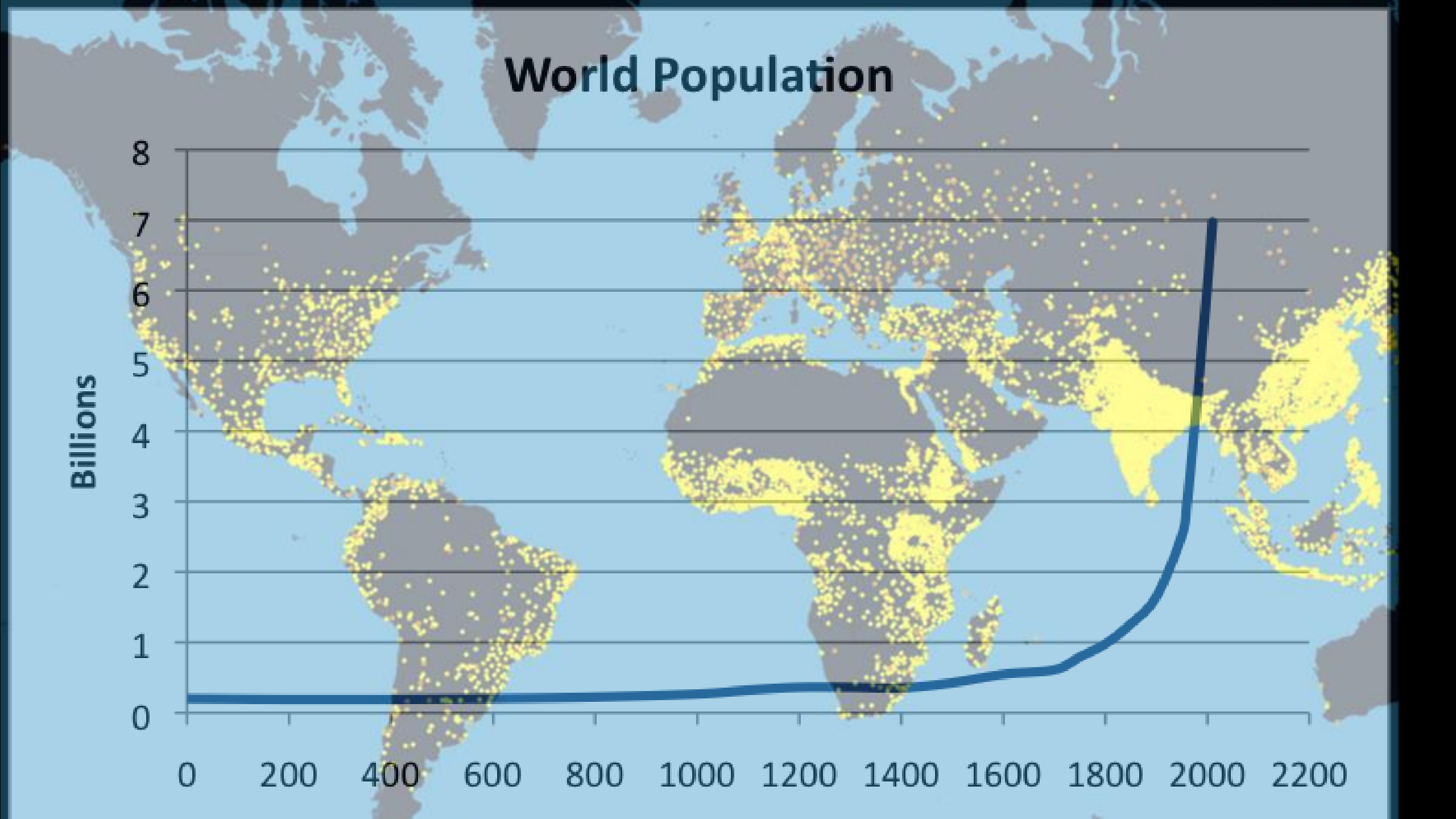
XXII SEMINARIO INTERNACIONAL

LAS NUEVAS TECNOLOGÍAS INCORPORADAS AL MUND
DE LAS MICROFINANZAS Y EL DESARROLLO SOCIAL

ruta n
MEDELLÍN
CENTRO DE INNOVACIÓN Y NEGOCIOS

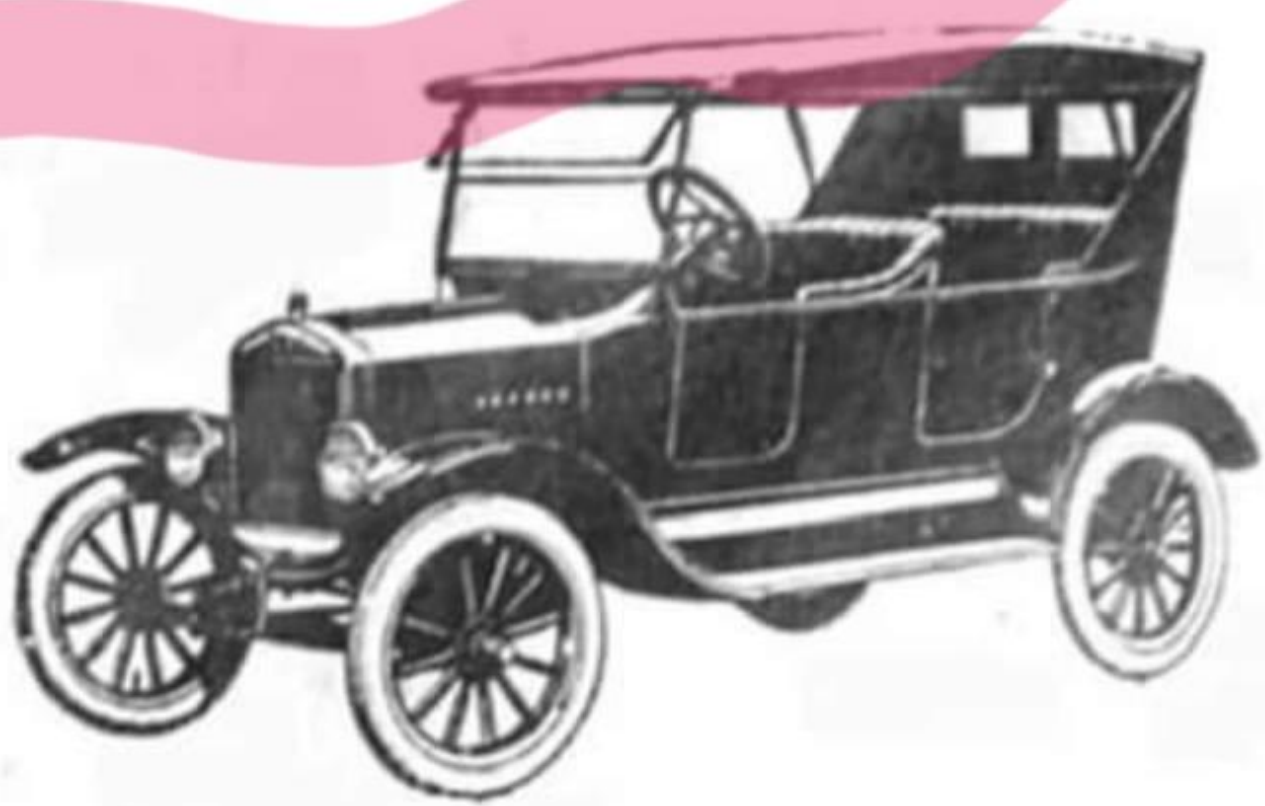
@eecheverri


World Population
Billions
8
7
6
5
4
3
2
1
0
0
200
400
600
800
1000
1200
1400
1600
1800
2000
2200

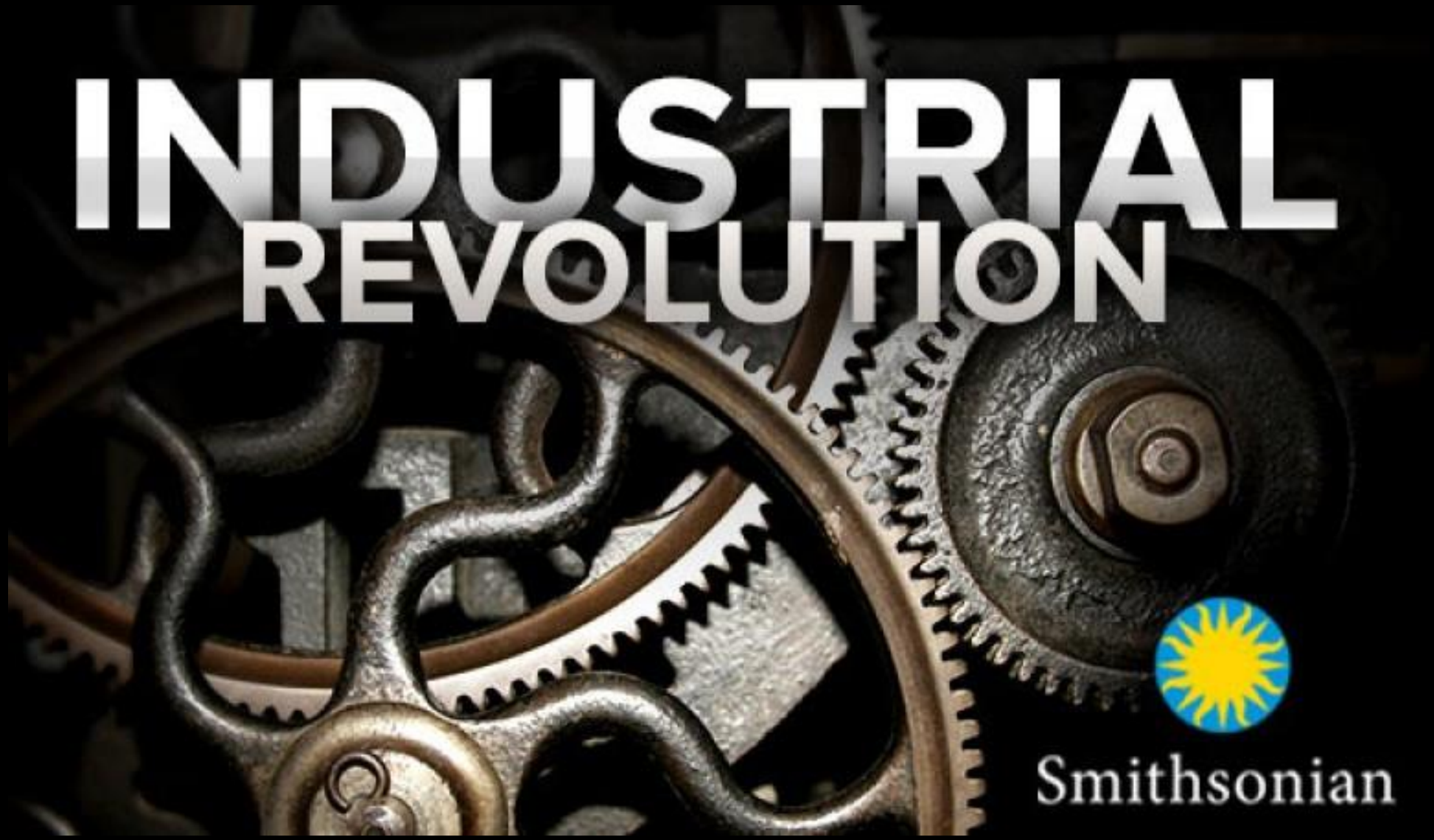
12 HORAS DE MEDELLIN A RIONEGRO EN UN AUTOMOVIL "FORD"

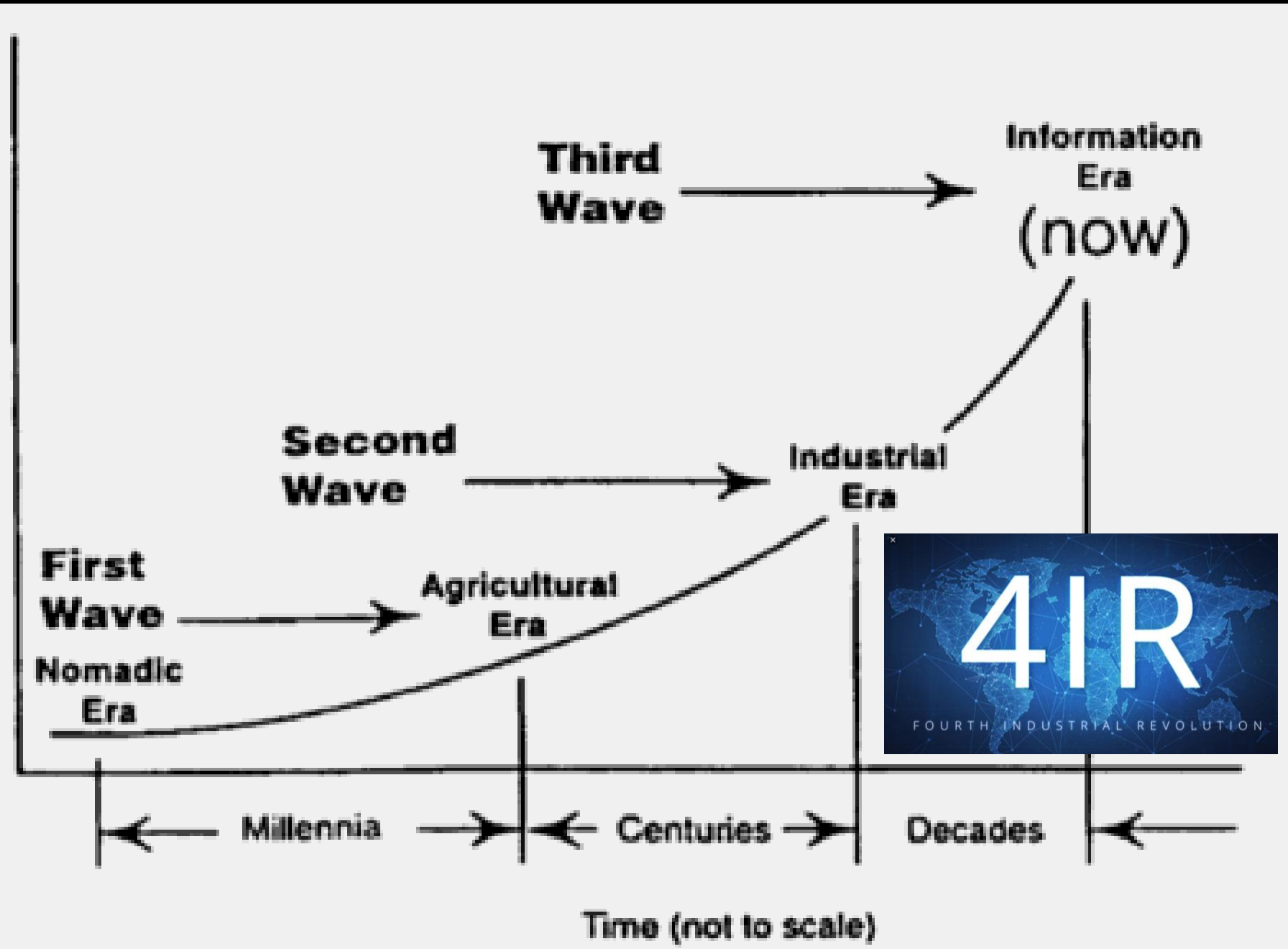
Fameso record conseguido por los señores Luis E. Cabra y Félix Quintero, el 12 de mayo de 1925. Salidos de Medellín a las 7 de la mañana, estuvieron en Rionegro a las 7 de la noche del mismo día.

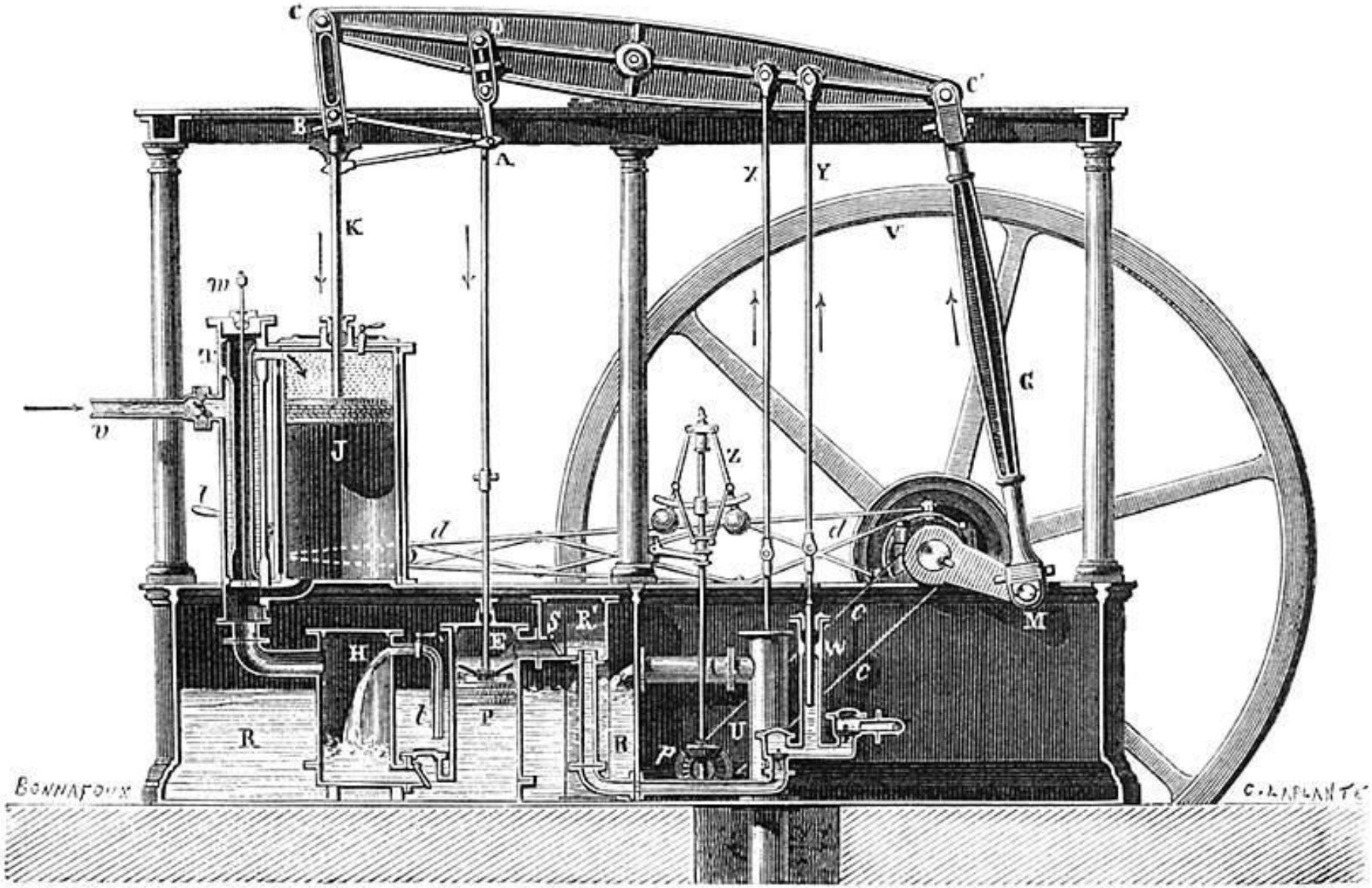
RUTA: Medellín, Santa Elena, Salazar, Rionegro.



Los documentos de estos dos records están a la orden del público en nuestras oficinas.


INDUSTRIAL
REVOLUTION
Smithsonian


Third Wave
Information Era
(now)
Second Wave
Industrial Era
First Wave
Agricultural Era
Nomadic Era
4IR
FOURTH INDUSTRIAL REVOLUTION
Millennia
Centuries
Decades
Time (not to scale)



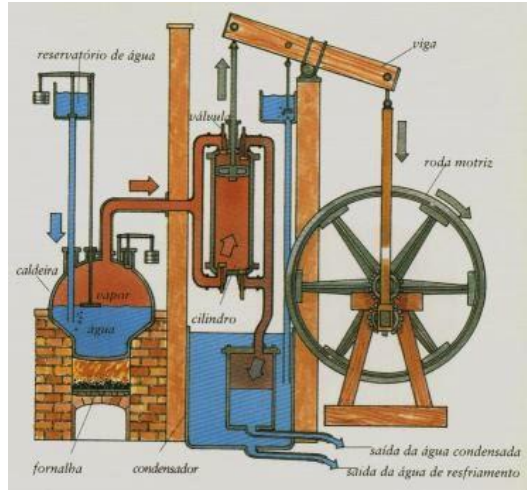
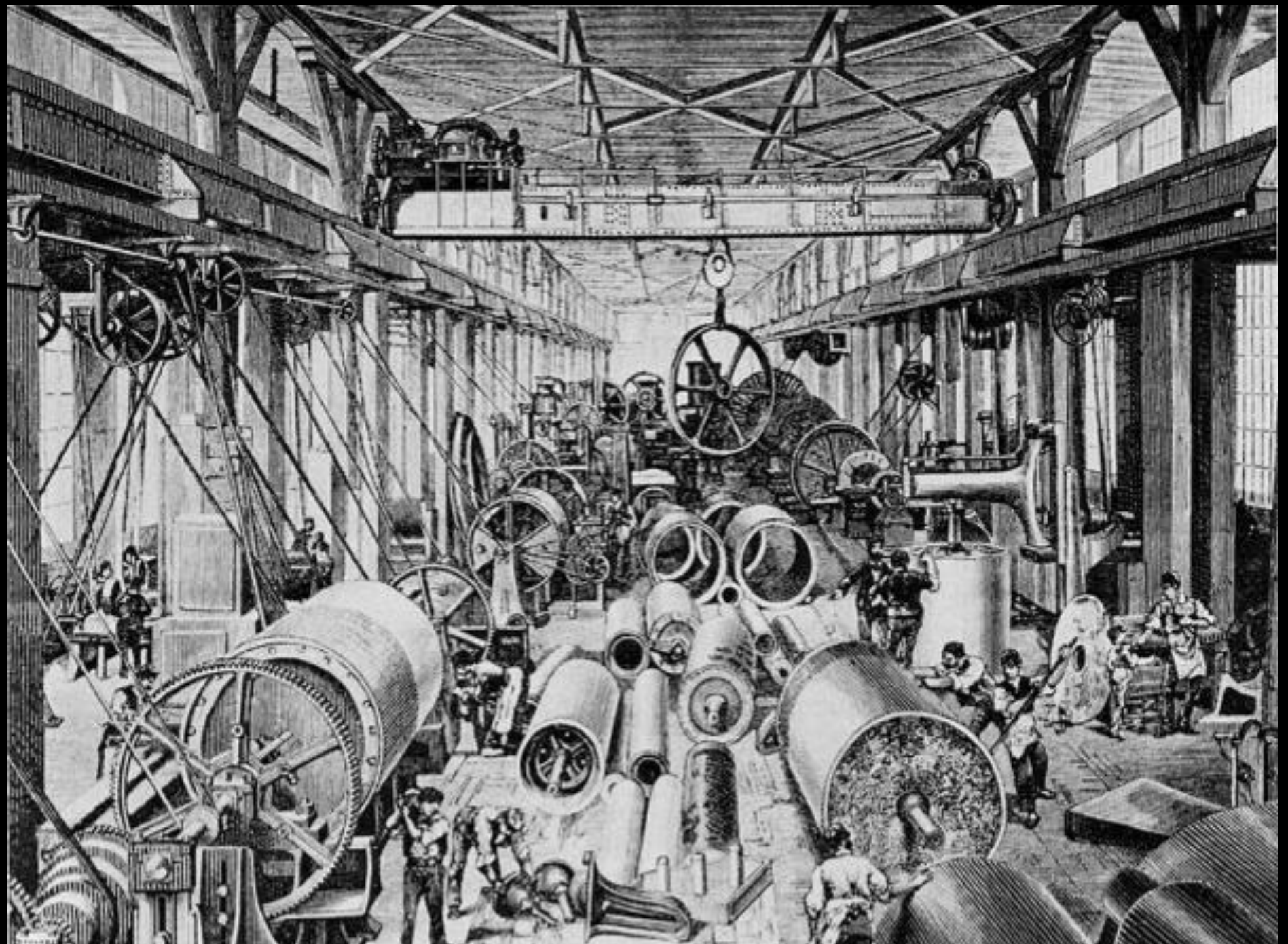
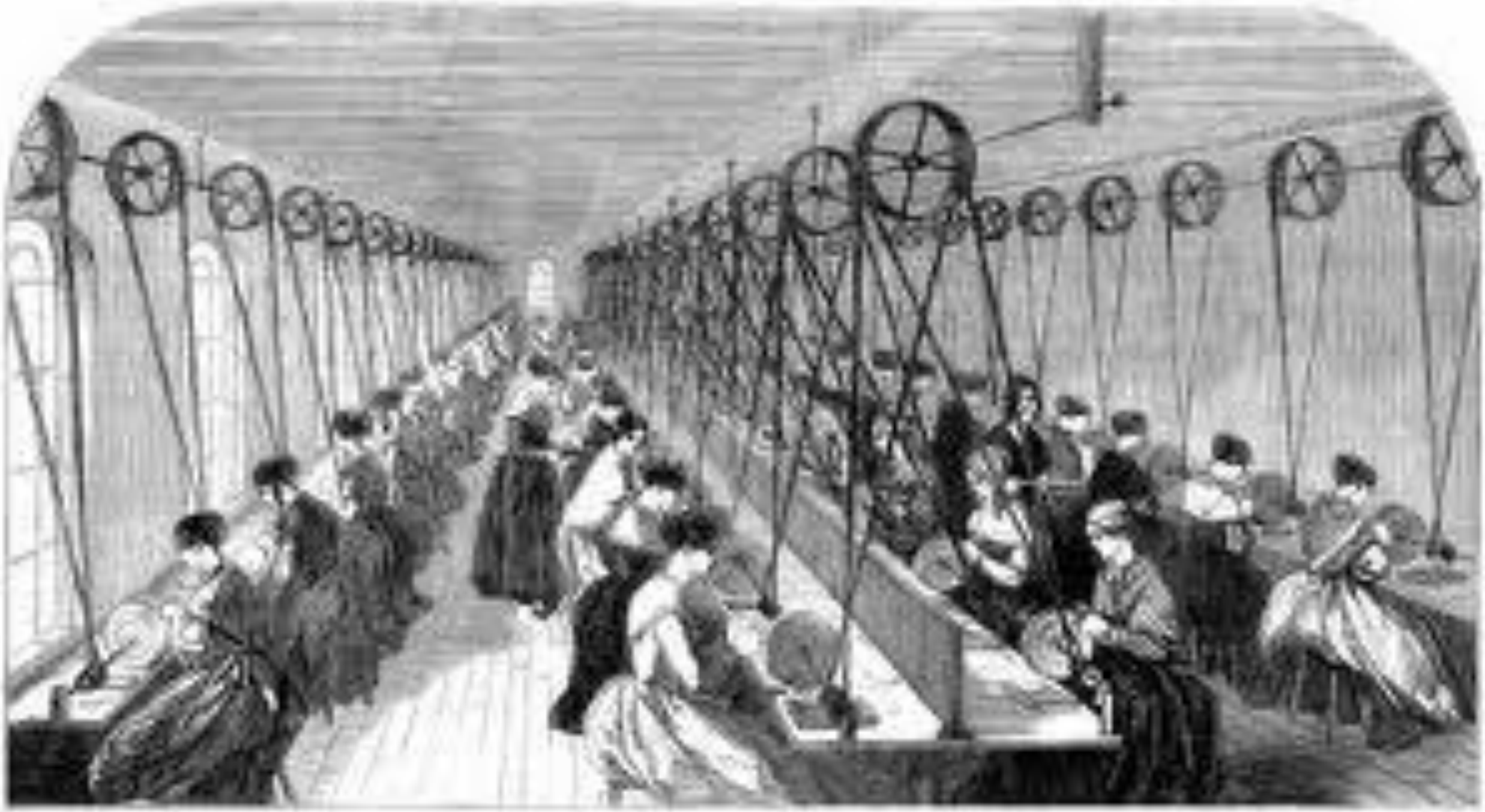


