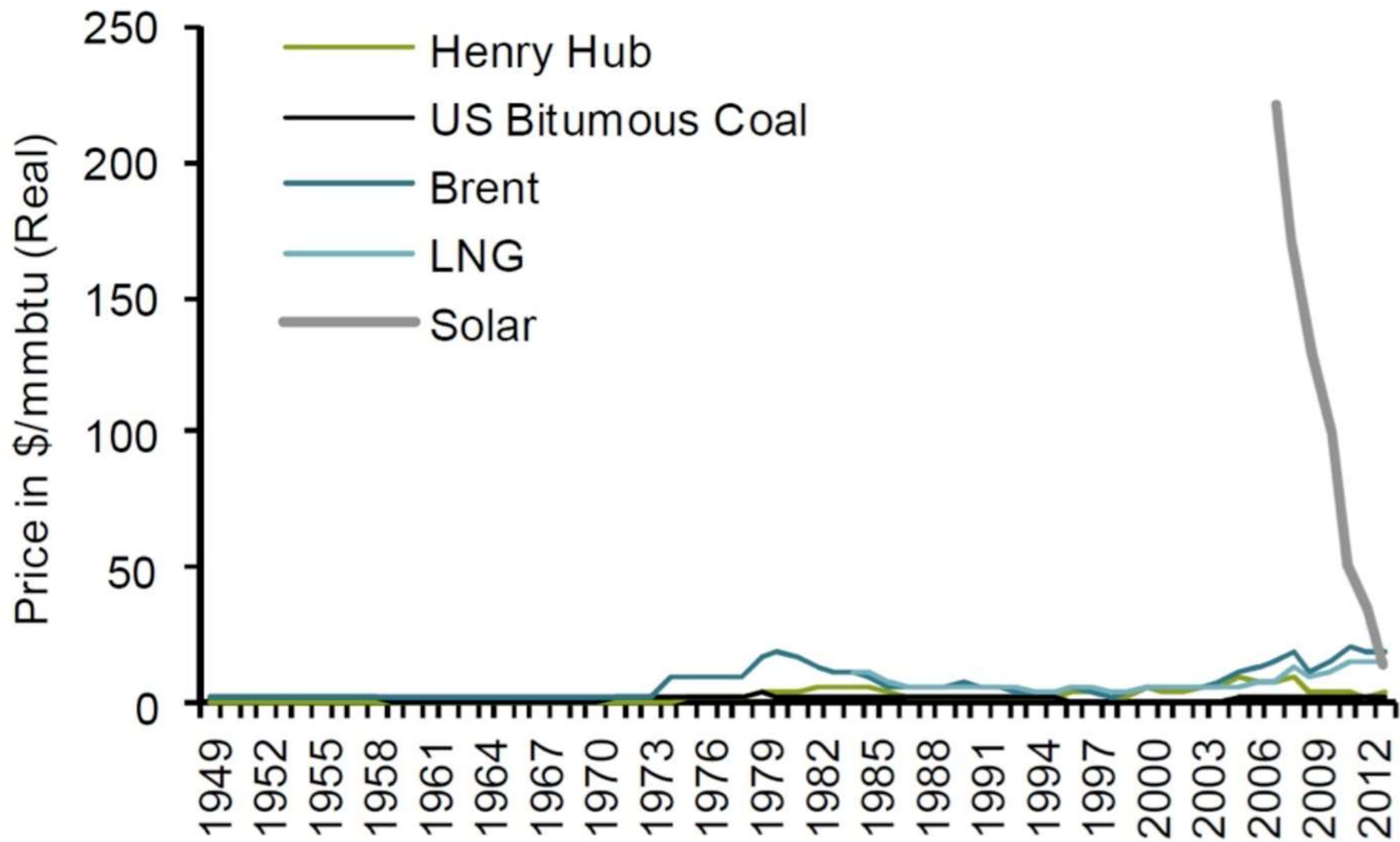












5-6 cents / kwh





Mexico: 3.5 cents
per kwh



Chile: 2.91 cents
per kwh



Dubai: 1.3GW
2.42 cents / kwh



A photograph of a wind farm in Mexico. Several large white wind turbines are visible against a clear blue sky. In the foreground, there is a field of golden-brown crops, likely corn, with some small animals grazing. The background shows distant mountains and a line of trees.