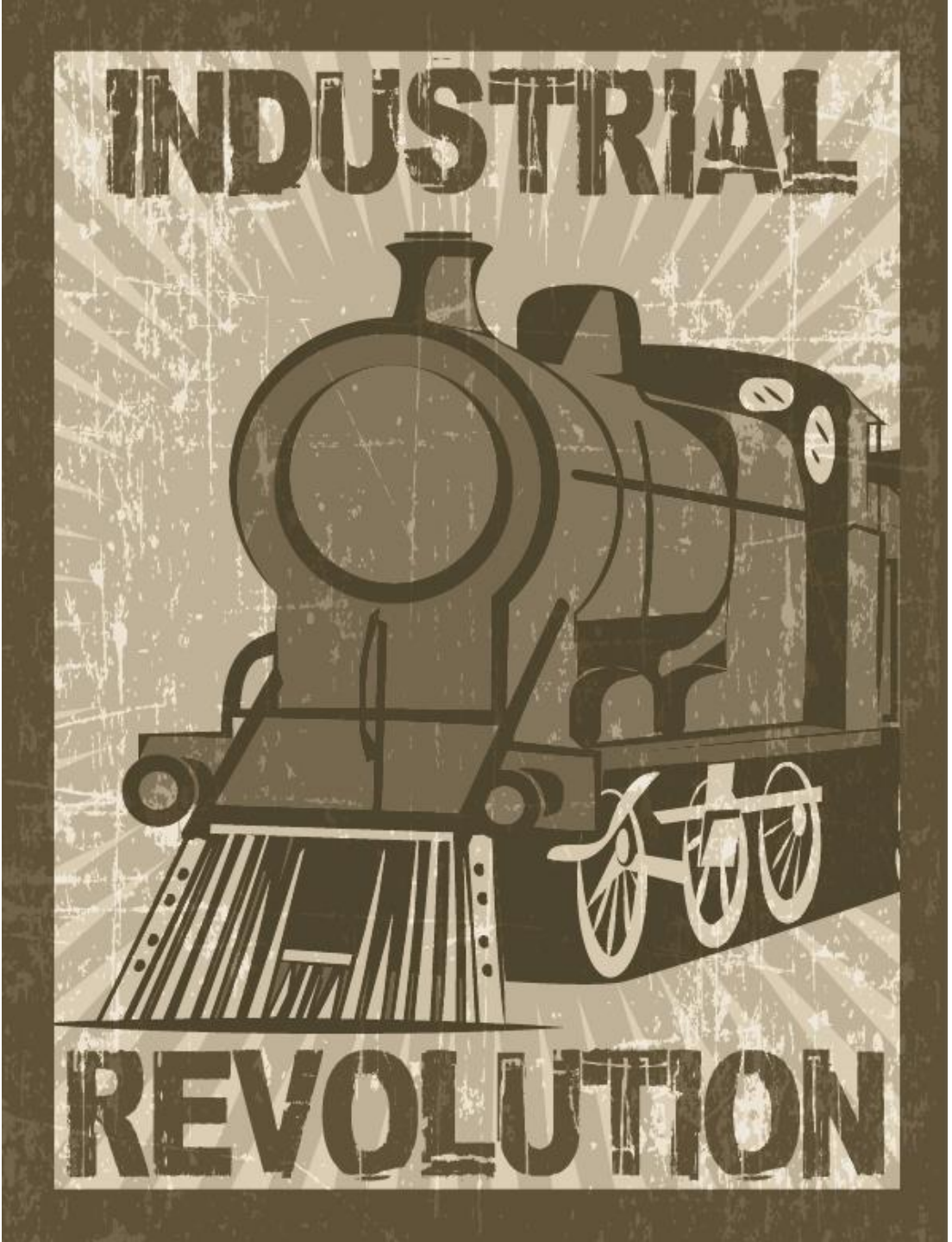
Fig. 59. — Machine à balancier de Watt.

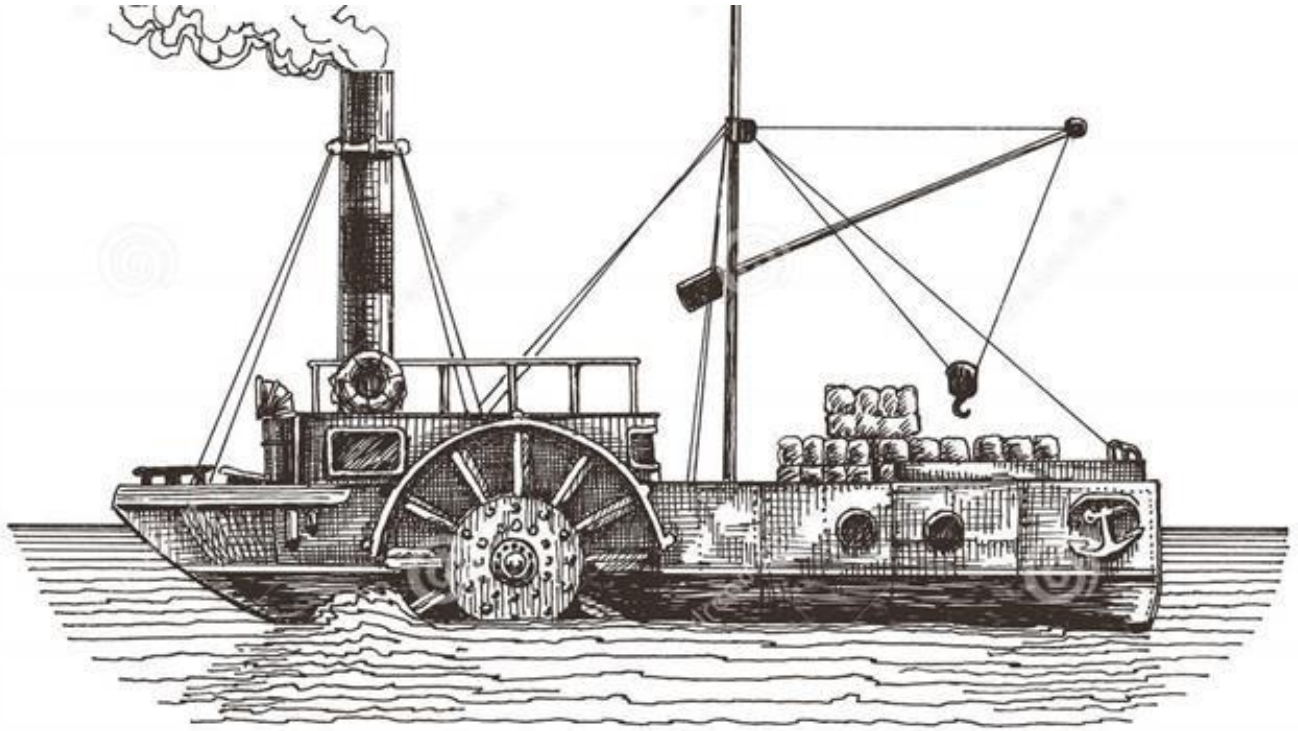
v. Tuyau de prise de vapeur; T, tiroir; J, cylindre; H, condenseur; PE pompe d'épuisement; WY pompe alimentaire de la chaudière UX pompe d'alimentation de la bâche R; *p* Z régulateur; *dd* excentrique; ABCD parallélogramme; GM bielle et manivelle; V volant.

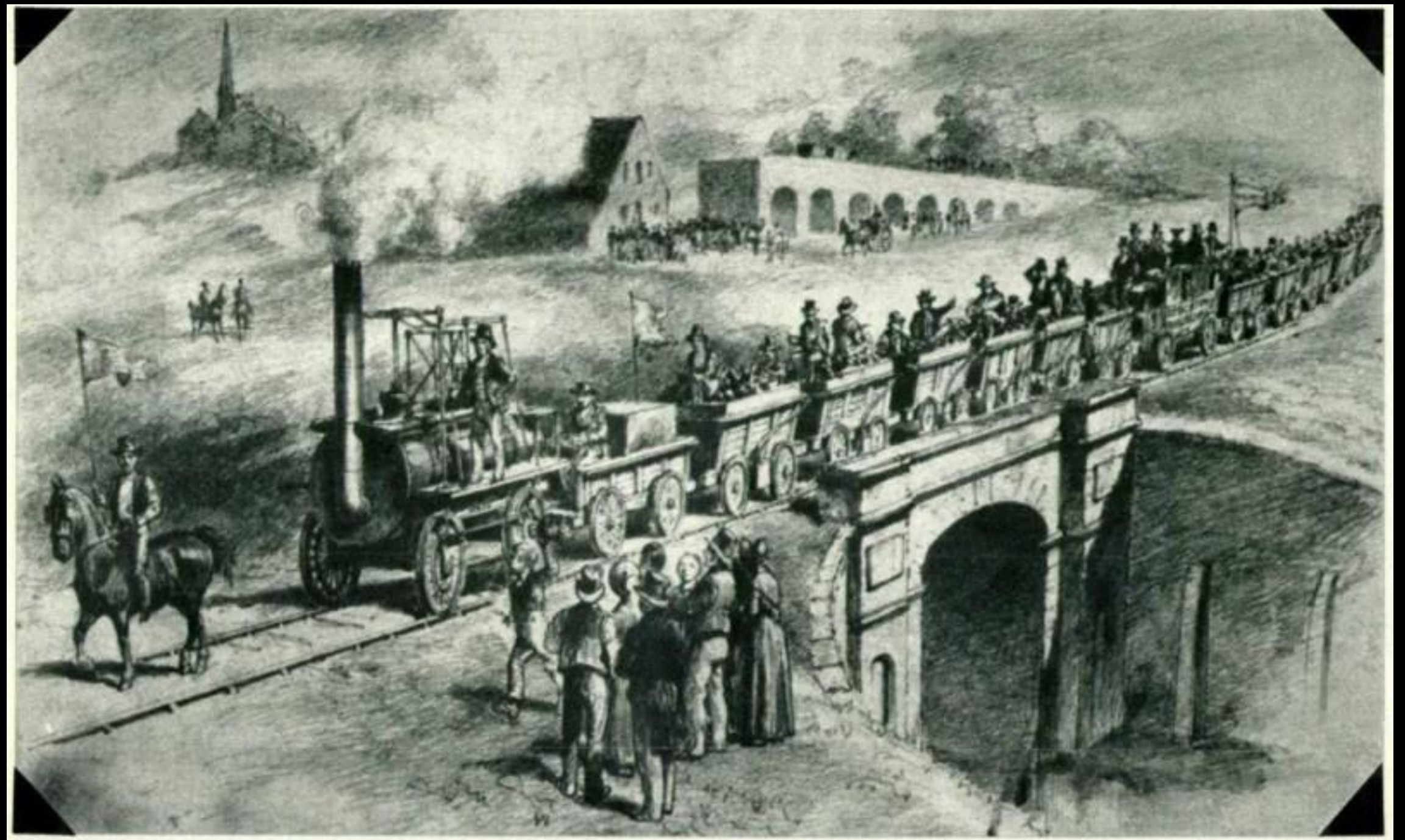
oldbookillustrations.com



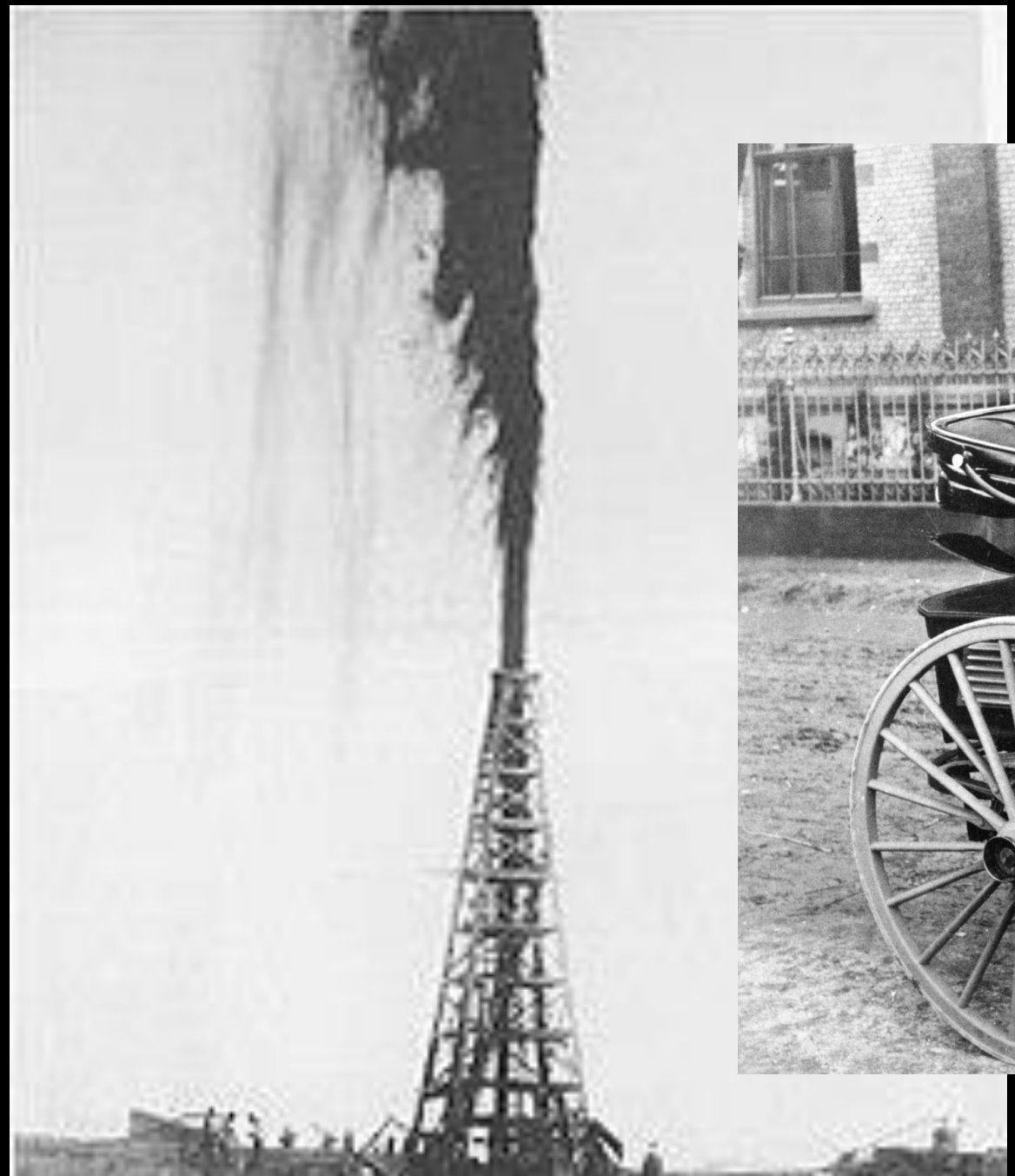



INDUSTRIAL
REVOLUTION

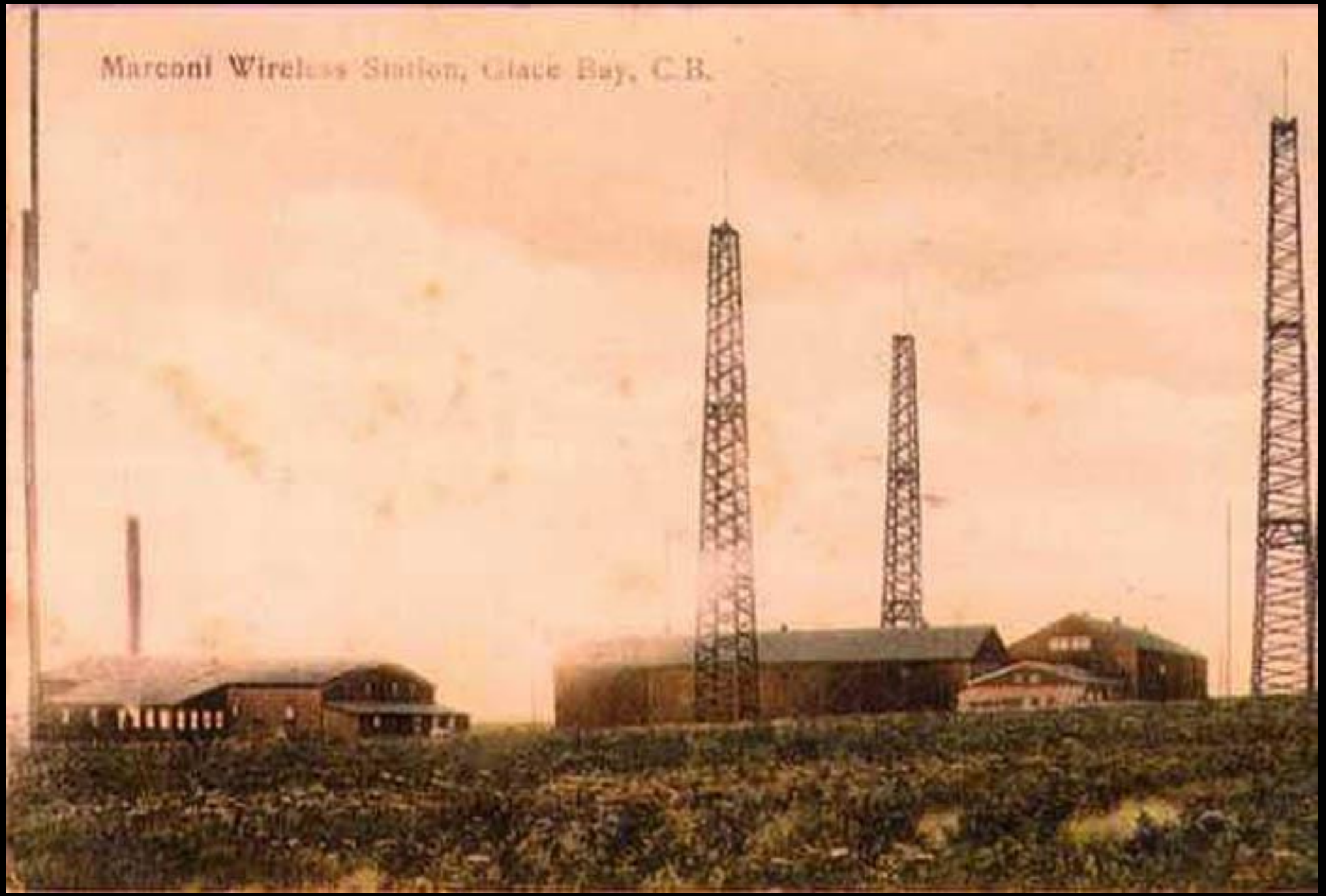




4IR
FOURTH INDUSTRIAL REVOLUTION



3


Marconi Wireless Station, Glace Bay, C.B.

4IR
FOURTH INDUSTRIAL REVOLUTION

SEGUNDA
GUERRA MUNDIAL
DECLASSIFIED

EL HOGAR DEL MATEMÁTICO, ANALISTA Y HÉROE DE GUERRA ALAN TURING (BENEDICT CUMBERBATCH). CON LA INTENCIÓN DE INVESTIGAR LA DENUNCIA DE UN ROBO, ACABARON ARRESTANDO A TURING ACUSÁNDOLE DE "INDECENCIA GRAVE", UN CARGO QUE LE SUPONDRÍA A UNA DEVASTADORA CONDENA POR LO QUE EN AQUEL ENTONCES SE CONSIDERABA UNA OFENSA CRIMINAL. SER HOMOSEXUAL. LOS OFICIALES NO TENÍAN NI IDEA DE QUE EN REALIDAD ESTABAN INCRIMINANDO AL PIONERO DE LA INFORMÁTICA ACTUAL.

★★★★★
AVVINCENTE E STRUGGENTE
UN GRANDE FILM

★★★★★
COMPLESSO, IMPECCABILE,
UNICO. DA OSCAR®

CoverDVDGratis
WWW.COVERDVDGRATIS.COM

EL CODIGO ENIGMA

CoverDVDGratis

PUSO FINA LA GUERRA

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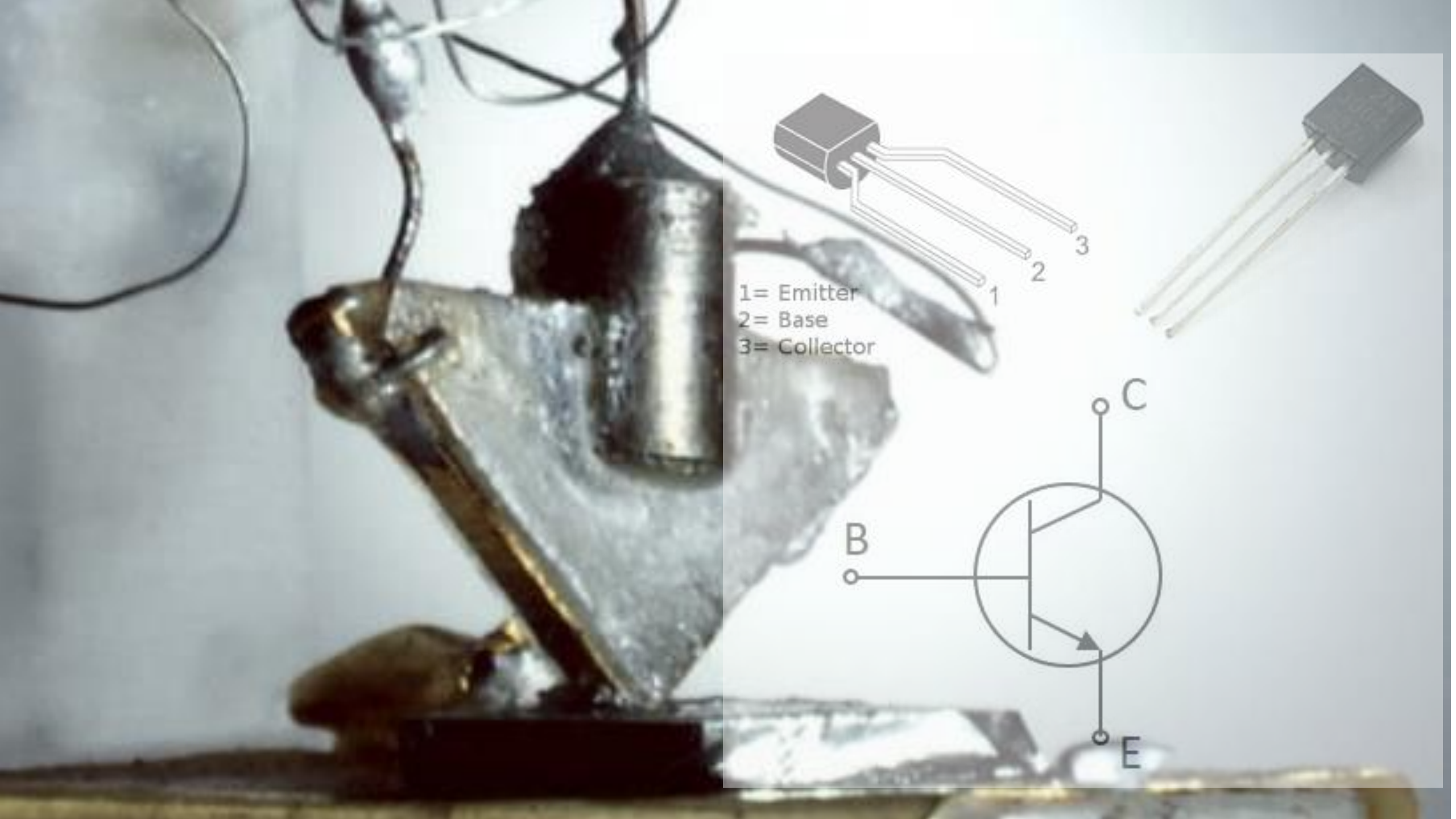
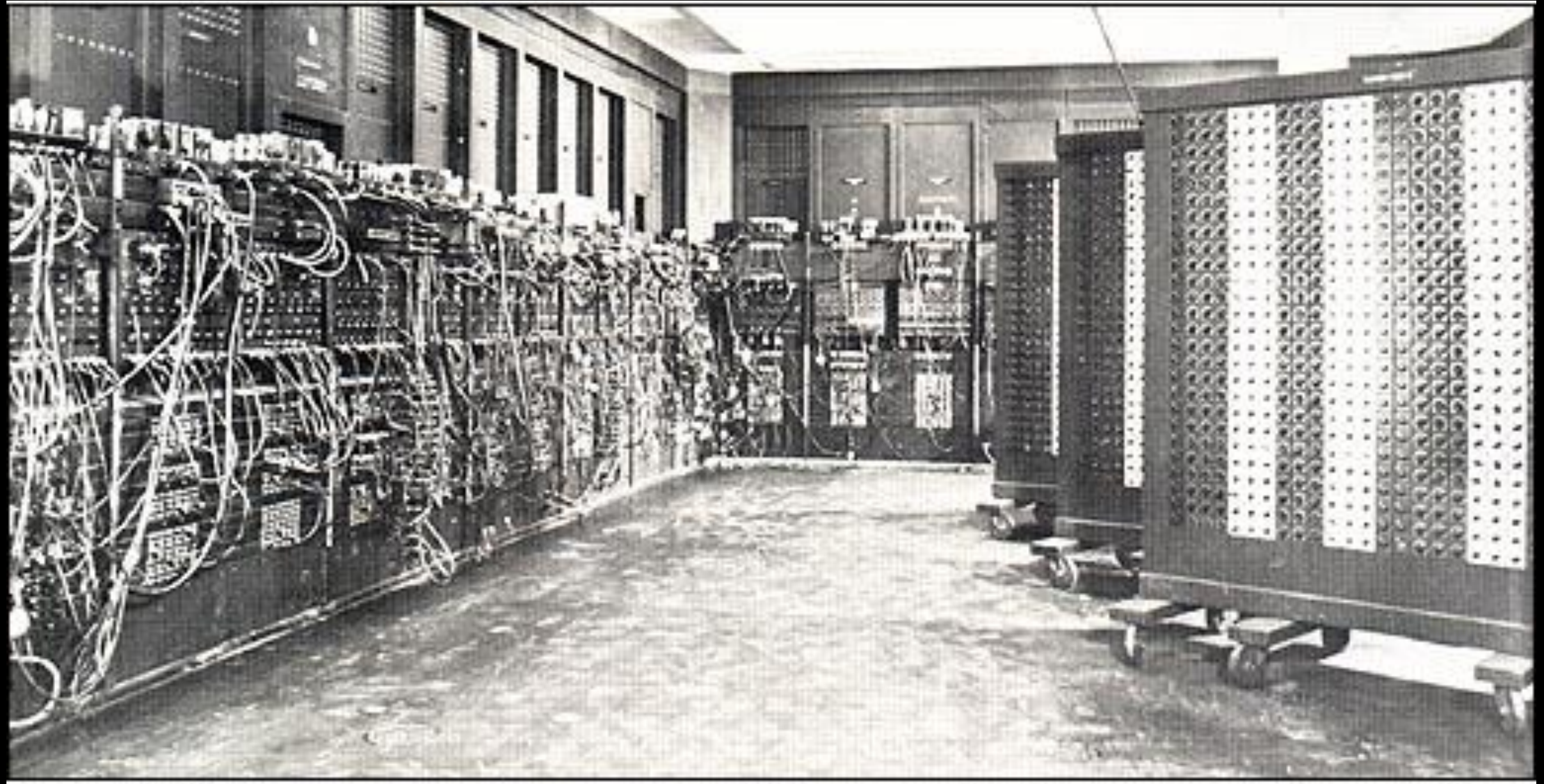
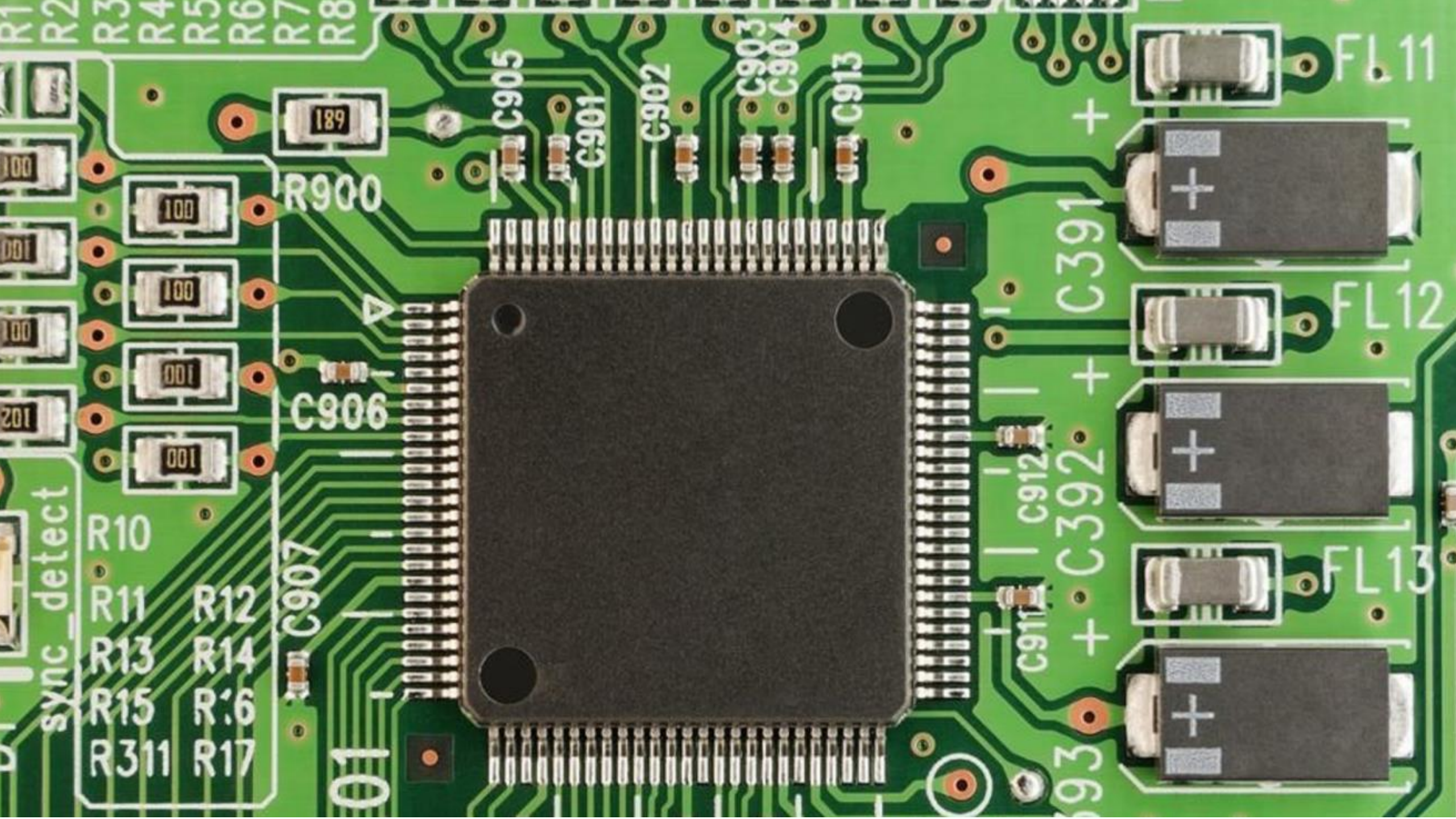
BENEDICT CUMBERBATCH KEIRA KNIGHTLEY

EL CODIGO ENIGMA


1= Emitter
2= Base
3= Collector
1
2
3
C
B
E



Among the first assignments given to Eniac, first all-electronics digital computer, was a knotty problem in nuclear physics. It produced the answer in two hours. One hundred engineers using conventional methods would have needed a year to solve the problem


R1
R2
R3
R4
R5
R6
R7
R8
189
R900
100
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100
001
001
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201
C905
C901
C902
C903
C904
C913
C906
C907
R10
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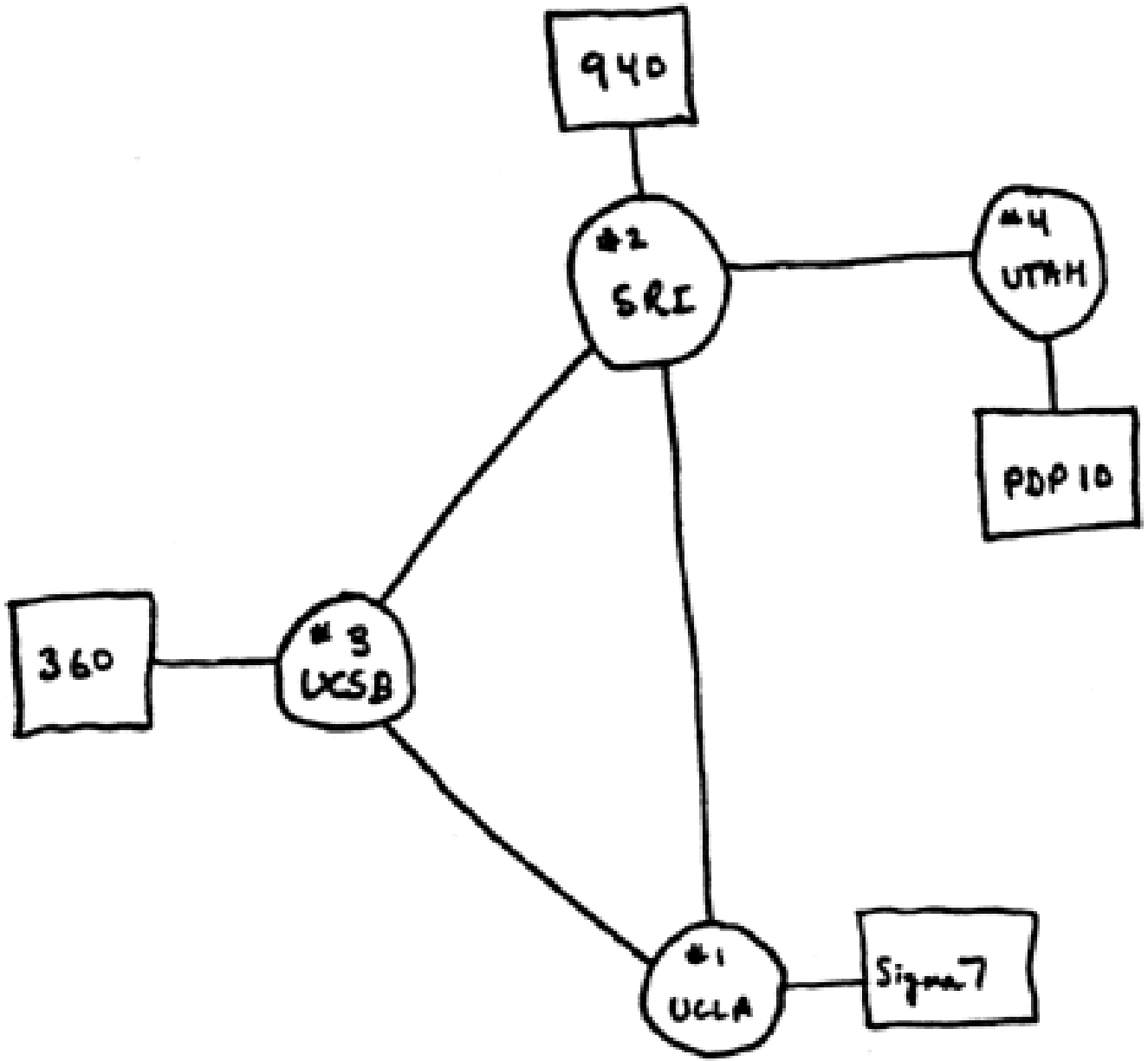
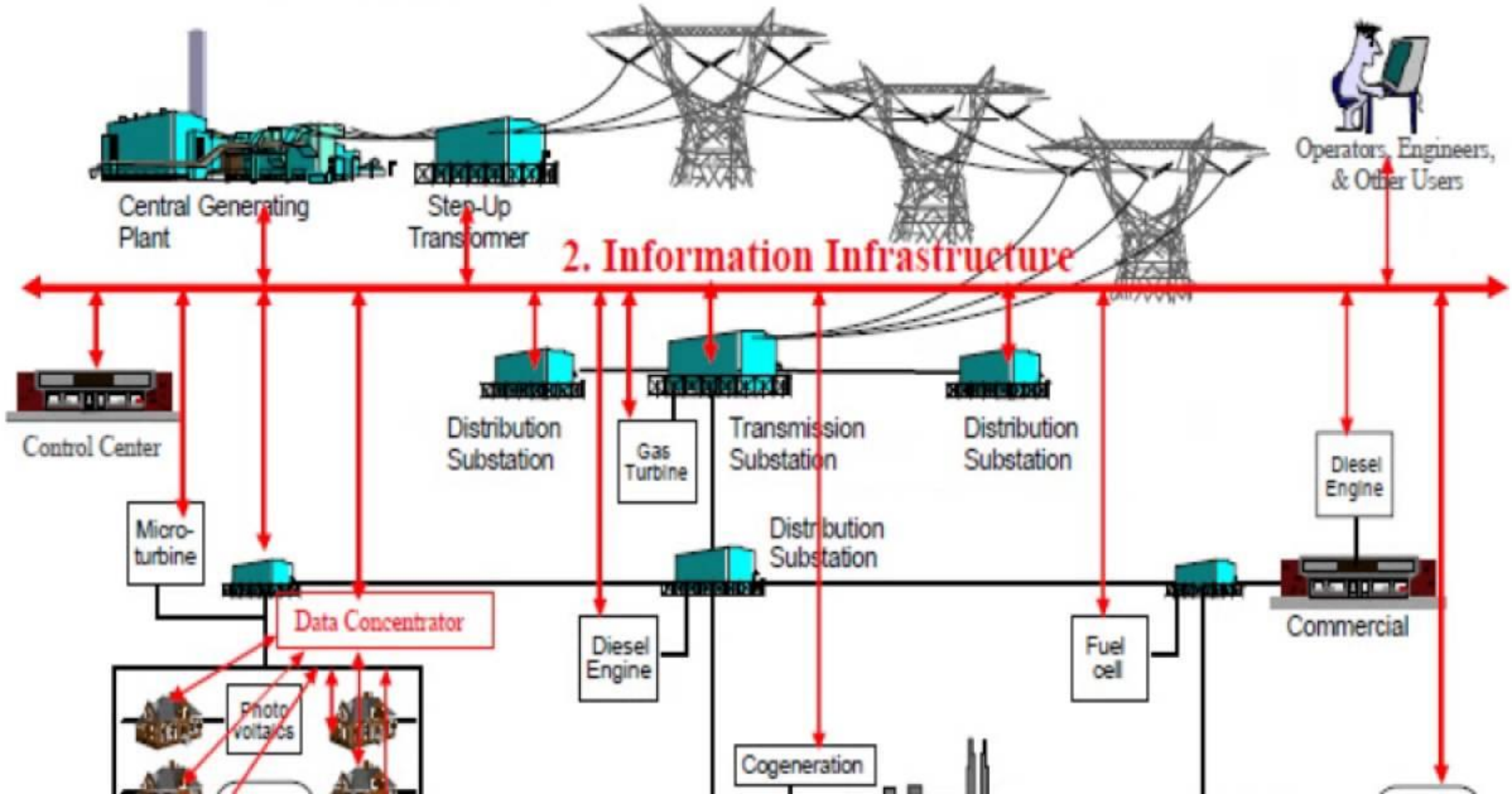
R12
R13
R14
R15
R16
R311
R17
sync_detect
C391
C392
C912
C911
FL11
FL12
FL13

IBM
IBM
Personal
Computer
MADE IN
SINGAPORE
IBM

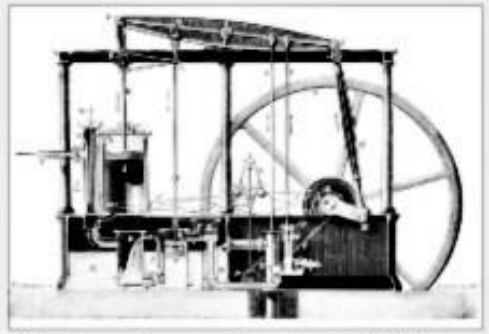

940
#2
SRI
#4
UTAH
PDP 10
360
#3
UCSB
#1
UCLA
Sigma 7

1.Power Infrastructure



PRIMERA REVOLUCIÓN

Introducción de sistemas de producción mecánicos con tracción hidraúlica y de vapor .



Máquina de vapor de James Watt.

SEGUNDA REVOLUCIÓN

Producción en serie, división del trabajo de producción, uso de sistemas eléctricos. Industria química, eléctrica y automovilistica.

Cadena de montaje de Ford

TERCERA REVOLUCIÓN

Incorporación de microelectrónica y tecnología de la información para automatizar toda la producción.

Robots en una fábrica.

Fábricas 4.0

Sistemas interconectados en todo el proceso productivo, impresiones 3D y robots colaborativos

1750 1800 1850 1900 1950 2000 ...

1774 Primera máquina de vapor de Boulton y Watt

1784 Primer telar mecanizado

1829 Locomotora de vapor: primera línea férrea entre dos ciudades

1870 Primera cinta transportadora

1871 Primera central eléctrica de uso comercial

1880 Thomas Edison patenta la bombilla

1886 Primer automóvil de combustión interna

1897 Primera transmisión de radio

1962 Primeros ordenadores personales

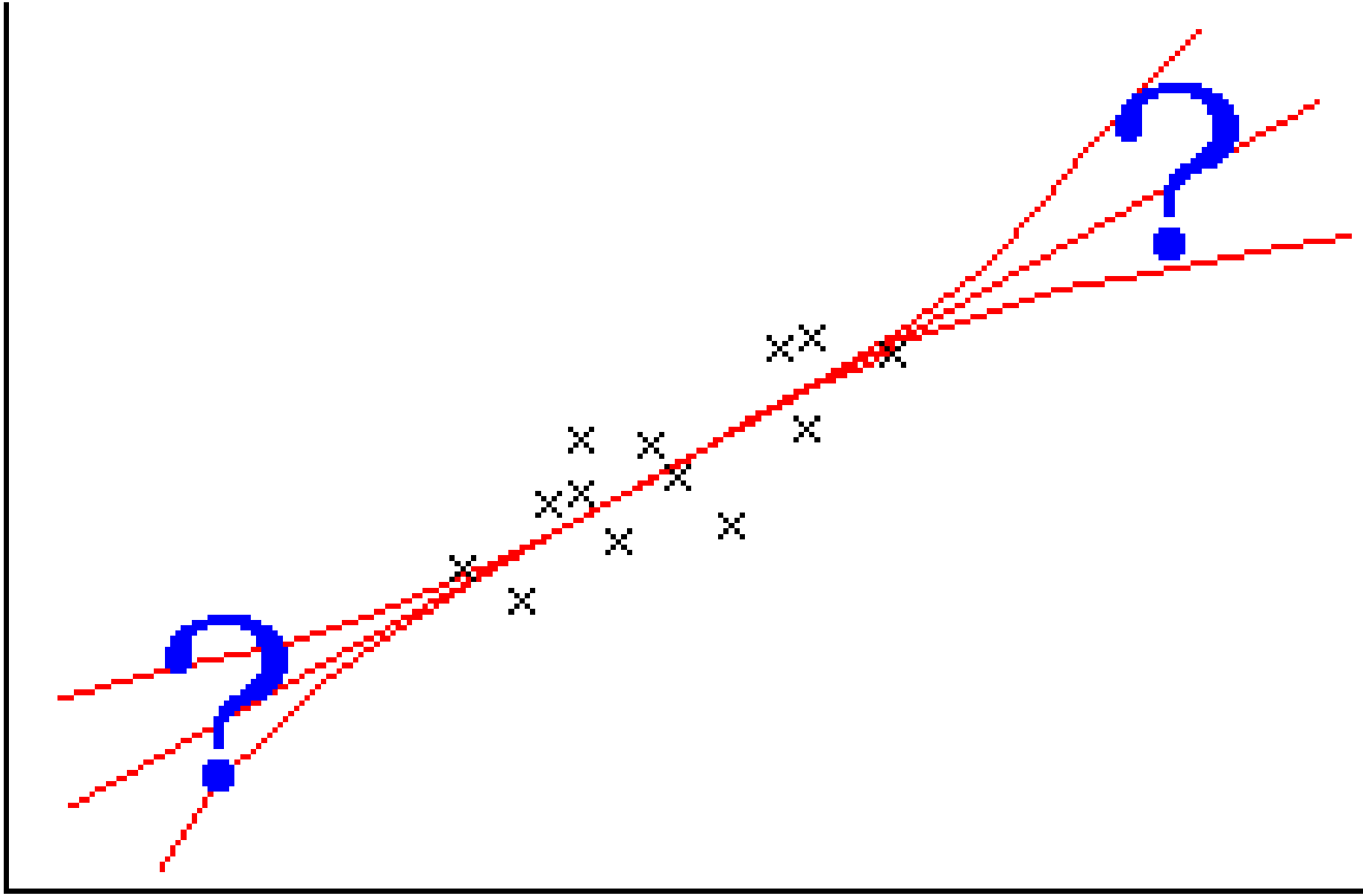
1969 Primer controlador programable (PLC), que regula la producción

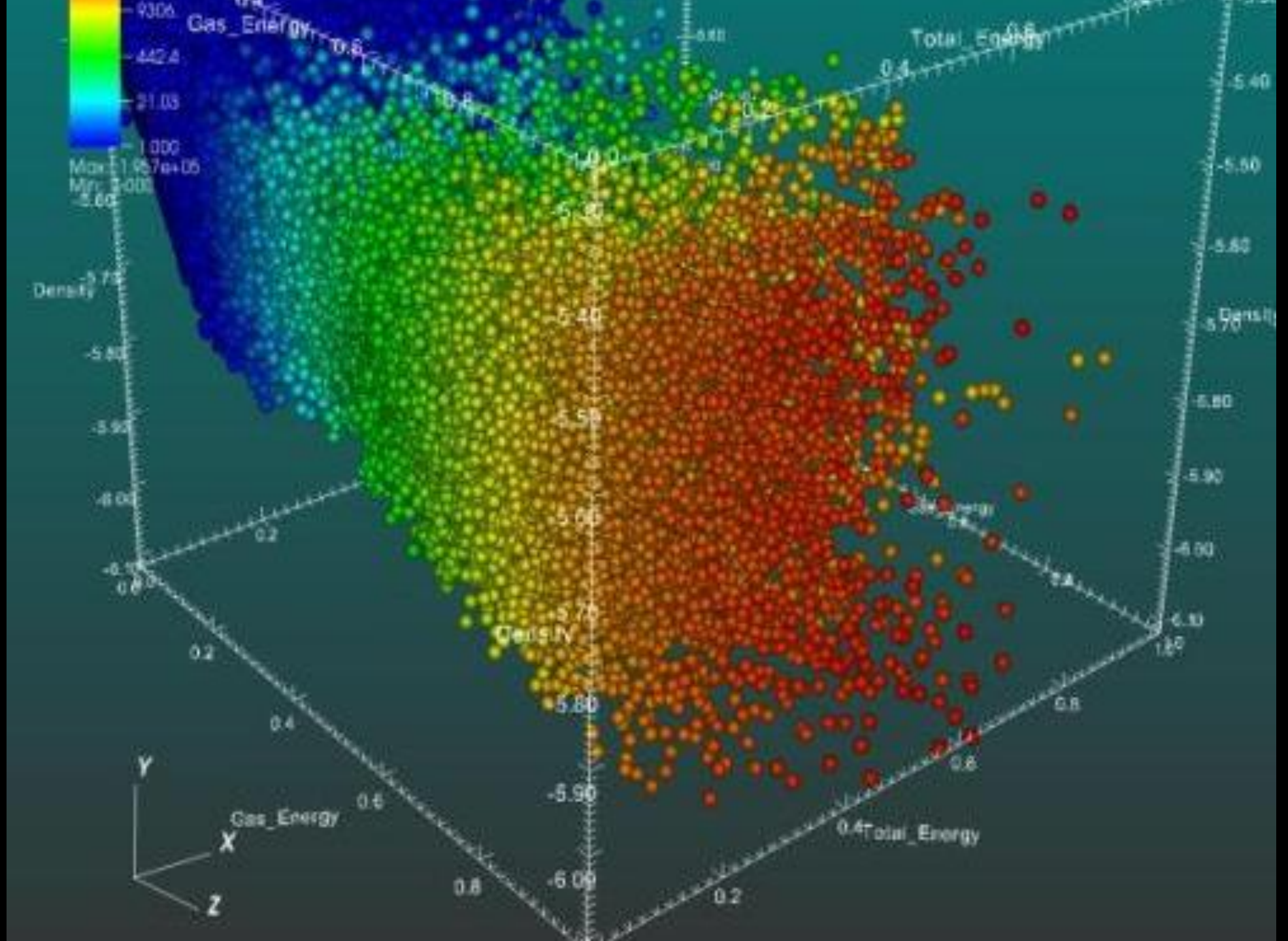
1990 Nace la *World Wide Web* (internet)