Mexico: **1.71**
cents per kwh

In Colorado, a glimpse of renewable energy's insanely cheap future

Even with storage, new renewables beat existing coal.

By David Roberts | @drvox | david@vox.com | Jan 16, 2018, 2:00pm EST



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SAUDI ARABIA TO CREATE THE LARGEST SOLAR POWER PLANT IN THE WORLD

Posted: Apr 10 2018, 11:22am CDT | by Scott Huntington, Updated: Apr 10 2018, 1:09pm CDT, in [News](#) | [Technology News](#)



Image: Tribune



Featured News



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[Oculus Go Versus Lenovo Mirage Solo: Which Stand-alone VR Headset Is Best?](#)



[Lenovo Mirage Solo Is Up for Pre-order on Amazon](#)

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China has abandoned 103 coal power plants. Here's what else is changing



Environment

India cancels plans for huge coal power stations as solar energy prices hit record low

'India's solar tariffs have literally been free falling in recent months'

Ian Johnston Environment Correspondent | @montaukian | Tuesday 23 May 2017 15:42 BST | 98 comments



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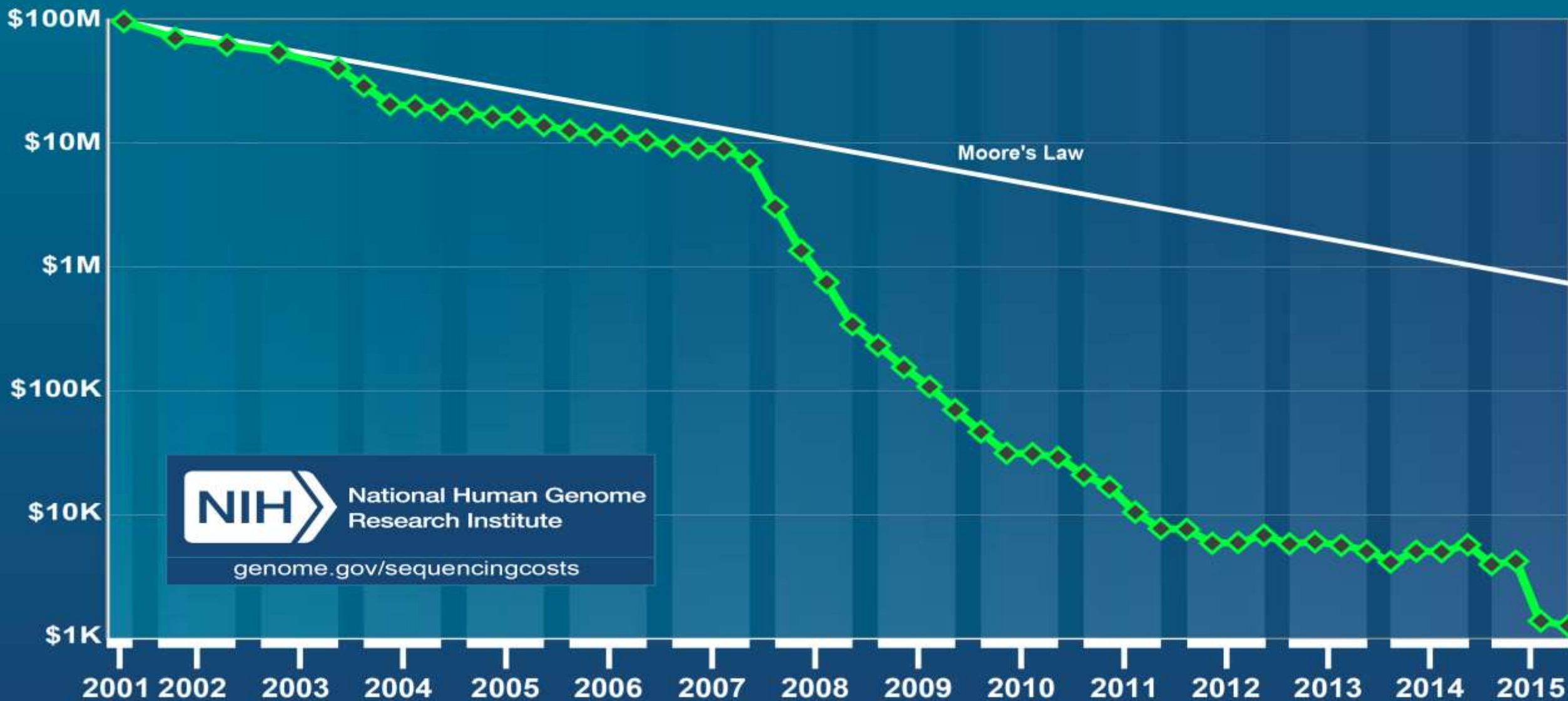


The Stone Age didn't end for lack of stone,
and the oil age will end long before
the world runs out of oil.