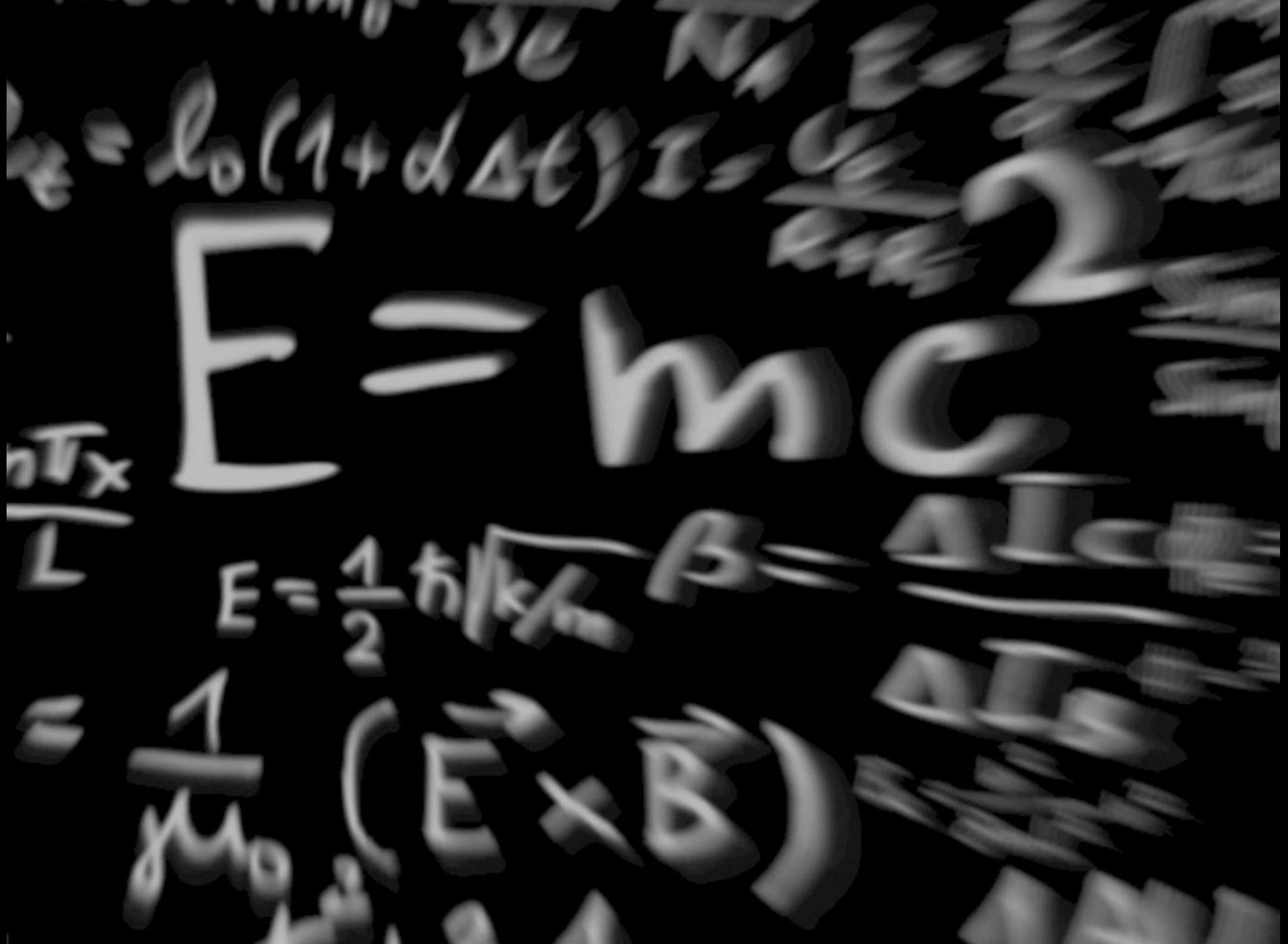
4IR
FOURTH INDUSTRIAL REVOLUTION

Problems
Solutions

In the past we have had only one way to solve problems




9306
442.4
21.03
1.000
Gas_Energy
Total_Energy
Density
Y
X
Z
Gas_Energy
Total_Energy

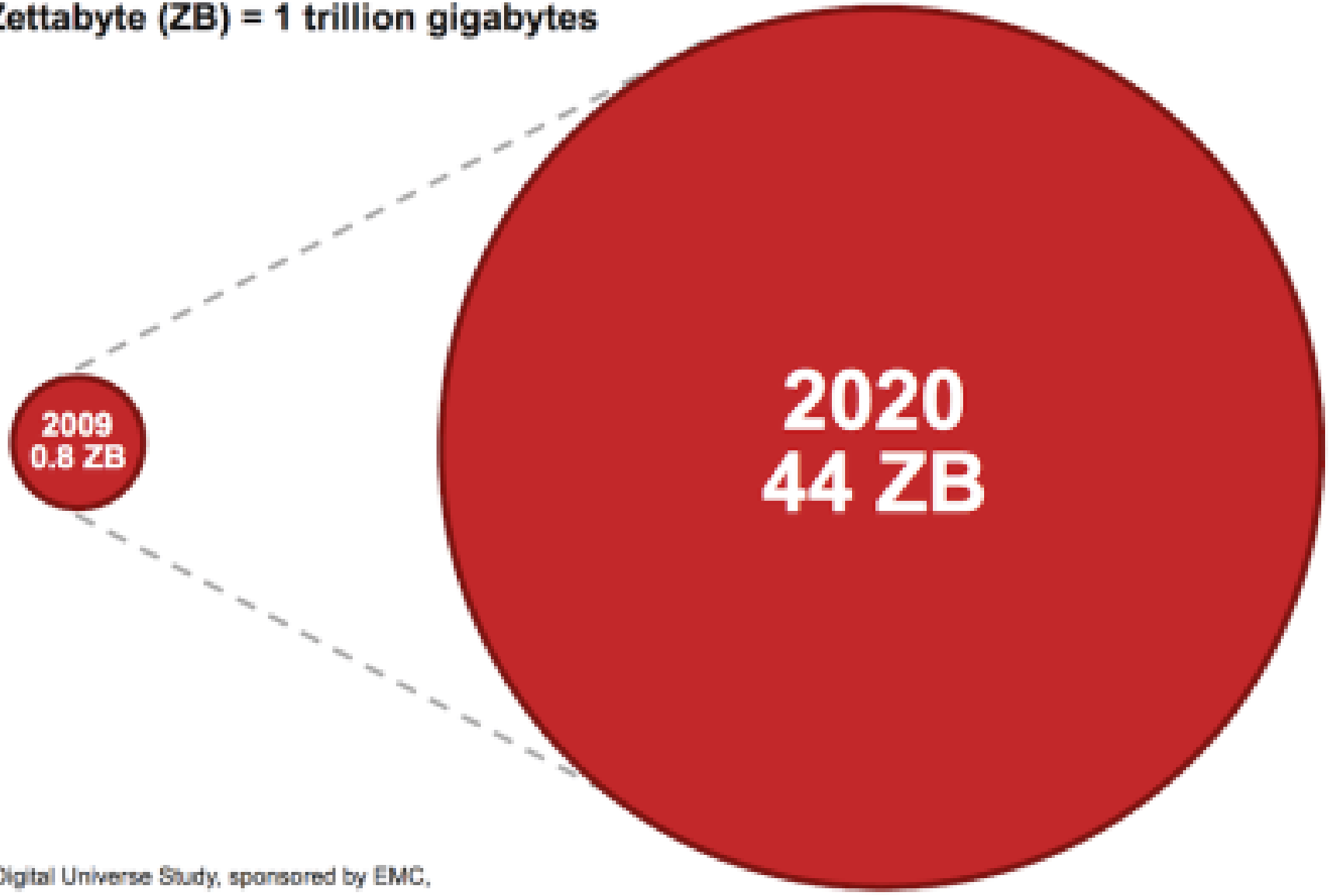

E = mc
E = 1/2 ħ√(k/m)
= 1/μ0 (E × B)

THERE ARE TWO KINDS OF PEOPLE
THOSE WHO CAN EXTRAPOLATE FROM INCOMPLETE DATA

Disruption
Ahead

Growing by a Factor of 55

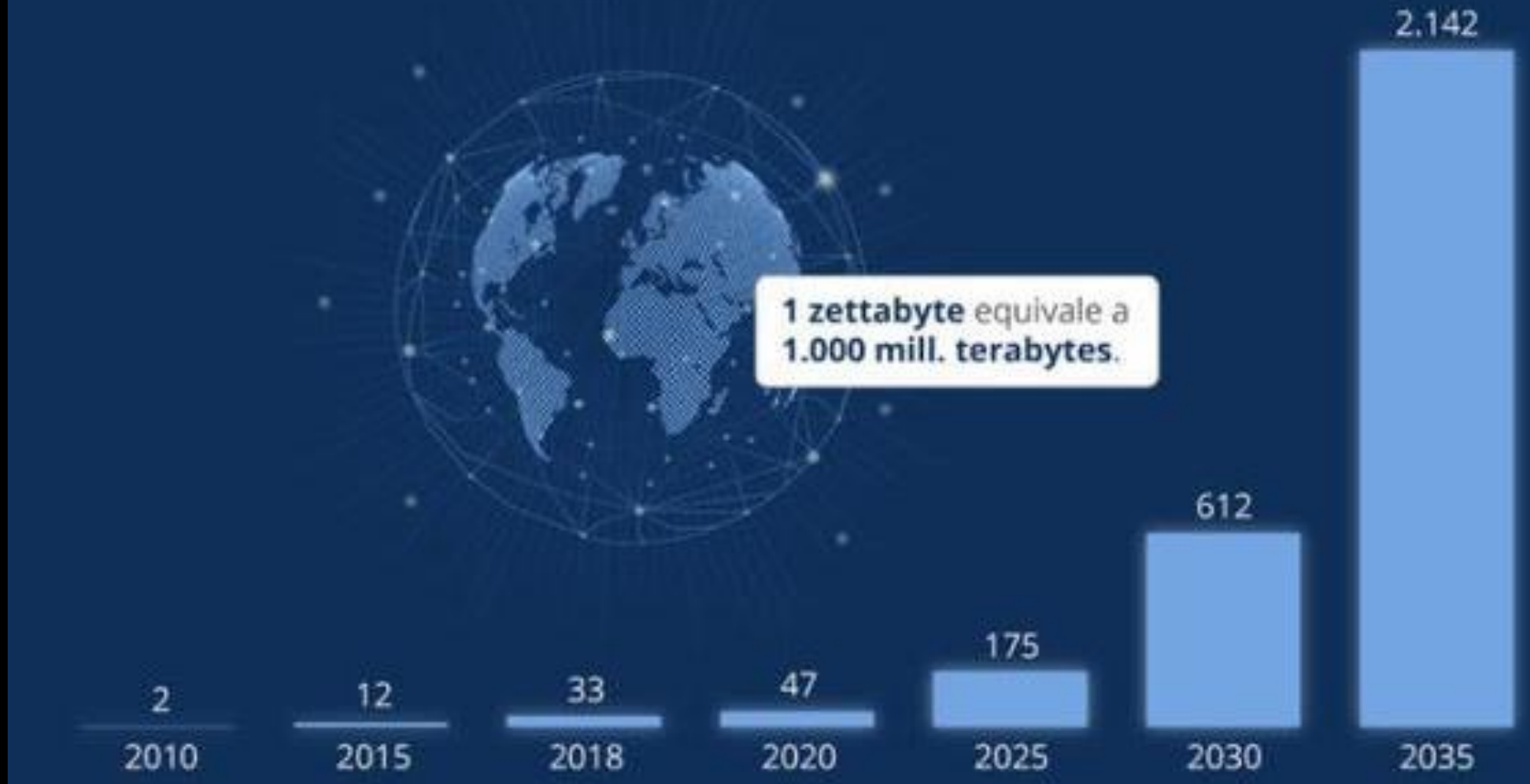
One Zettabyte (ZB) = 1 trillion gigabytes



Source: IDC Digital Universe Study, sponsored by EMC,

La creación de datos, a punto de explotar

Cantidad real y prevista de datos generados en todo el mundo (en zettabytes)



@Statista_ES

Fuente: Statista Digital Economy Compass 2019

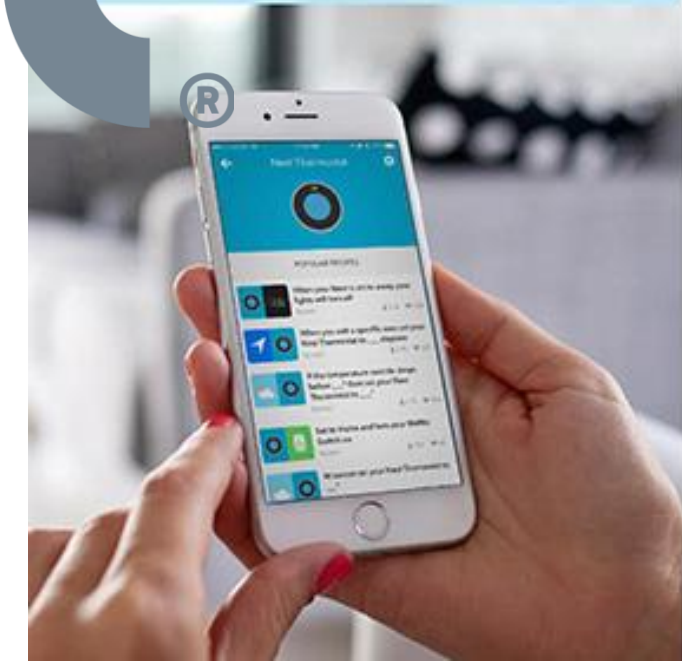
statista

Copyright 2014 Business Over Broadway

BUSINESS BROADWAY

EVRYTHNG
YouTube

nest

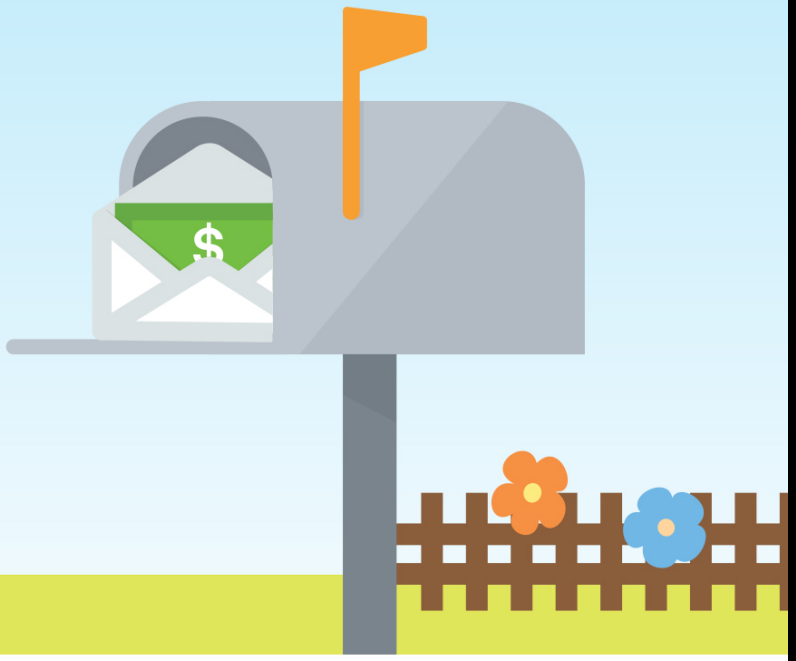


Great on our own. Revolutionary together.

When Nest partners with your energy company, good things happen.

You may be able to get instant rebates. Or receive a Nest Thermostat at no cost. And depending on your energy provider, you may even be able to sign up for exclusive programs like Rush Hour Rewards and Seasonal Savings that'll help you keep on saving throughout the year.

It's time to look forward to your energy bill.



See what Nest and your energy provider can do together:

72

Get a Nest Thermostat
Your energy company wants you to have a Nest Thermostat so you can start saving energy. And money.
Learn more >

Rush Hour Rewards™
Nest Thermostat can help you save energy during peak hours. What's even better? Your energy company will pay you for it.
Learn more >

Seasonal Savings
As the weather changes, Nest Thermostat can help you save by making small adjustments to the temperatures in your schedule.
Learn more >

Time of Savings
When energy is most expensive, your Nest Thermostat slightly tweaks the temperature and still keeps you comfy.
Learn more >

Save energy when it's most expensive.

Time of Savings.

Nest helps you take advantage of your energy company's Time of Use (TOU) plans to save money. TOU plans set different energy prices throughout the day – cheaper at night, more expensive in the afternoon, and it switches on weekends.

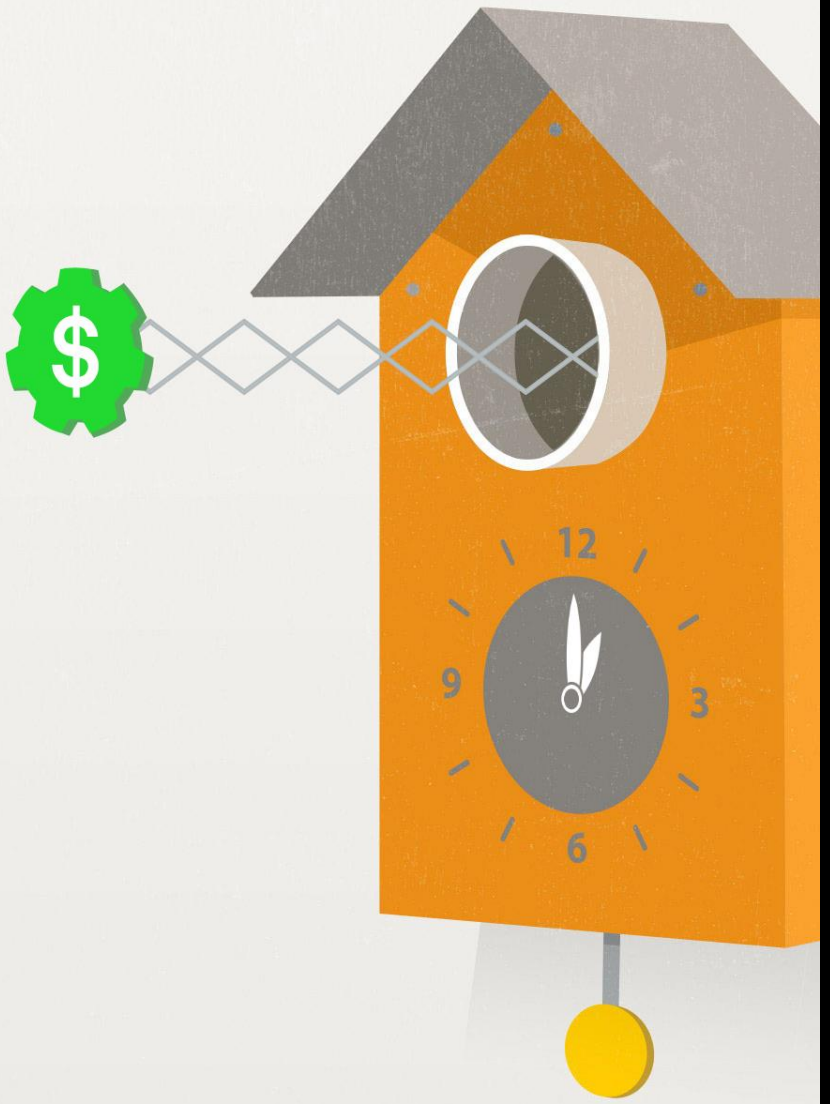
Keeping track of changing prices can be tricky, so Nest can do it for you automatically. Once Nest is connected to your energy company, here's an example of what might happen:

1:00 Energy prices are going up, so your Nest Thermostat tweaks the temperature to help you save money. Just look for the green gear.

2:30 Nest never adjusts the temperature more than a degree or two, but you can always turn it up or down.

7:00 Energy prices have fallen, so your schedule goes back to normal.

Learn more about Time of Savings >



Rush Hour Rewards

Your energy company will pay you to save energy. Depending on your provider, you could earn $20-$60 back per Nest Thermostat each summer. Here's how it works:

Your energy provider wants to lower demand during energy rush hours, like those hot summer afternoons when everyone's cranking up the air conditioning.

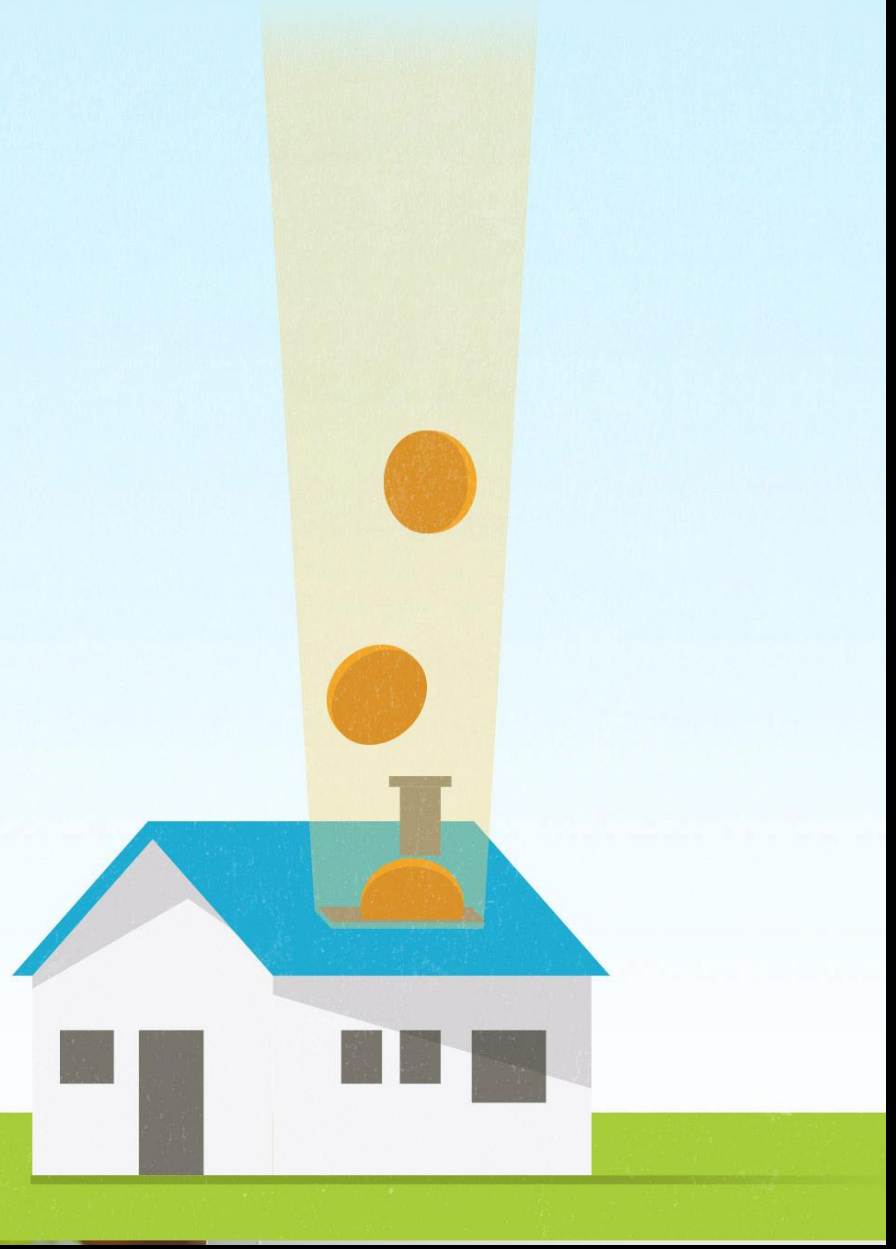
Nest Thermostat can help you avoid using energy during those rush hours by automatically cooling your home ahead of time.

72

You're in control. If you're home, Nest won't let the temperature rise more than a few degrees. But if you start feeling warm, you can change the temperature at any time.

Watch the video

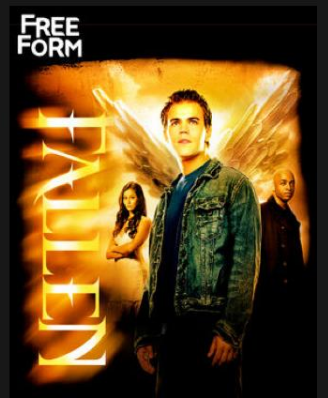
Here's what to expect >

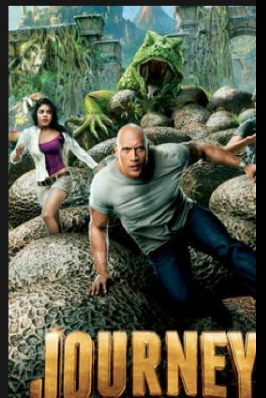


19 USD
Billons

BIG DATA
CREATIVITY?