- *Sheik Ahmed Zaki Yamani*

Cost per Genome





Boom in human gene editing as 20 CRISPR trials gear up

A pioneering CRISPR trial in China will be the first to try editing the genomes of cells inside the body, in an effort to eliminate cancer-causing HPV virus







World-first holographic doctor launched in Perth

Cathy O'Leary, Medical Editor

🕒 Tuesday, 3 October 2017 2:20AM





This DIY Tech Could Lead to \$100 Ultrasound Machines

UBC

by Kristin Houser

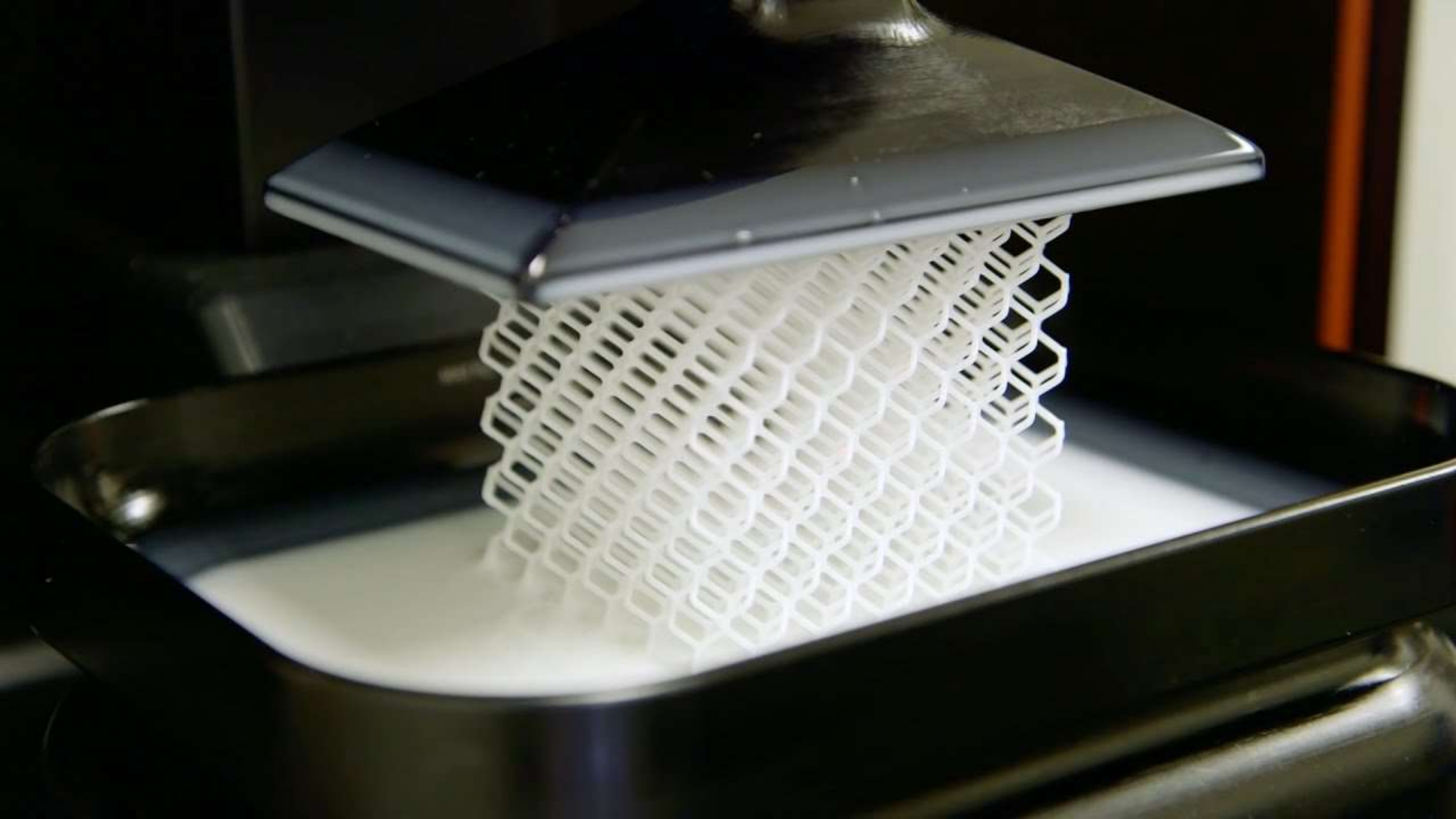
September 12, 2018

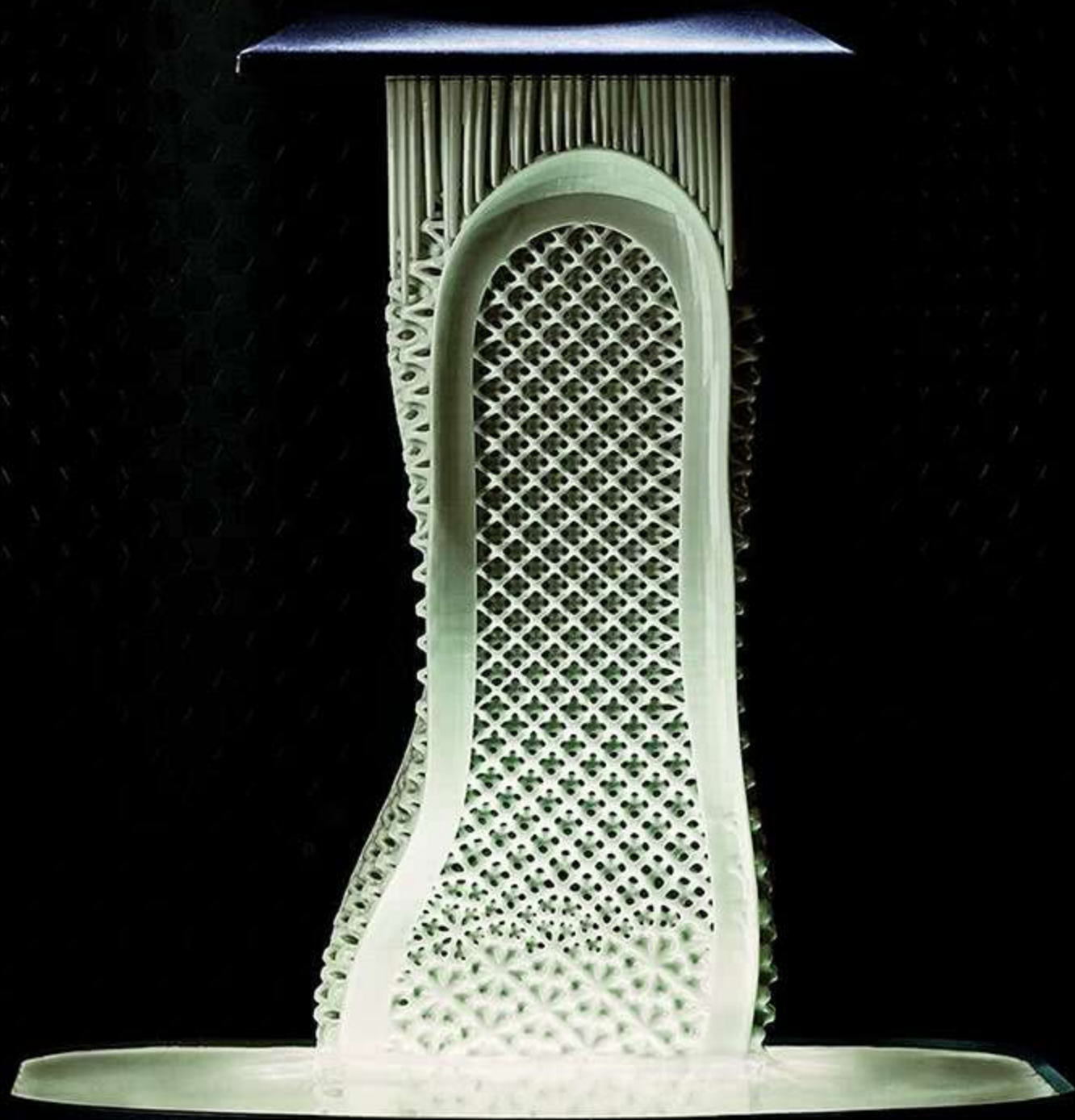
Health & Medicine

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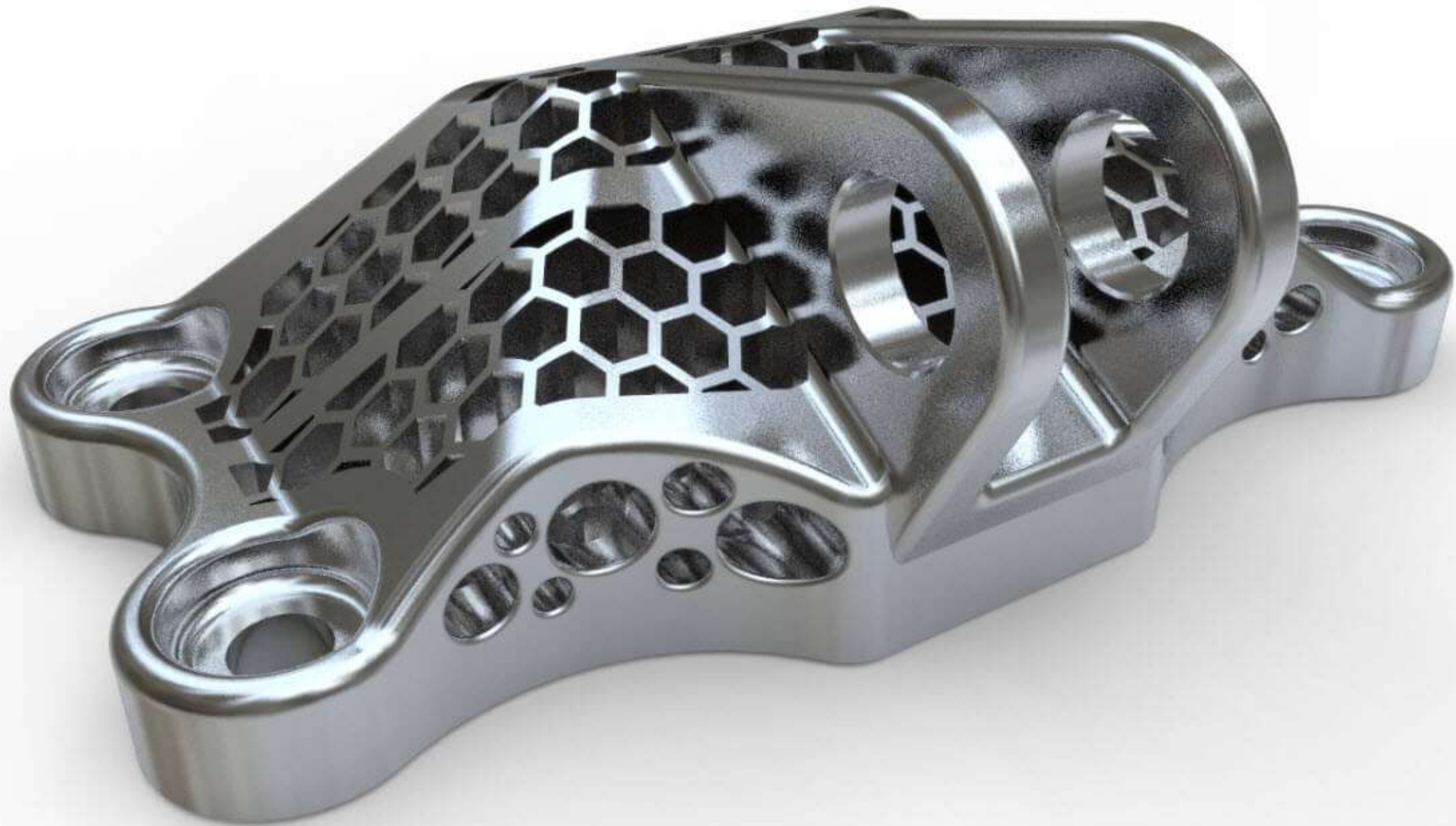