Agregados recientemente



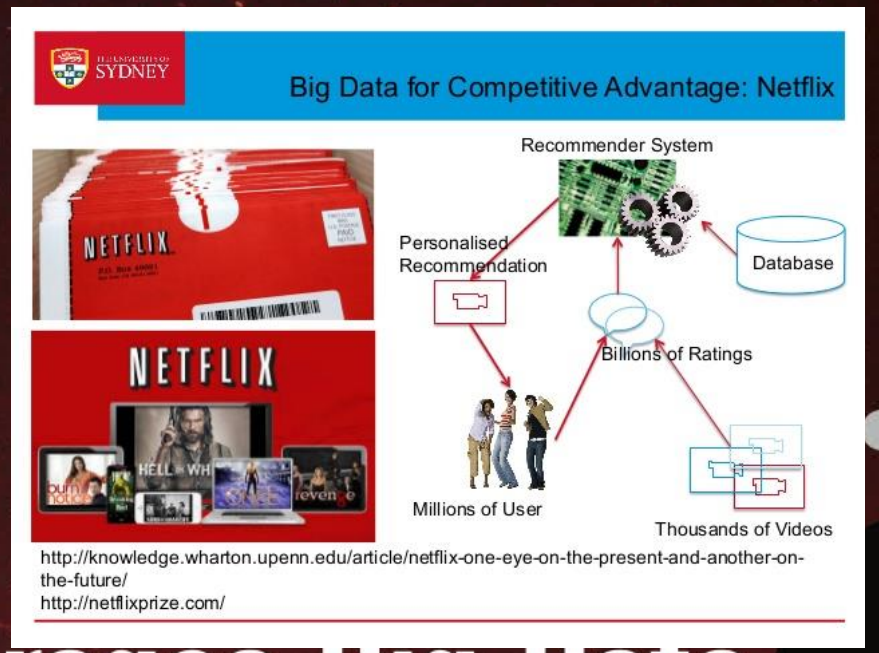


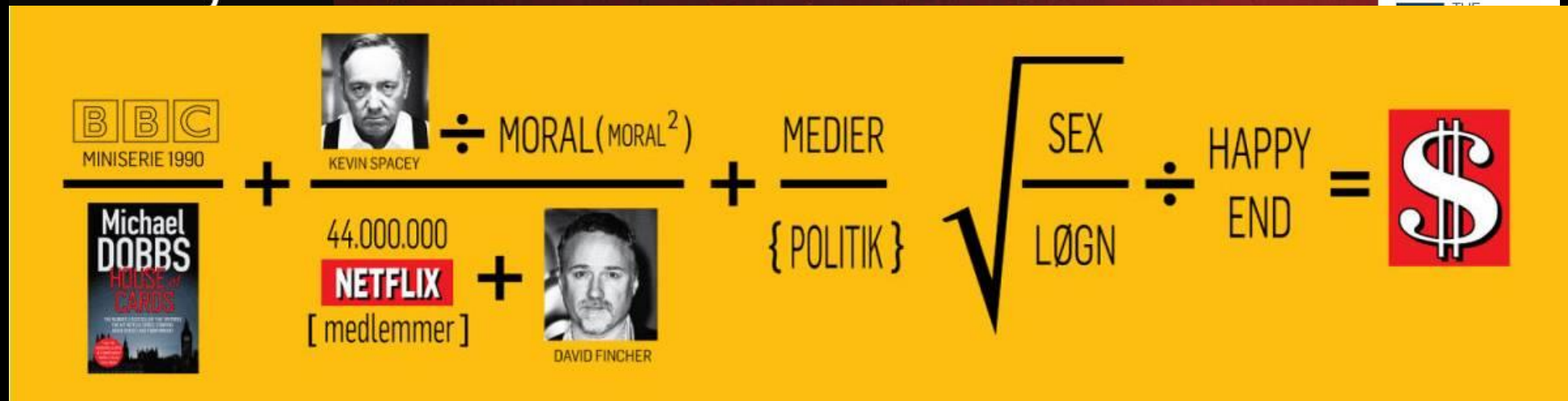
APACHE:
BIG_DATA
NORTH_AMERICA

9-12.05.16
VANCOUVER, BC.

Keynote:
How Netflix Leverages Big Data

Brian Sullivan, Director of Streaming Analytics,
Netflix





"...industrial companies are in the information business whether they want to be or not."

General Electric former CEO
Jeff Immelt

flightradar24
LIVE AIR TRAFFIC
Greenland
Finland
Libya
Mali
Niger
Angola
South Pacific Ocean
South Atlantic Ocean
Indian Ocean

flightradar24
LIVE AIR TRAFFIC

AIRCRAFT 1,500 / 11,643

AIRPORT DELAYS

AIRPORT	ARR	DEP
Sydney (SYD)	2.9	4.0
Gold Coast (OOL)	3.5	3.2
New York (EWR)	4.1	2.4
Manila (MNL)	1.3	5.0
Melbourne (MEL)	2.0	4.2

Go to delay map

TWEETS

Earlier today, @Airbus & @FlyANA_official unveiled the airline's first A380 ...

7 hours ago

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Download Flightradar24 Flight Tracker

Download on the App Store

ANDROID APP ON Google Play

We want to treat analytics like it's as core to the company over the next 20 years as material science has been over the past 50 years. We can hire the talent. We can evolve our business model accordingly. We need to treat our service agreements to share outcomes with our customers the same way an IT company might approach that in the future. So, in order to do that, we have to add technology, we have to add people, we have to change our business models. We have to be willing to do all those things.

General Electric former CEO
Jeff Immelt

PLATFORM
Predix
The world runs on industry, and industry runs on Predix

The real promise of big data: It's changing the whole way humans will solve problems

ZAVAIN DAR, INNOVATION ENDEAVORS FEBRUARY 9, 2014 10:15 AM

TAGS: BIG DATA, TOP-STORIES, ZAVAIN DAR

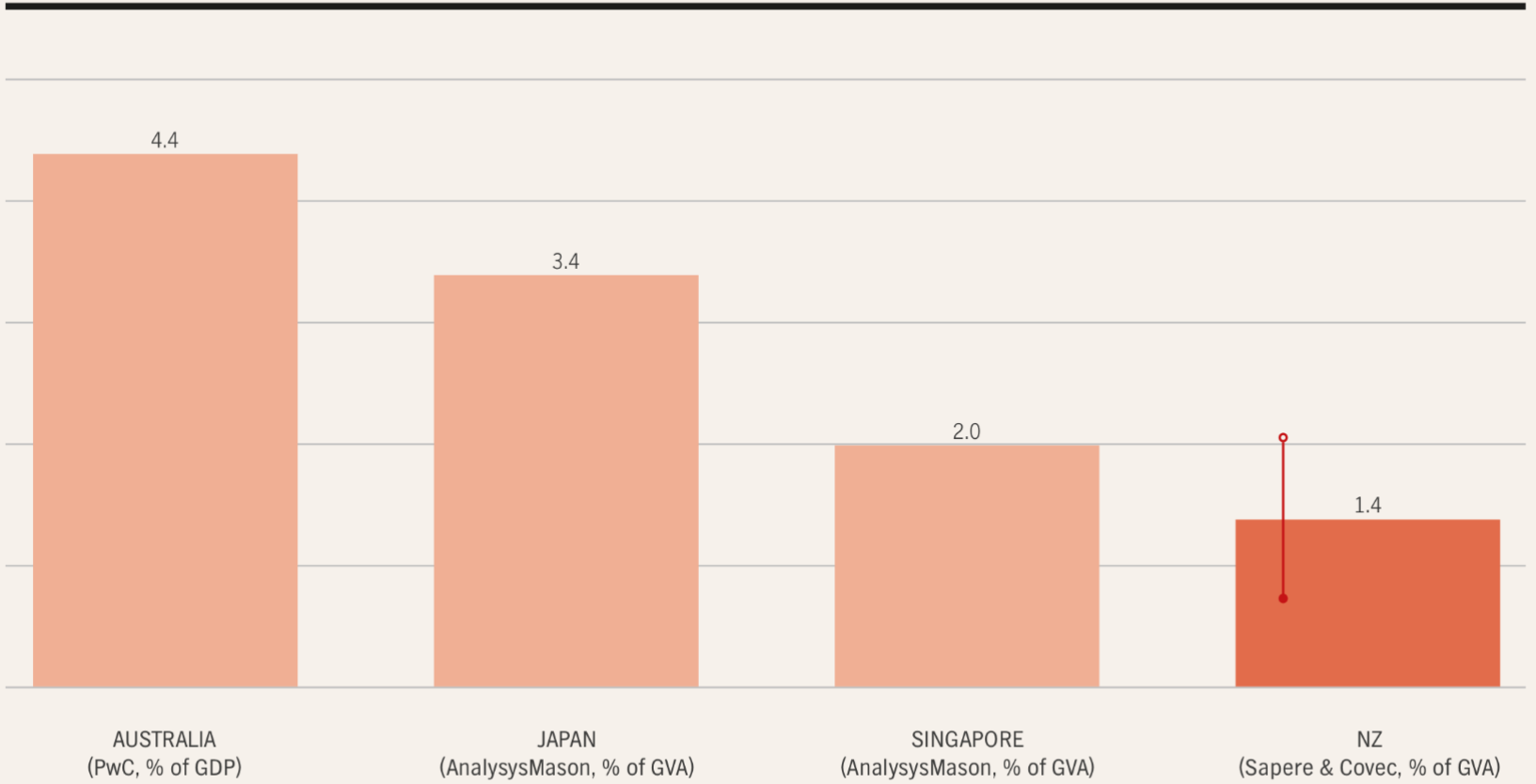
Copiar Definir

Data-Driven Innovation

BIG DATA FOR GROWTH AND WELL-BEING

FIGURE 6

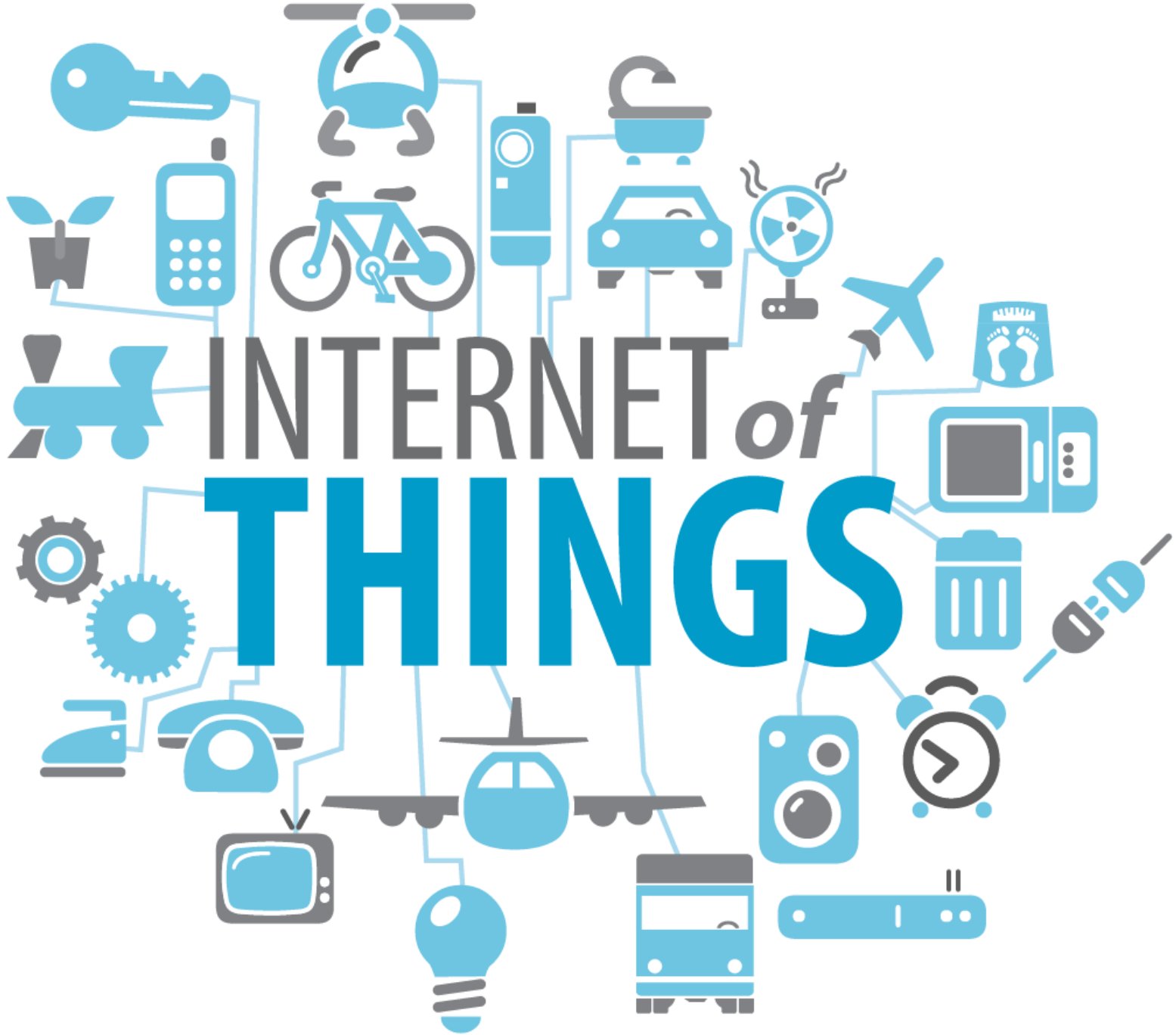
INTERNATIONAL COMPARISON OF DDI IMPACTS



SOURCE: ANALYSYSMASON (2014A, B), PWC (2014), SAPERE & COVEC

Note that the Australian study estimates a GDP impact while the other studies focus on GVA. The primary difference between GDP and GVA is that the latter does not take account of taxes and subsidies applied to goods and services.

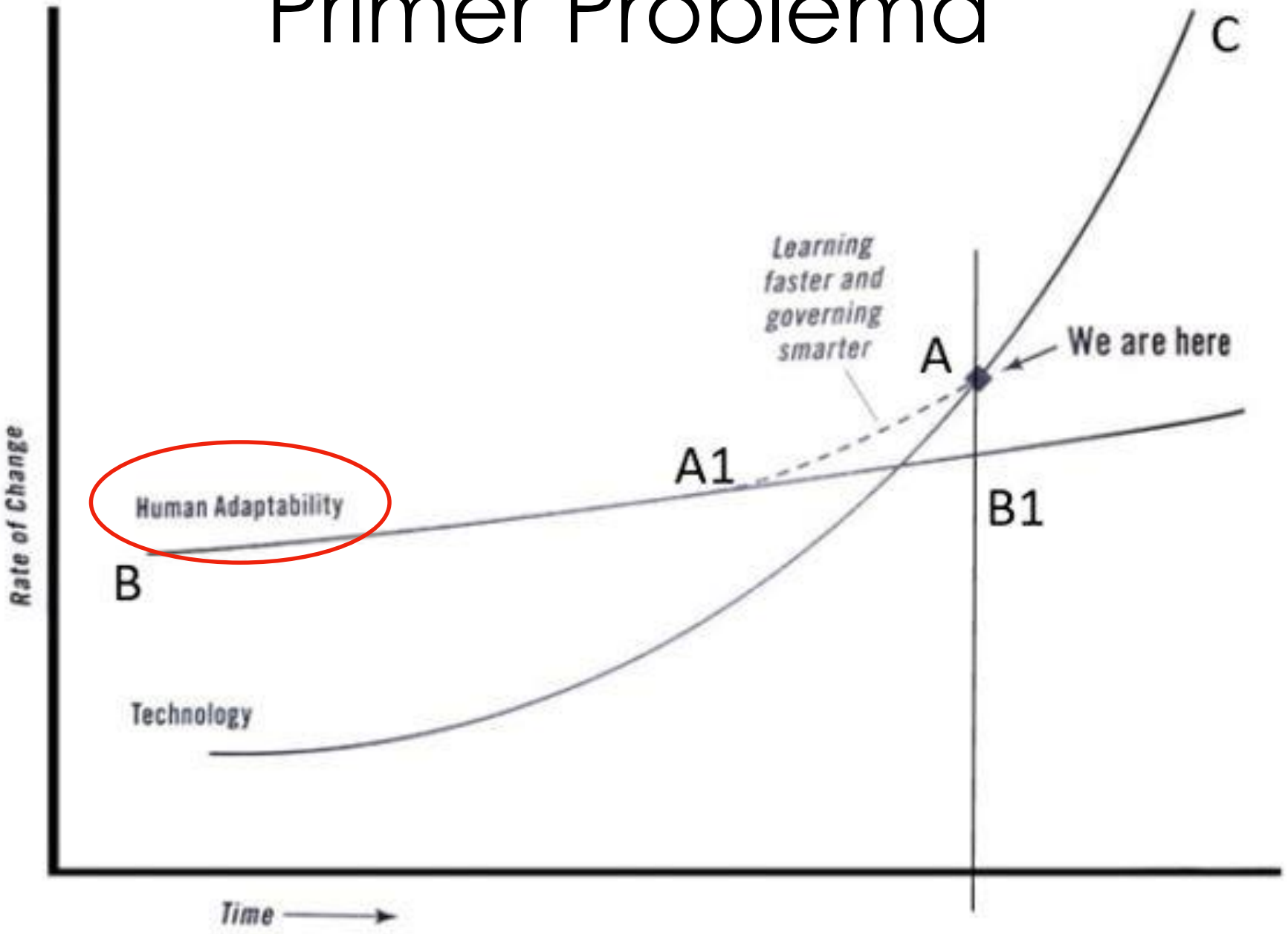
BLOCKCHAIN
TECHNOLOGY


INTERNET of
THINGS

AI

PROBLEM?

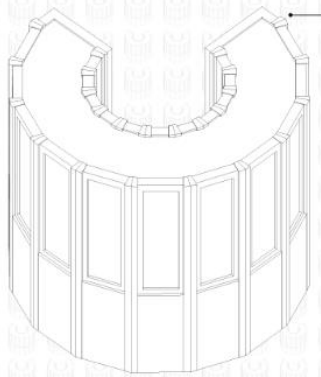
Primer Problema



La revolución industrial ha tenido tres o cuatro duplicaciones en eficiencia en 200 años

Erik Brynjolfsson & Andrew McAfee

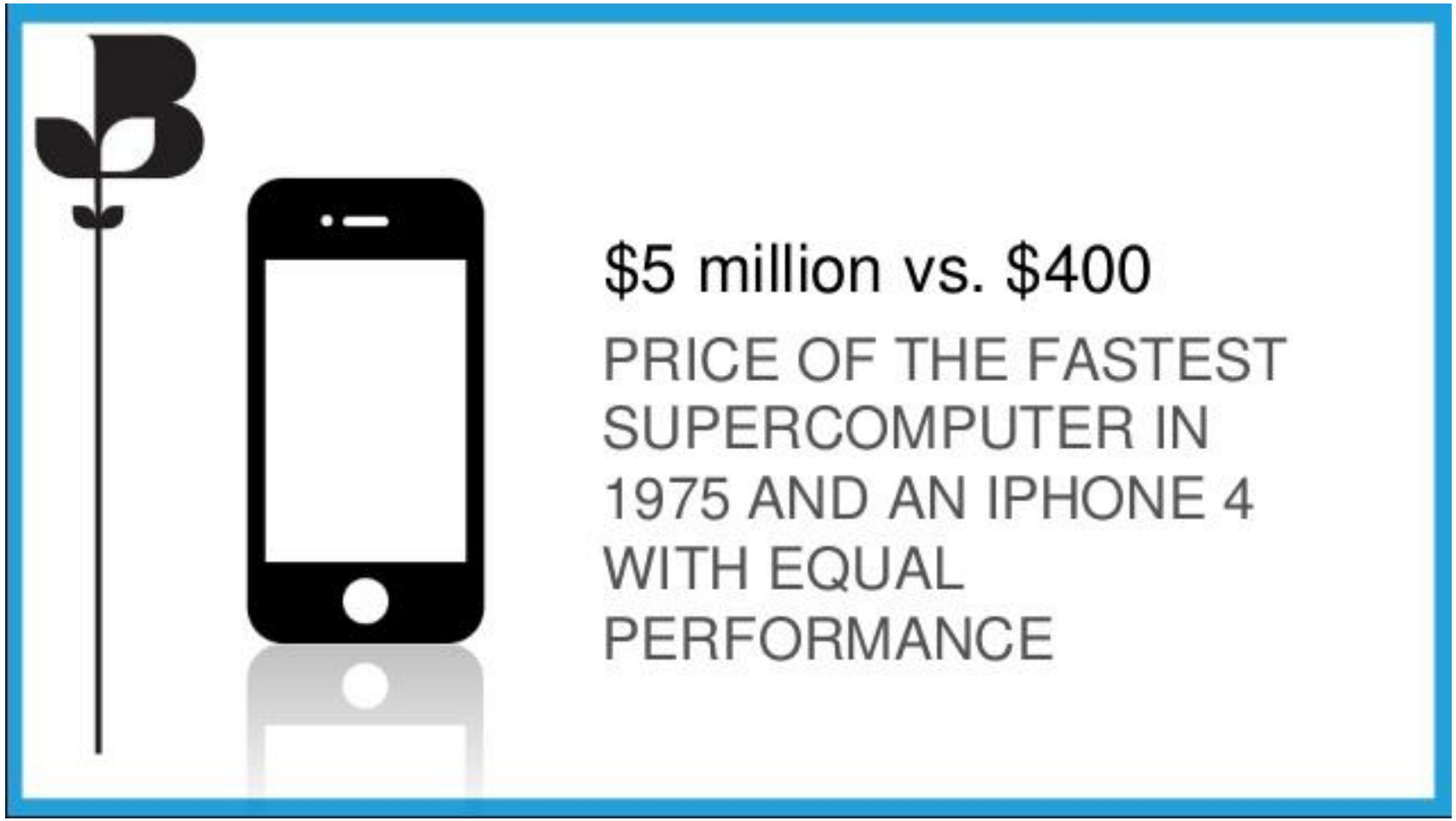
ONE GFLOP = 1,000,000,000 FLOATING POINT OPERATIONS PER SECOND



CRAY 2

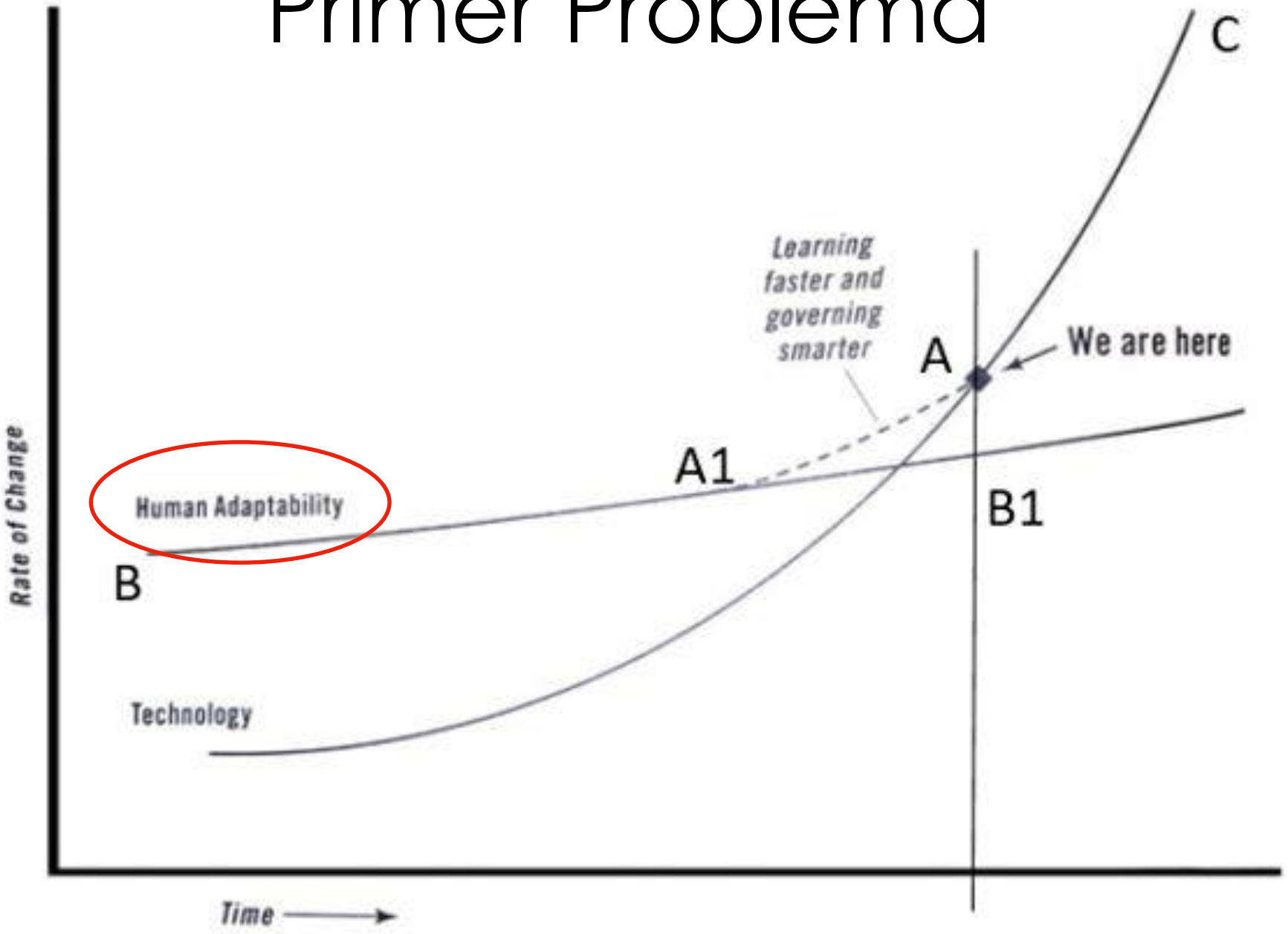
The CRAY-2 was the world's fastest supercomputer from 1985-1990. It operated with a peak performance of 1.9 GFLOPS. At the time it was used for Nuclear Weapons research and SONAR development. It was also utilised by multiple civil organisations including NASA and a number of universities.

1985-1990
1.9 GFLOPS
THE WORLD'S FASTEST SUPERCOMPUTER

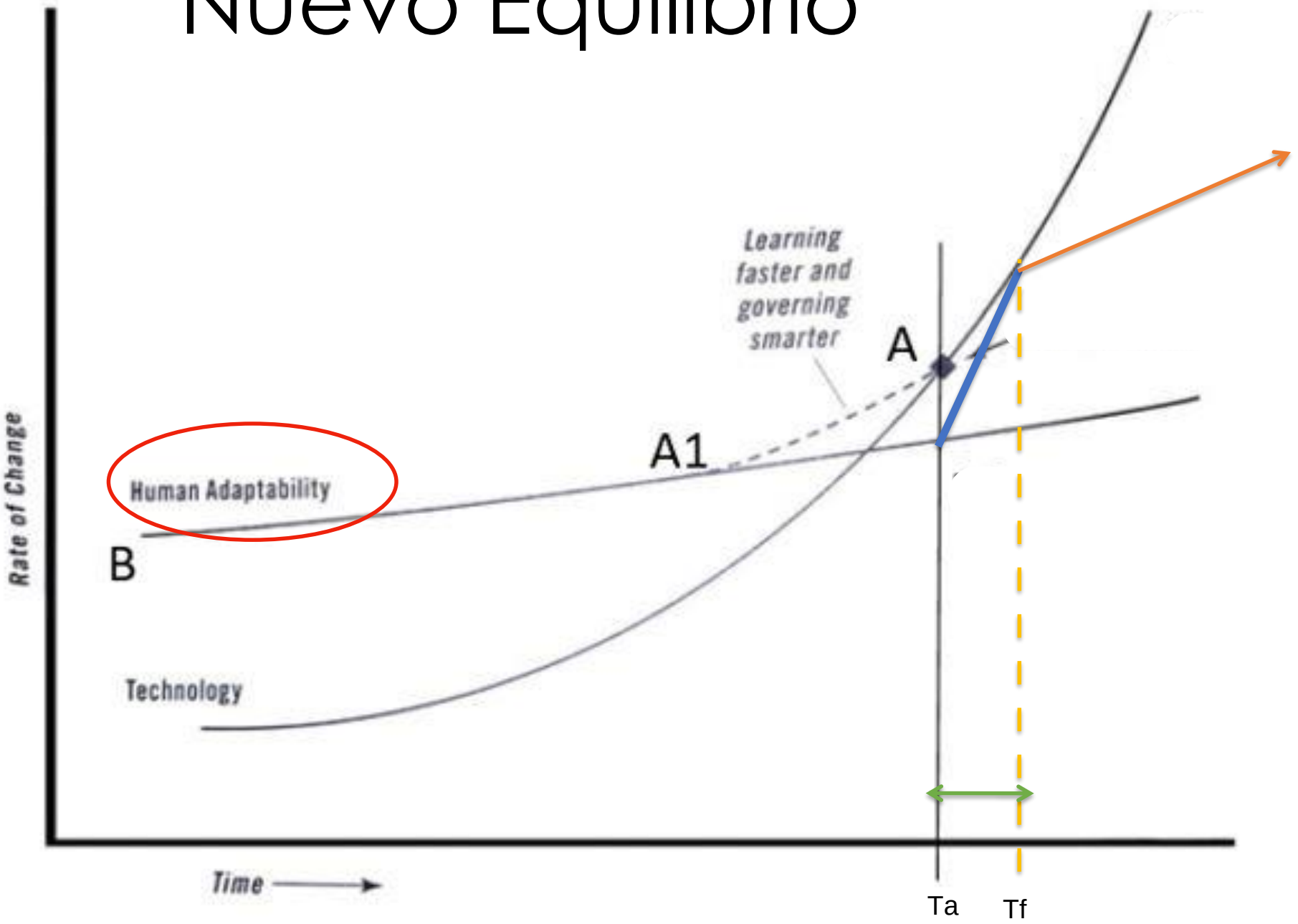

$5 million vs. $400
PRICE OF THE FASTEST SUPERCOMPUTER IN 1975 AND AN IPHONE 4 WITH EQUAL PERFORMANCE

Bureau of Economic Analysis: 1958. Information Technology. New Category

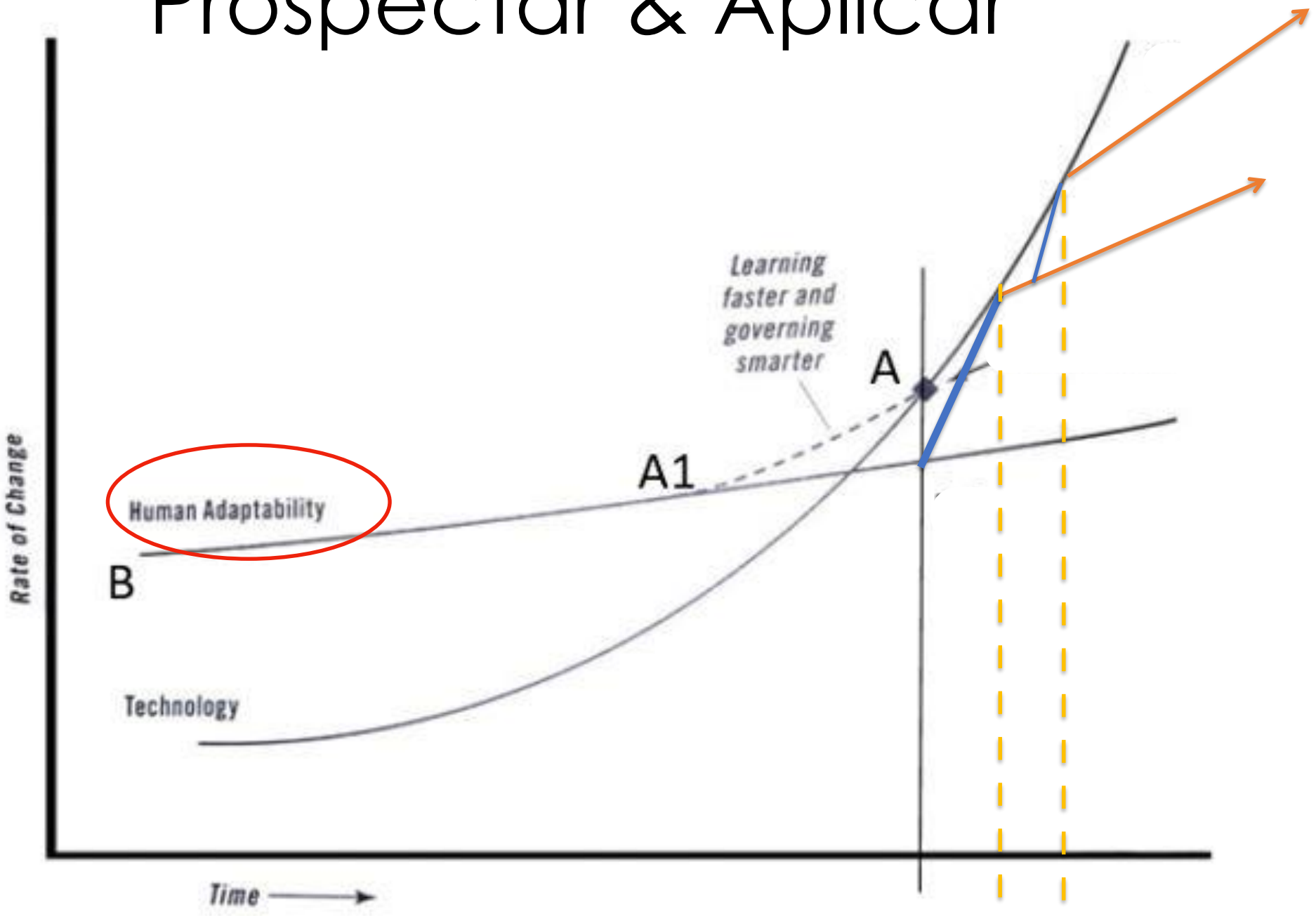
Primer Problema



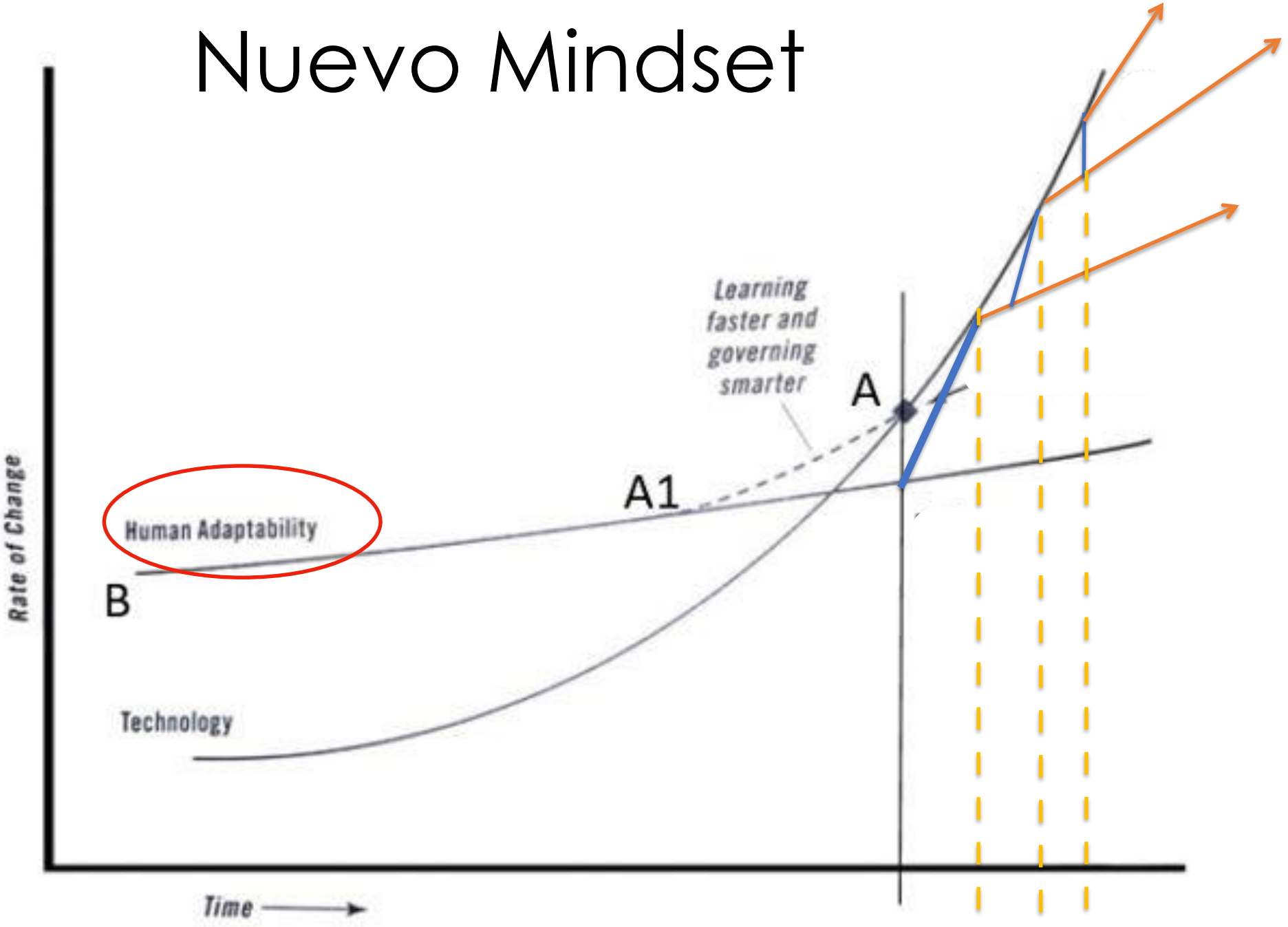
Nuevo Equilibrio



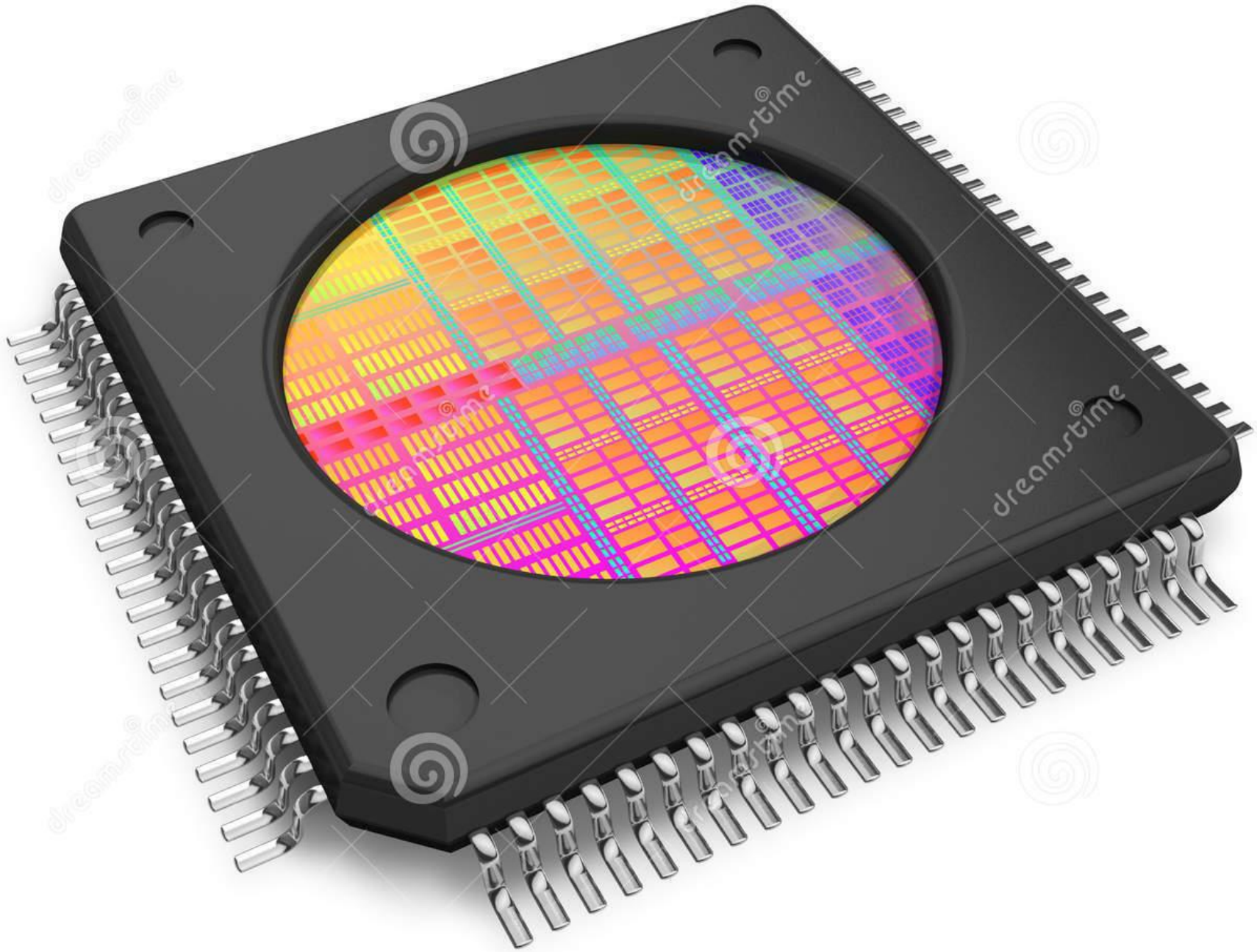
Prospectar & Aplicar

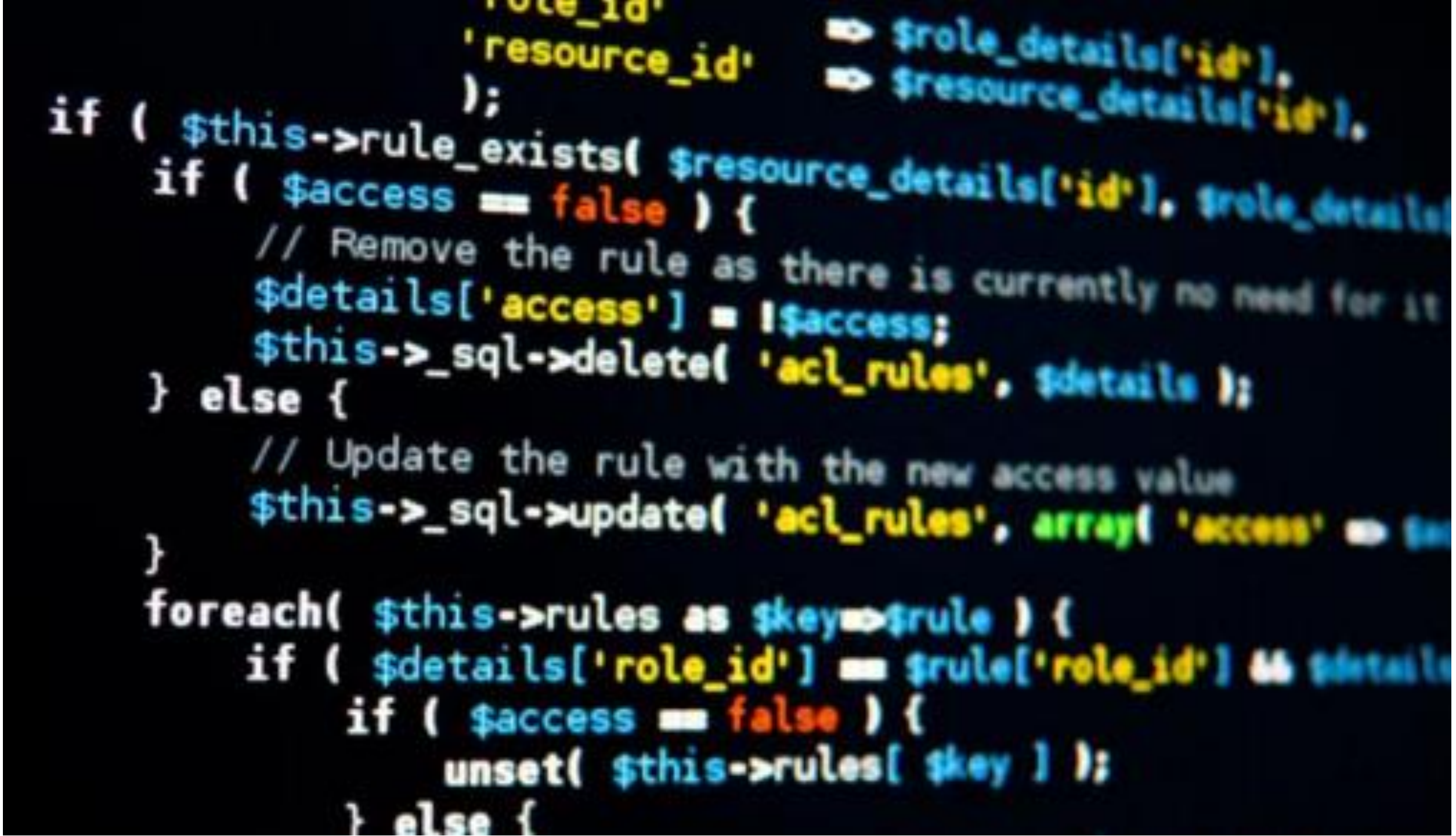


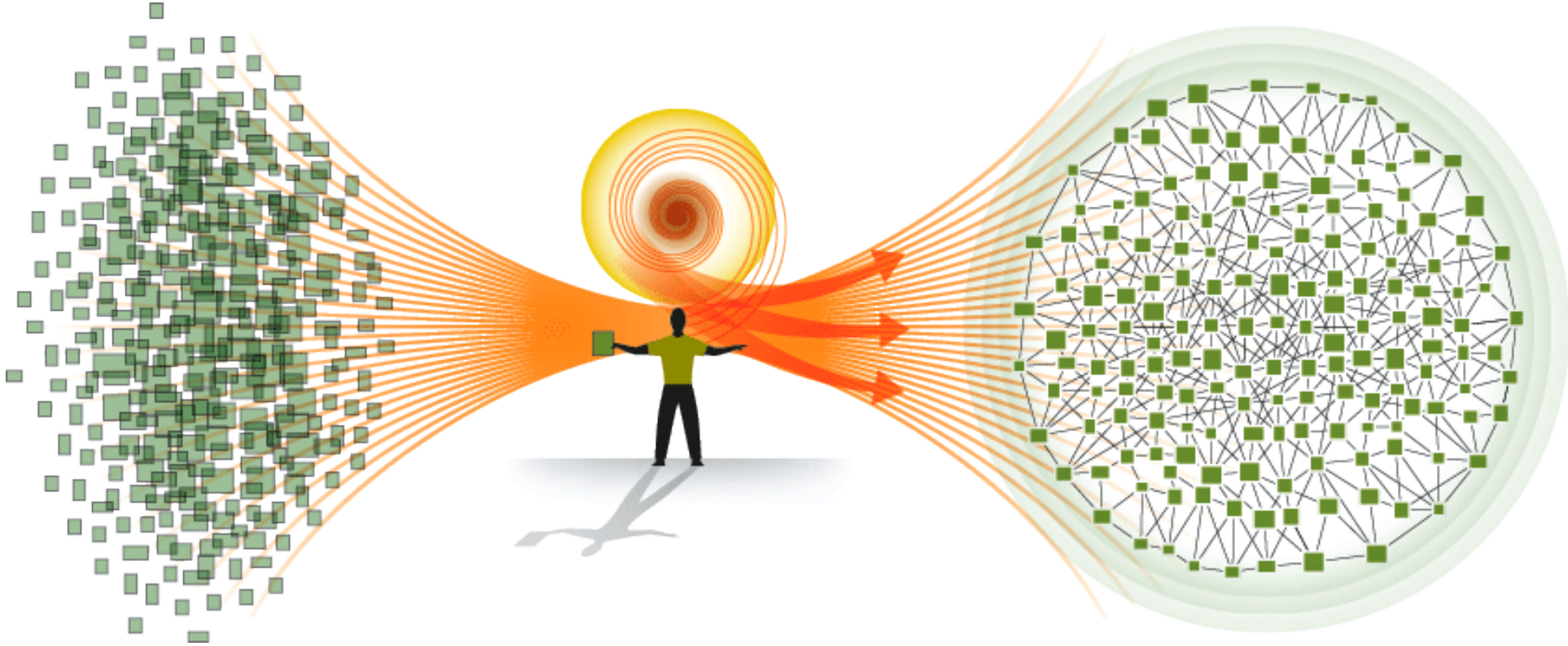
Nuevo Mindset



ACCESSORY BELT DRIVE TENSIONER:
GATES
PISTON RING:
FEDERAL MOGUL
PISTON ROD PROTECTION:
HENNIGES
ENGINE MOUNT:
VIBRACOUSTIC
ECCENTRIC SHAFT:
HIRSCHVOGEL
TILTING SLIDING ROOF:
WEBASTO
HEADLINER:
IAC
A-PILLAR TRIM FASTENER (PLASTIC):
EMKAY TECHNOLOGIES
SHOCK ABSORBER:
ABS MOTOR:
NIDEC MOTORS & ACTUATORS
EXTERIOR AUTO-DIMMING MIRROR:
GENTEX
WINDOW REGULATOR:
MAGNA CLOSURES; MAGNA MIRRORS
DOOR CHECK:
EDSCHA
CONNECTING ROD:
MAHLE
LED DOOR ILLUMINATION:
ARAG ELEKTRONIK
ROCKER PANELS:
PIGUFORM
DOOR HANDLES:
HUF HULSBECK & FURST


dreamstime


'role_id' => $role_details['id'],
'resource_id' => $resource_details['id'],
);
if ($this->rule_exists($resource_details['id'], $role_details
if ($access == false) {
// Remove the rule as there is currently no need for it
$details['access'] = !$access;
$this->_sql->delete('acl_rules', $details);
} else {
// Update the rule with the new access value
$this->_sql->update('acl_rules', array('access' =>
}
foreach($this->rules as $key=>$rule) {
if ($details['role_id'] == $rule['role_id'] &&
if ($access == false) {
unset($this->rules[$key]);
} else {



Una persona sola ya
no lo puede lograr!

“El Nivel Máximo de Innovación Posible, Generable en una Sociedad Depende del Número Máximo de Habitantes de la Región que Cooperan de Forma Directa para ello: El Número N”

Innovation: Virus that is spread by contact

MEDELLÍN TENDRÁ UN CENTRO PARA LA CUARTA REVOLUCIÓN INDUSTRIAL EN RUTA N

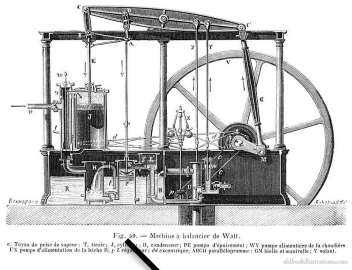
CENTRO DE CREACIÓN DE POLÍTICA PÚBLICA Y DE PROYECTOS PARA LA CUARTA REVOLUCIÓN INDUSTRIAL

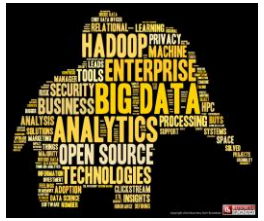
WORLD ECONOMIC FORUM

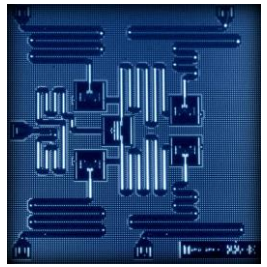
El progreso es de todos | Mincomercio

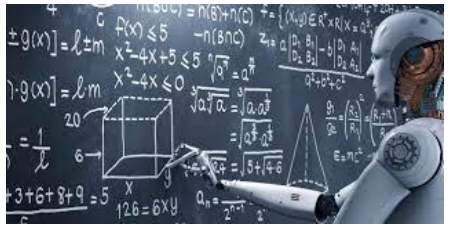
Alcaldía de Medellín
Cuenta con vos

ruta n
MEDELLÍN









1

2

3

4

5

?