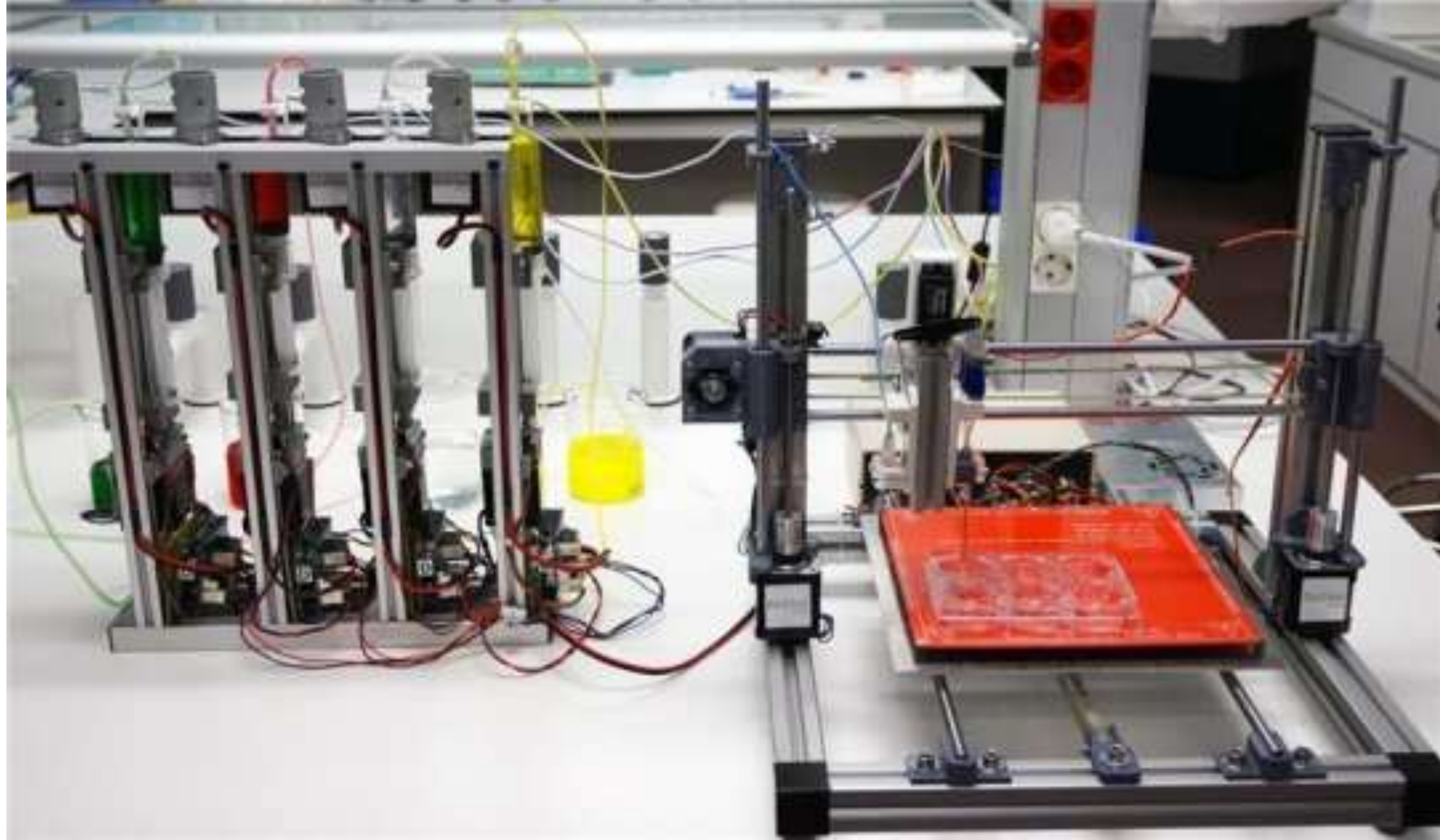
Carbon 3D







○ RUTHERFORD ENGINE







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300g

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SOY
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LIGHTER


VEGAN


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PREMIUM GLUTEN FREE





MEMPHIS
M E A T S







Bill Gates and Richard Branson Back Startup That Grows 'Clean Meat'

By **Shruti Singh**

August 24, 2017, 4:01 AM GMT+12 *Updated on* August 24, 2017, 4:00 PM GMT+12

-
- Memphis Meats produces beef, chicken from animal cells
 - Branson sees all meat 'clean' or plant-based in 30 years
-



[News](#) › [World](#) › [Asia](#)

China signs \$300m deal to buy lab-grown meat from Israel in move welcomed by vegans

For many environmental and animal rights groups, lab meat is seen as a positive move away from the slaughter of billions of animals

[Rachel Roberts](#) | Saturday 16 September 2017 17:32 BST |  48 [comments](#)



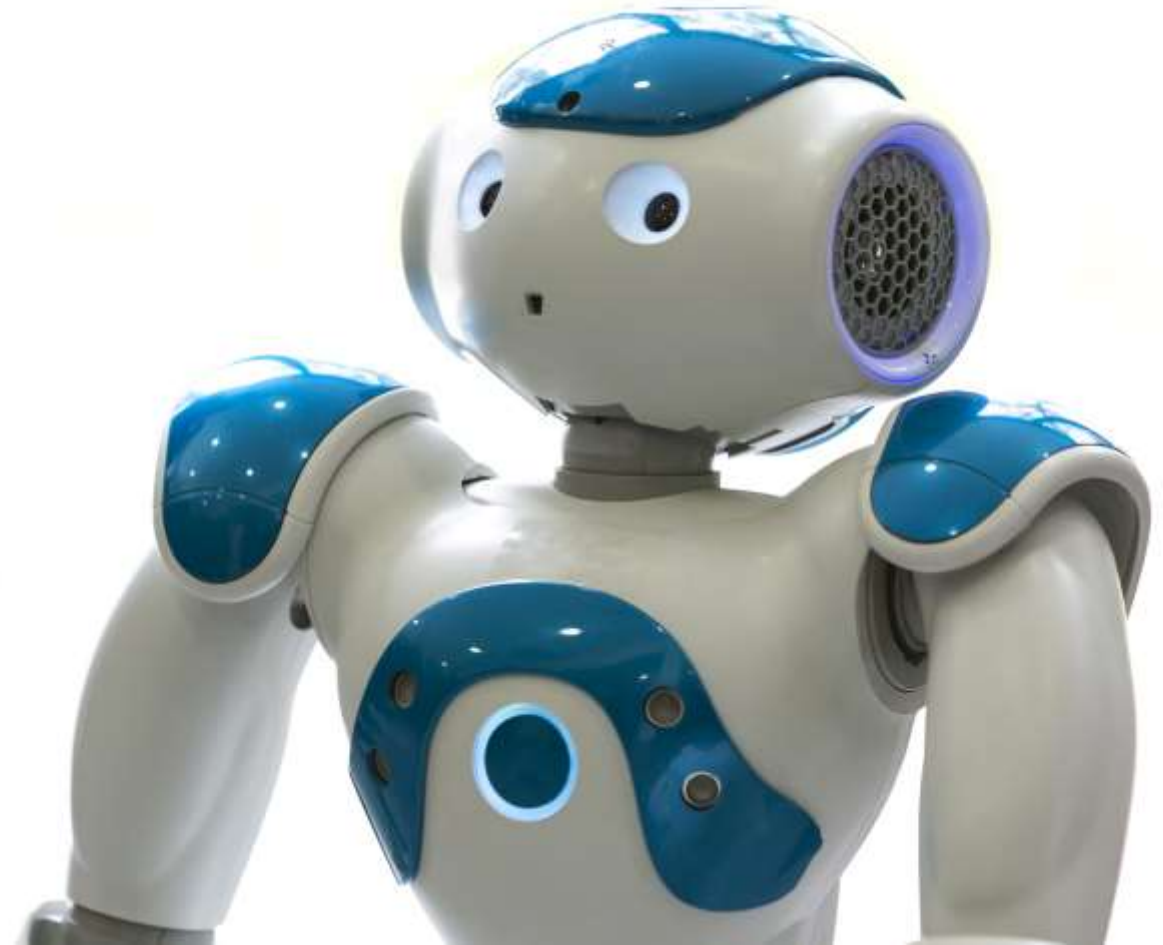
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So what?



“What is something that you believed to be true for a long time until you found out you were wrong?”

FREAKONOMICS

**A ROGUE ECONOMIST EXPLORES
THE HIDDEN SIDE OF EVERYTHING**

“Prepare to be dazzled.”