1780 1820 1880 1920 1950 1970 2007 2015

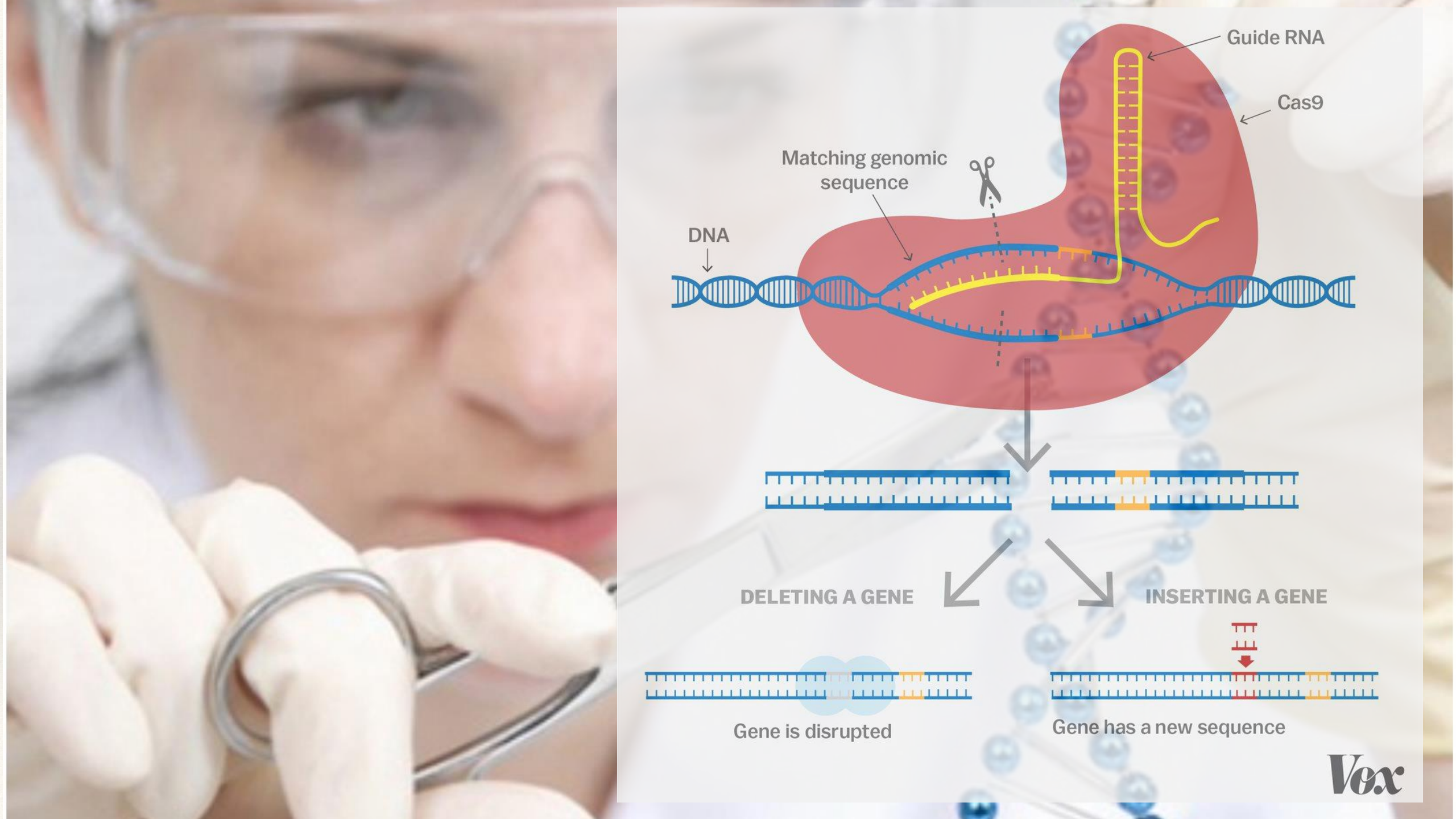
100 Años

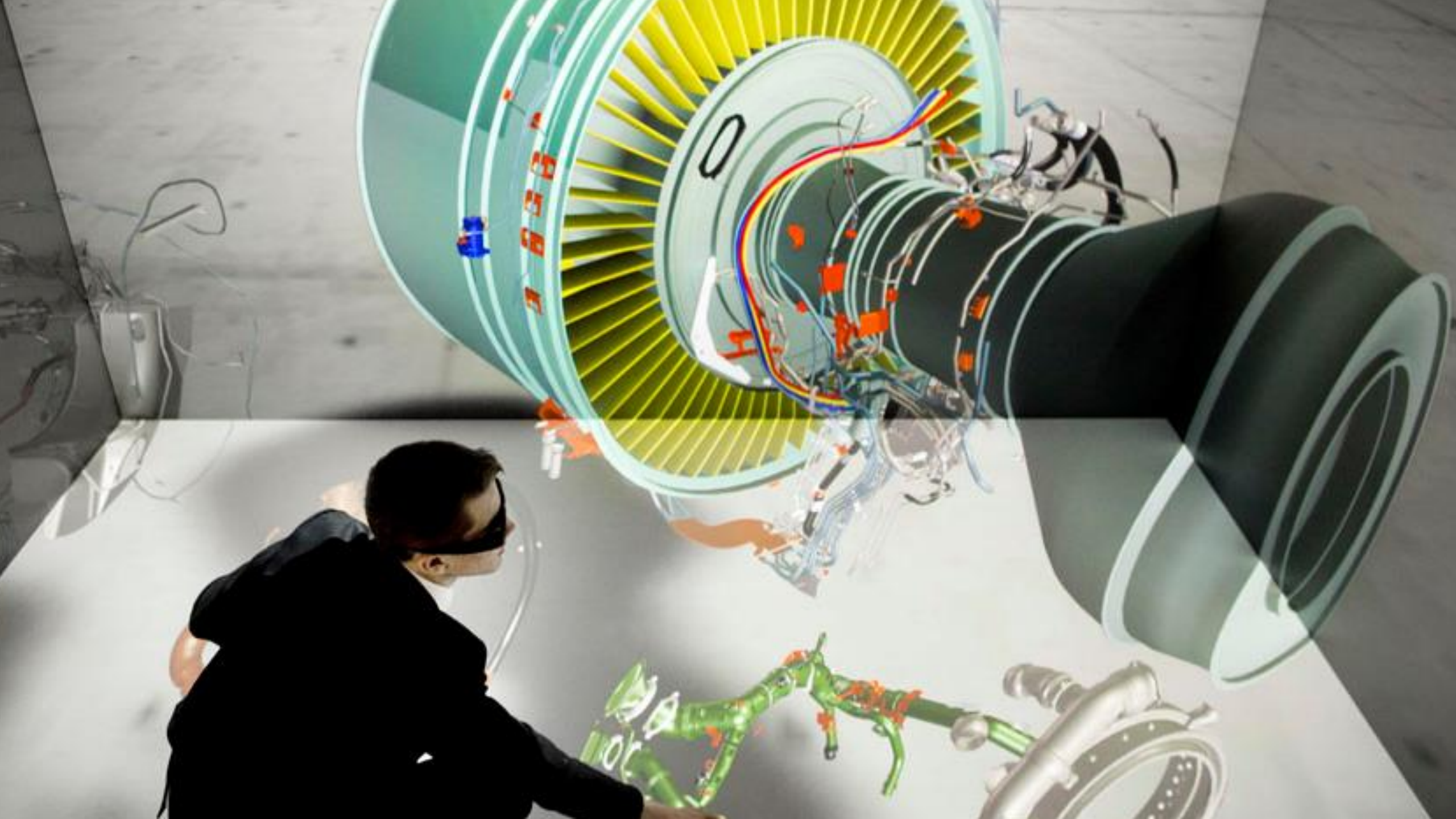
50 Años

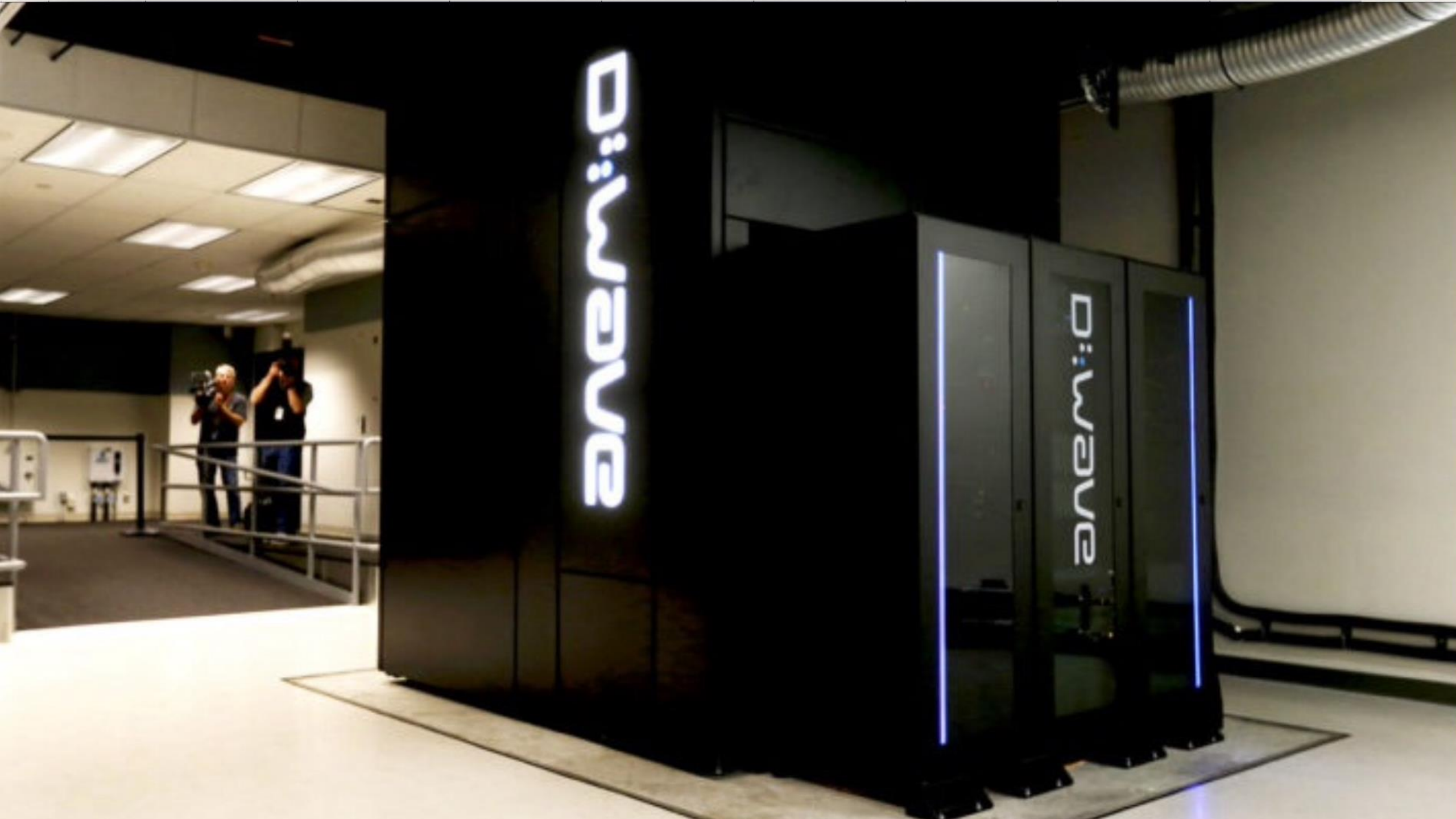
38 A

?

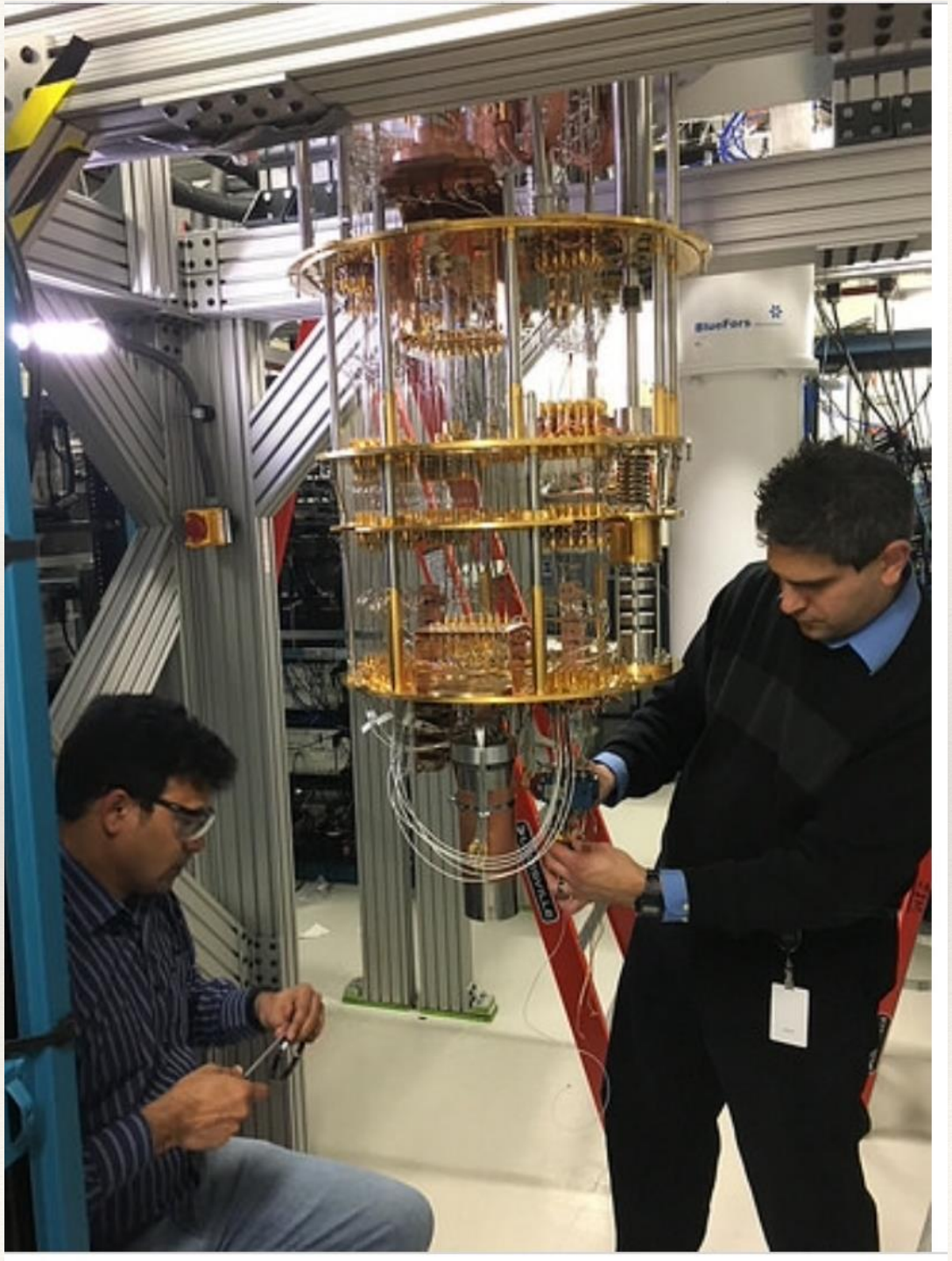
2030-2035

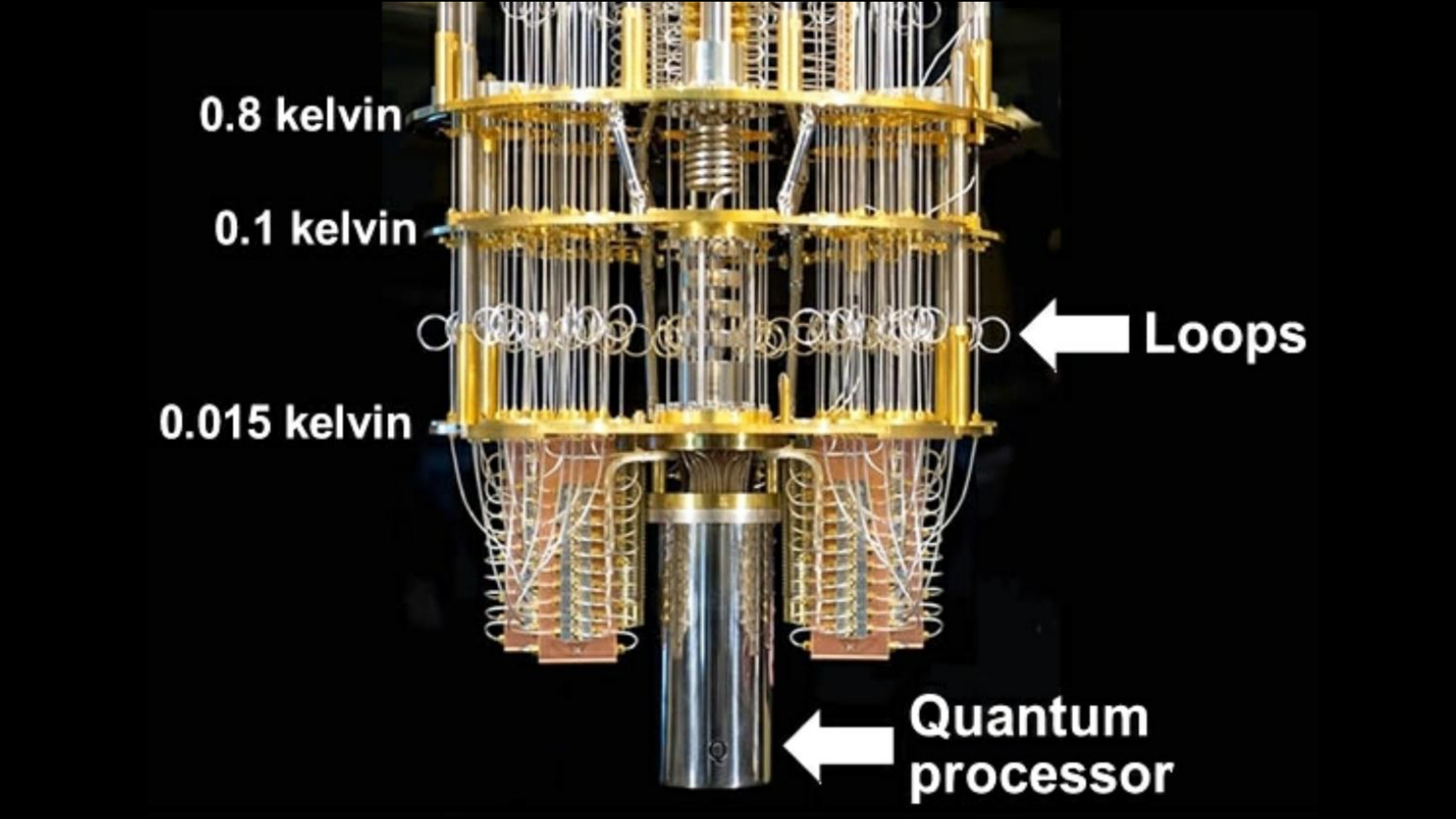

Guide RNA
Cas9
Matching genomic sequence
DNA
DELETING A GENE
INSERTING A GENE
Gene is disrupted
Gene has a new sequence
Vox

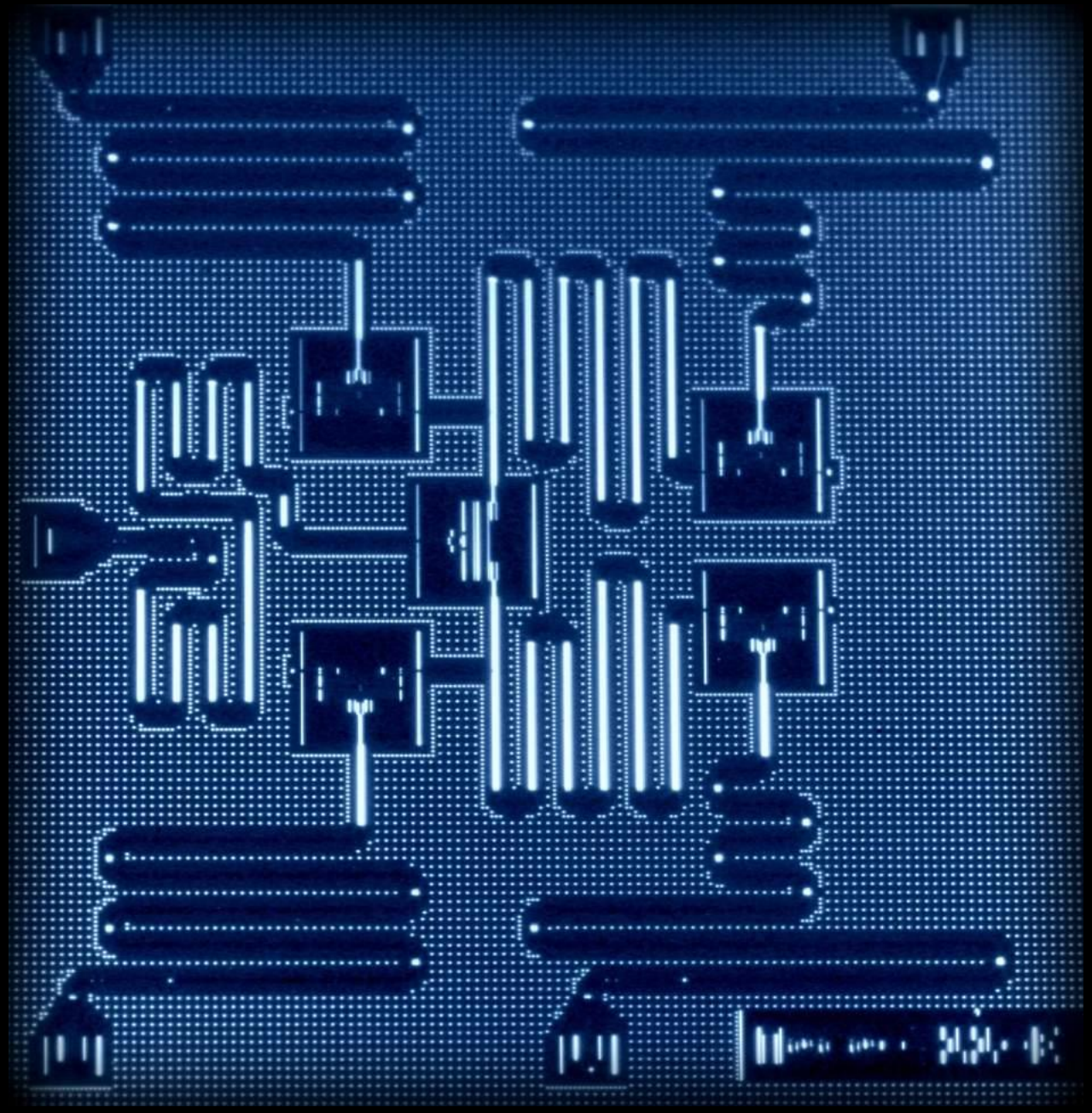



D-Wave
D-Wave

IBM Q

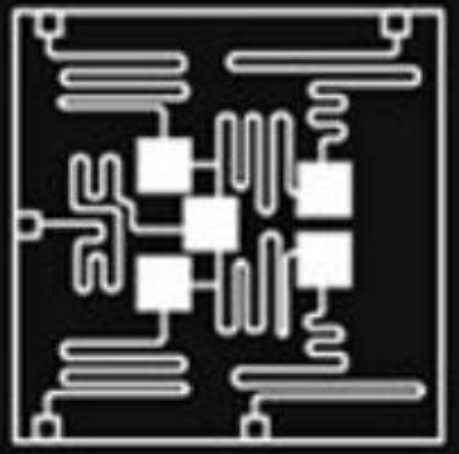

BlueFors


0.8 kelvin
0.1 kelvin
0.015 kelvin
Loops
Quantum processor



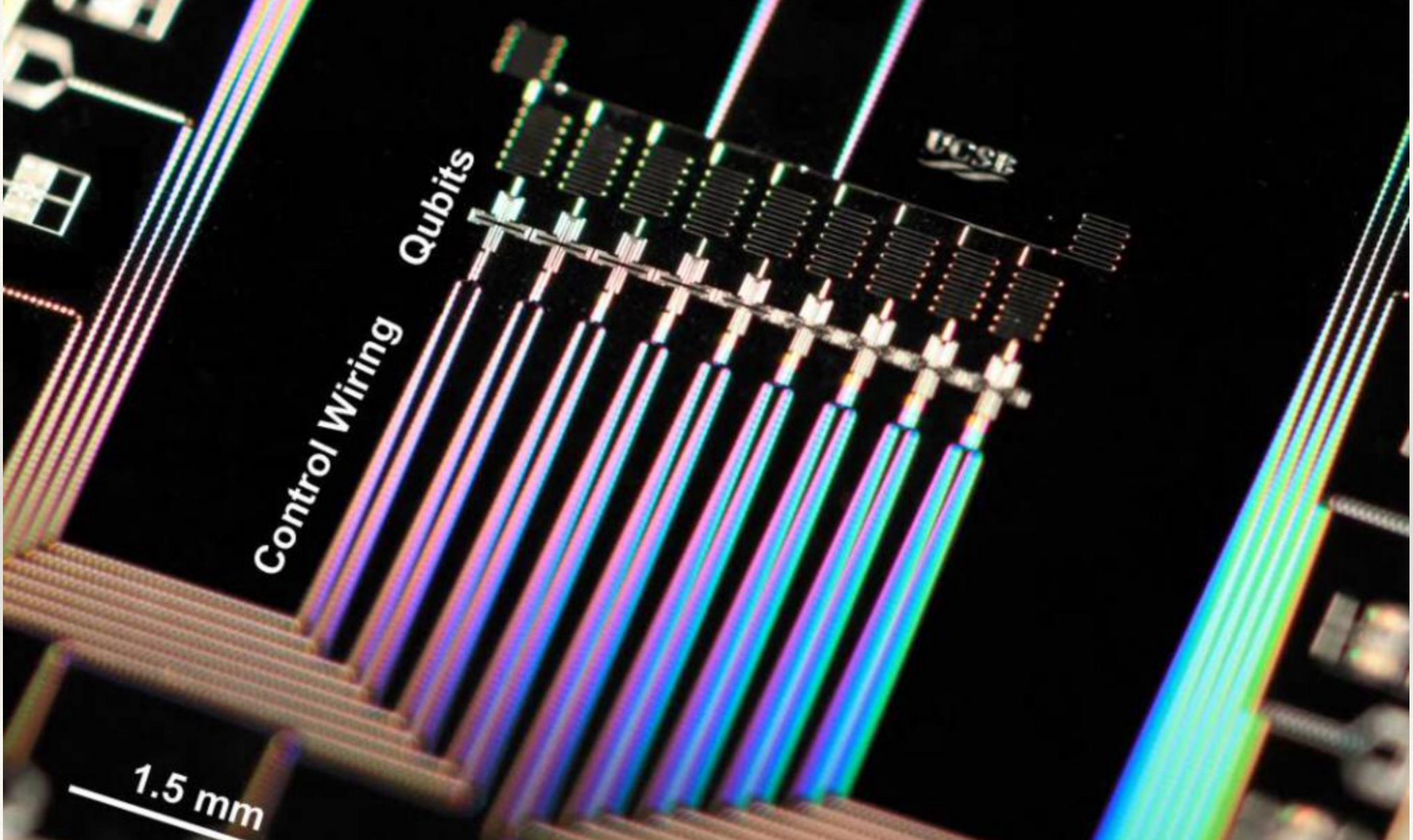
> **IBM Q 5 Tenerife** [ibmqx4]