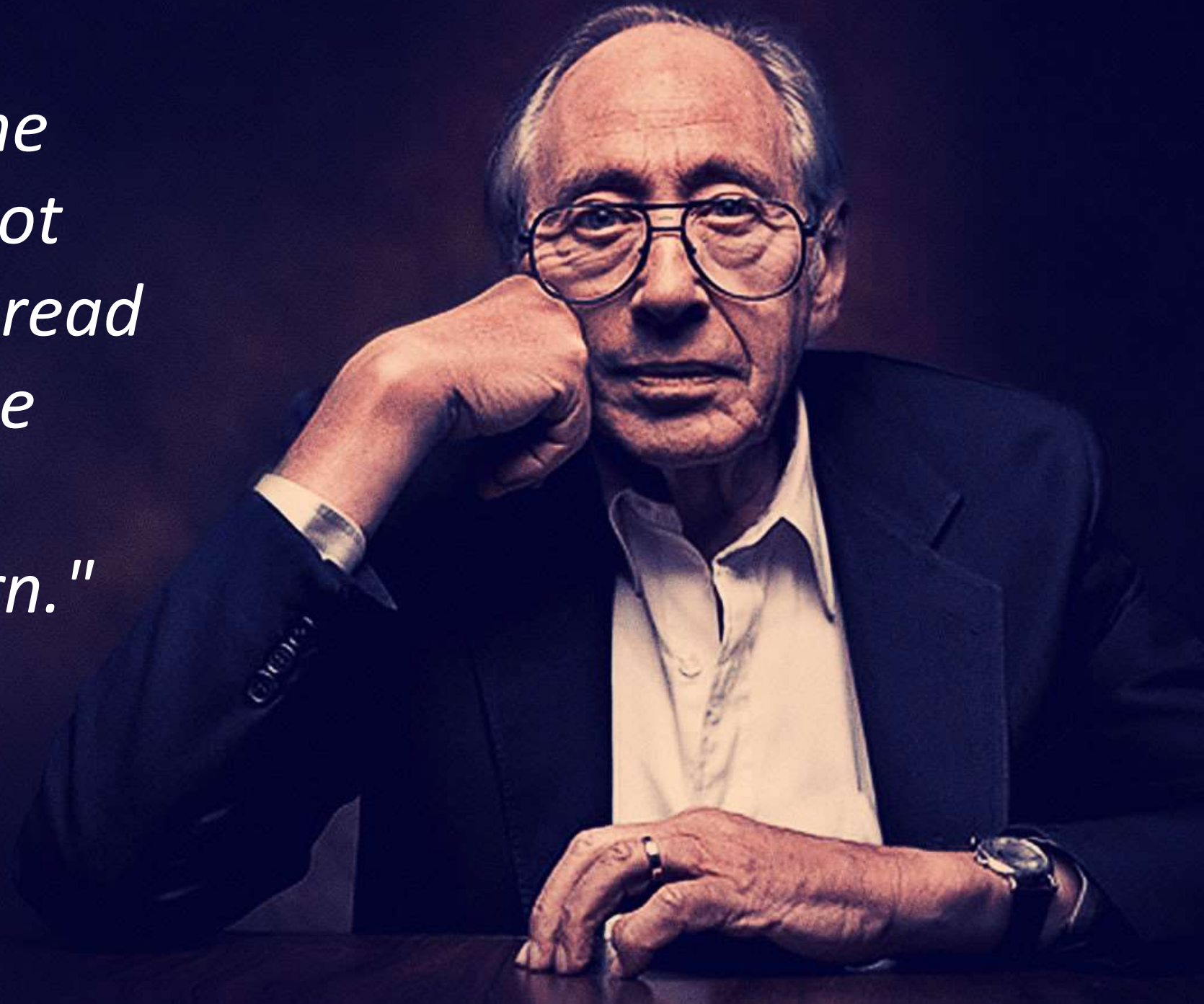
— Malcolm Gladwell, author of *The Tipping Point* and *Blink*



STEVEN D. LEVITT

AND STEPHEN J. DUBNER

*"The illiterate of the
21st Century are not
those who cannot read
and write but those
who cannot learn,
unlearn and relearn."
— Alvin Toffler*





Thank you!

mandy@simpson.org.nz

 [mandysimpson](#)