IBM Q 5 Yorktown [ibmqx2]



	Q0	Q1	Q2	Q3	Q4
Frequency (GHz)	5.28	5.21	5.02	5.28	5.07
T1 (µs)	62.40	55.10	48.40	59.00	53.30
T2 (µs)	77.50	64.00	54.70	57.30	36.40

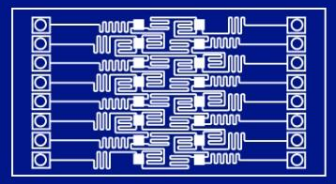
Fridge Temperature: 0.0159 K

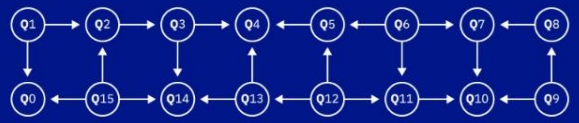

Qubits
Control Wiring
UCSB
1.5 mm

quantumexperience.ng.bluemix.net

Backend: ibmqx5 (16 Qubits)

BETA ACTIVE





	Q0	Q1	Q2	Q3	Q4	Q5	Q6
Gate Error (10^{-3})	2.25	3.36	3.19	2.76	1.51	2.47	1.64
Readout Error (10^{-2})	5.39	4.71	4.18	4.85	6.27	5.43	5.01
MultiQubit Gate Error (10^{-2})		CX1_0 4.36	CX2_3 4.41	CX3_4 5.44		CX5_4 3.45	CX6_5 4.48
		CX1_2 4.50		CX3_14 5.12			CX6_7 2.74
							CX6_1 2.14

Date Calibration: 2017-11-28 07:32:38 Fridge Temperature: 0.0133507 K

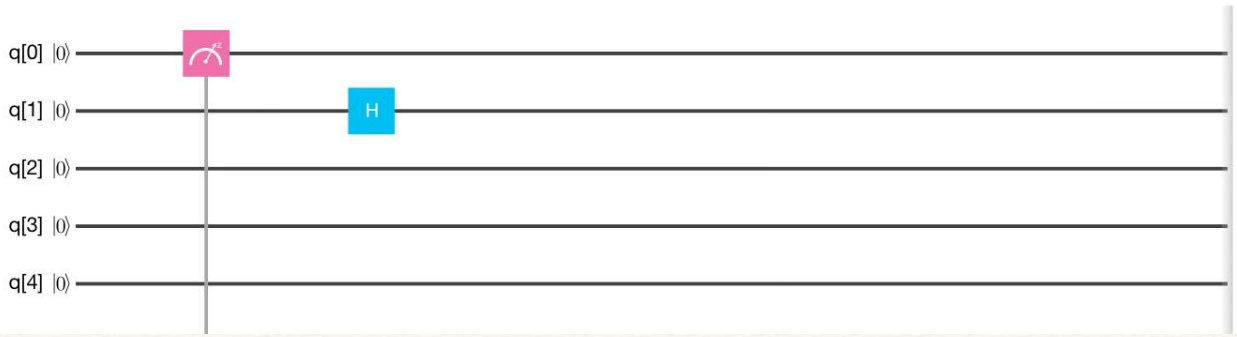
More details

Backend: ibmqx2 (5 Qubits) MAINTENANCE

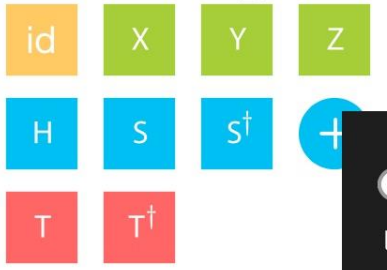
New experiment

New Save Save as

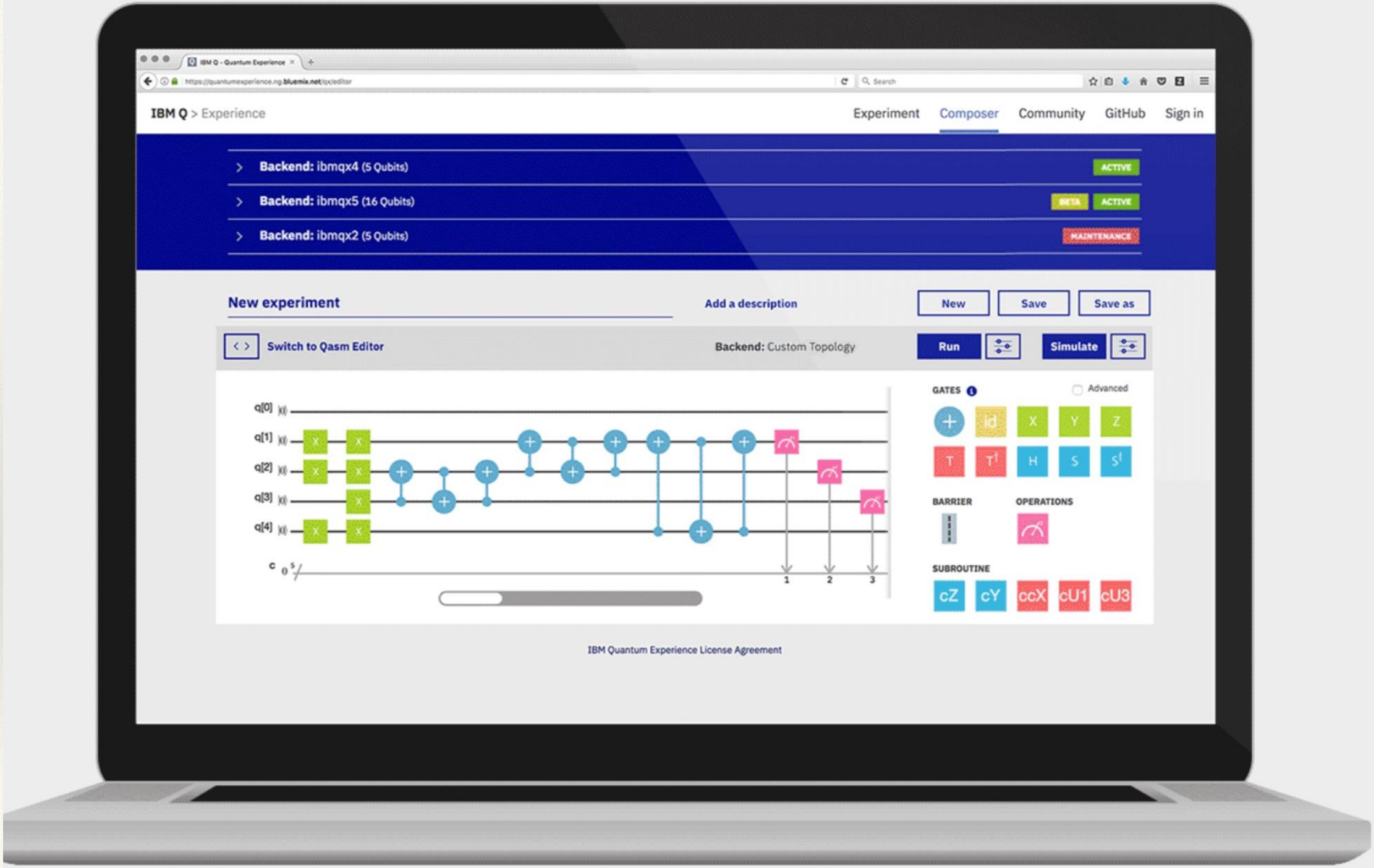
Switch to Qasm Editor Backend: ibmqx4 Experiment Units: 3 Run Simulate



GATES Advanced



light


IBM Q - Quantum Experience
https://quantumexperience.ng.bluemix.net/qx/editor
Search
IBM Q > Experience
Experiment
Composer
Community
GitHub
Sign in
Backend: ibmqx4 (5 Qubits)
ACTIVE
Backend: ibmqx5 (16 Qubits)
BETA
ACTIVE
Backend: ibmqx2 (5 Qubits)
MAINTENANCE
New experiment
Add a description
New
Save
Save as
Switch to Qasm Editor
Backend: Custom Topology
Run
Simulate
q[0]
q[1]
q[2]
q[3]
q[4]
c 0 5
1
2
3
GATES
Advanced
id
X
Y
Z
T
T†
H
S
S†
BARRIER
OPERATIONS
SUBROUTINE
cZ
cY
ccX
cU1
cU3
IBM Quantum Experience License Agreement

iPad 10:01 a. m.
forbes.com

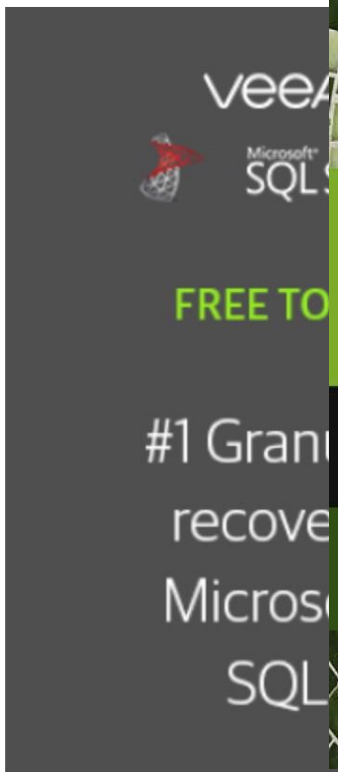
SEP 5, 2017 @ 12:28 AM 22,054 The Little Black Boo

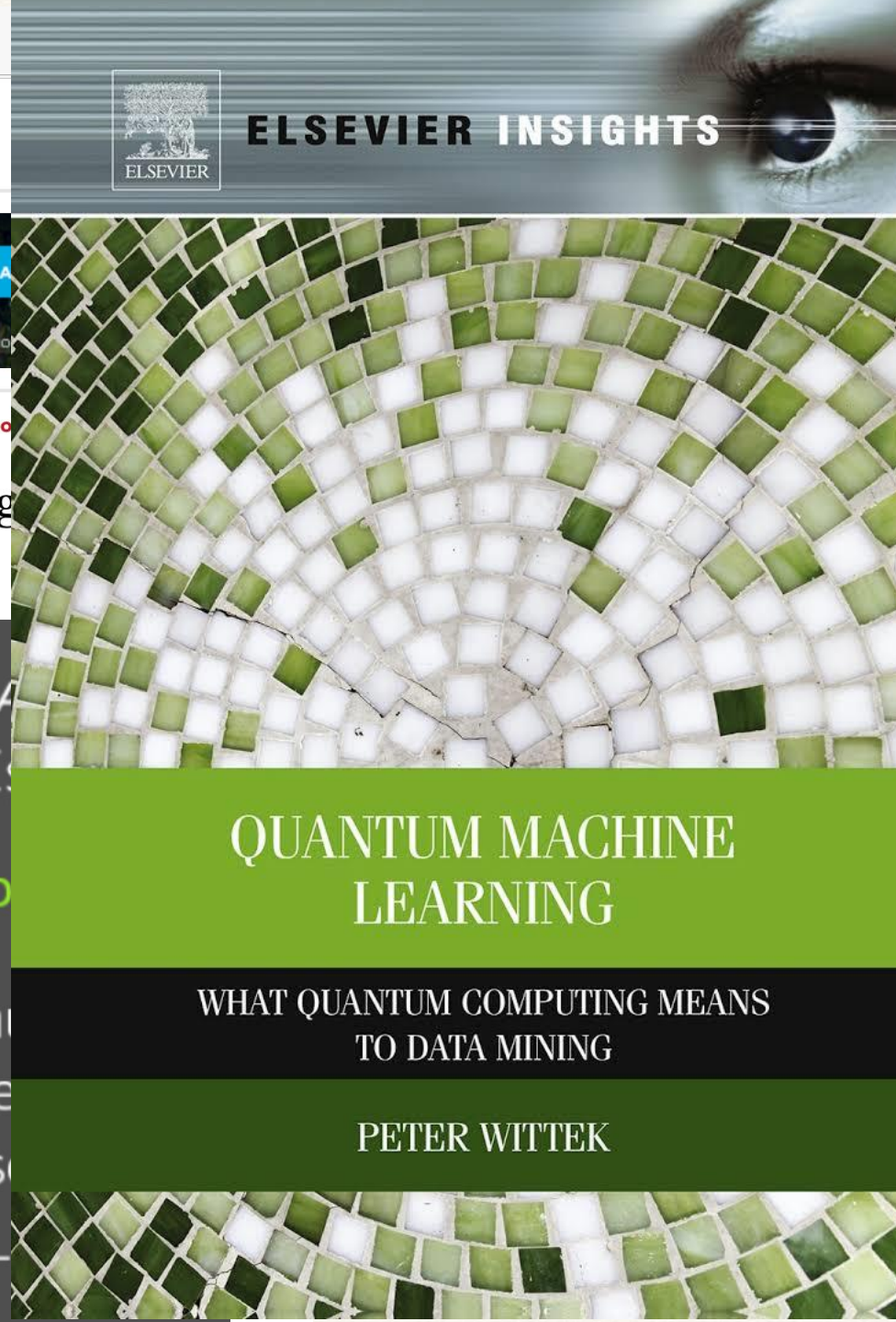
How Quantum Computers Will Revolutionize Artificial Intellig Machine Learning And Big Data

Bernard Marr, CONTRIBUTOR
FULL BIO

Opinions expressed by Forbes Contributors are their own.

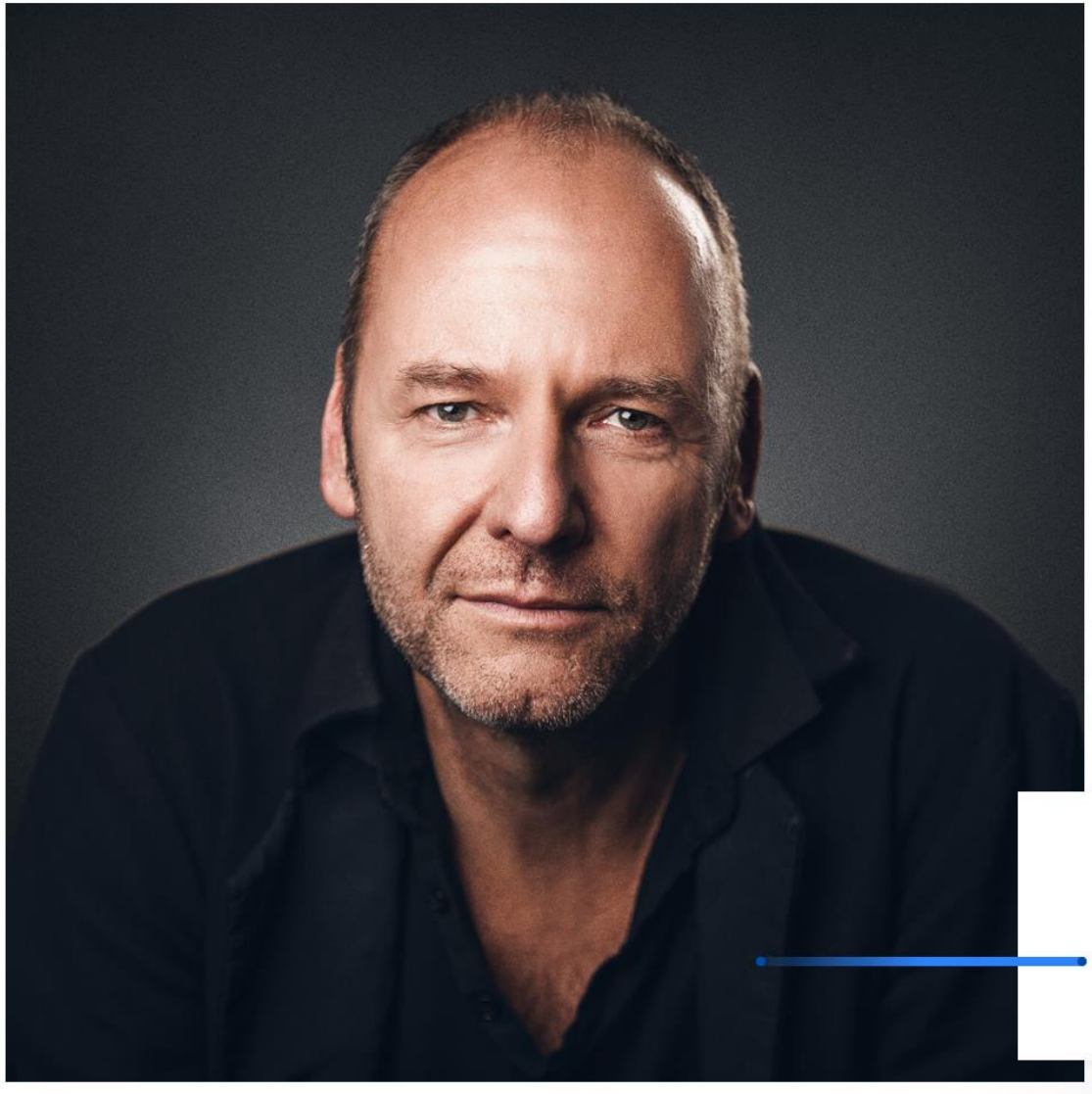
We produce 2.5 exabytes of data every day. That's equivalent to 250,000 Libraries of Congress or the content of 5 million laptops. Every minute of every day 3.2 billion global internet users continue to feed the data banks with 9,722 pins on Pinterest, 347,222 tweets, 4.2 million Facebook likes plus ALL the other data we create by taking pictures and videos, saving documents, opening accounts and more.





SHARE

TRENDING

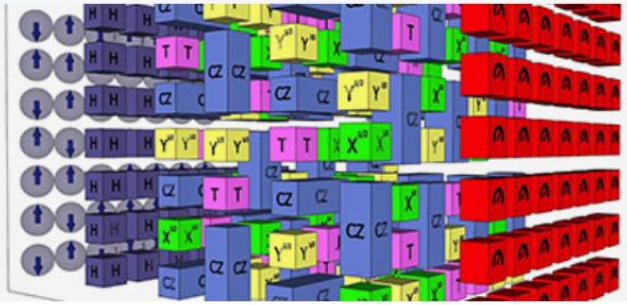


"Quantum Artificial Intelligence will enhance the most consequential of human activities, explaining observations of the world around us."

Hartmut Neven

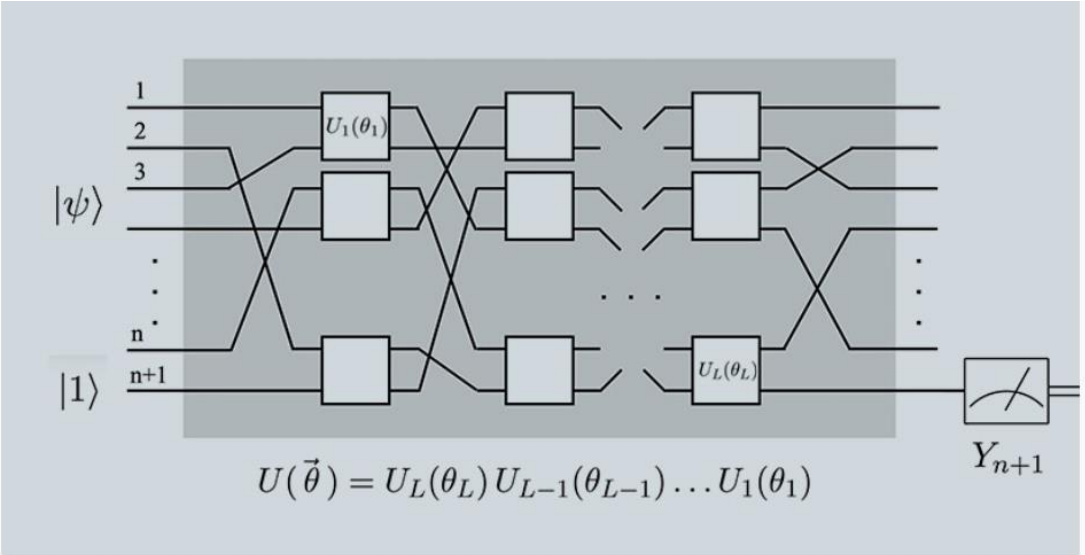
Engineering Director

Our work



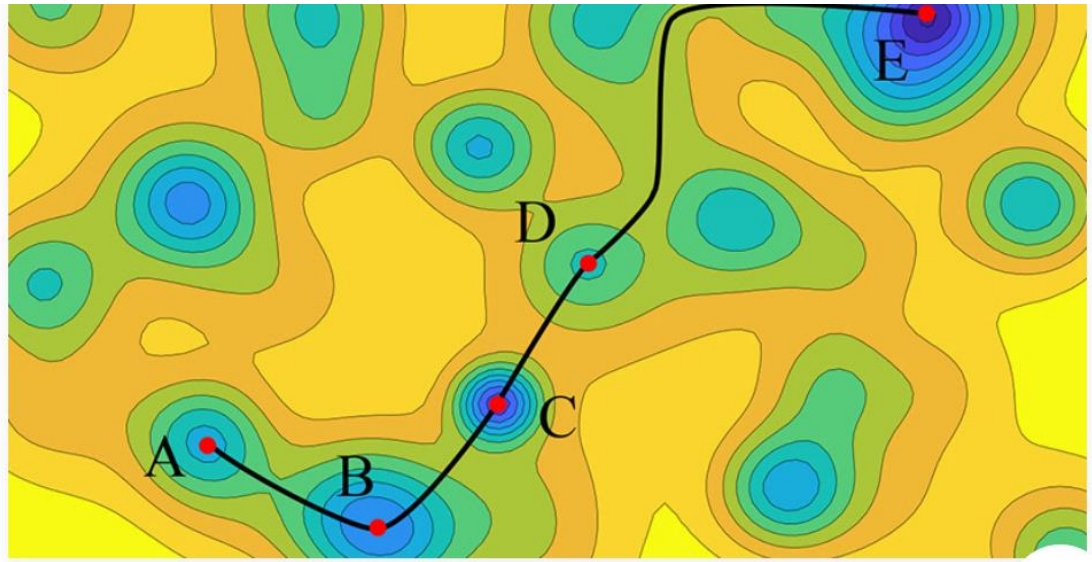
The Question of Quantum Supremacy

Theoretical foundation for our research to demonstrate a computational task that is prohibitively hard for today's classical computers but which can be carried out experimentally with our quantum processors.



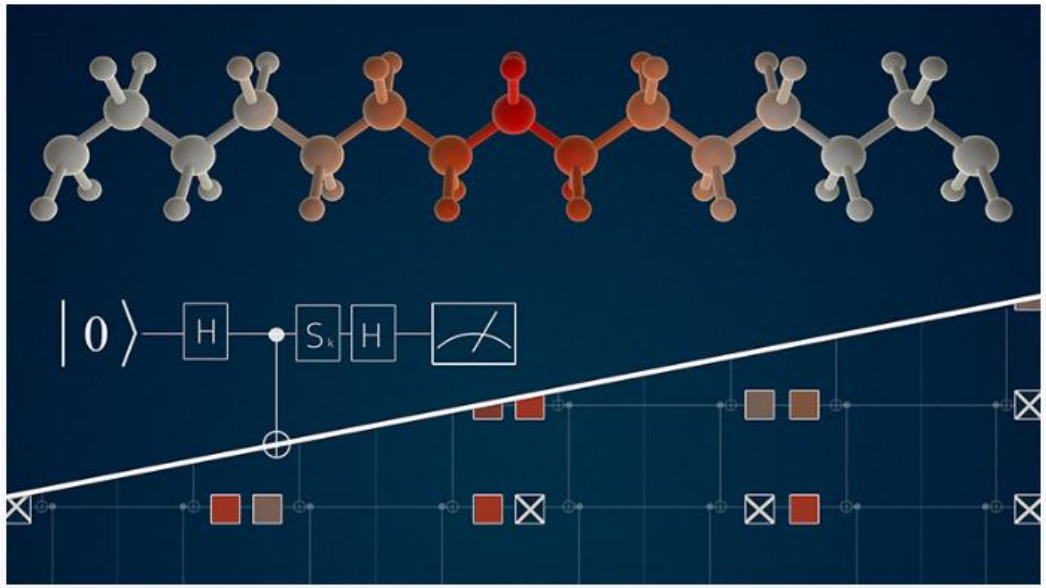
Quantum Machine Learning

We are developing hybrid quantum-classical machine learning techniques on near-term quantum devices. We are studying universal quantum circuit learning for classification and clustering of quantum and classical data. We are also interested in generative and discriminative quantum neural networks, that could be used as quantum repeaters and state purification units within quantum communication networks, or for verification of other quantum circuits.



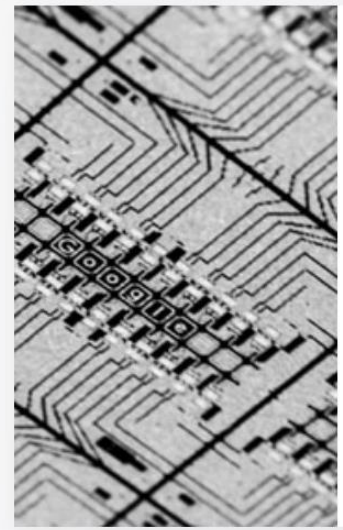
Quantum Optimization

Discrete optimizations in aerospace, automotive, and other industries may benefit from hybrid quantum-classical optimization, for example simulated annealing, quantum assisted optimization algorithm (QAOA) and quantum enhanced population transfer may have utility with today's processors.



Quantum Simulation

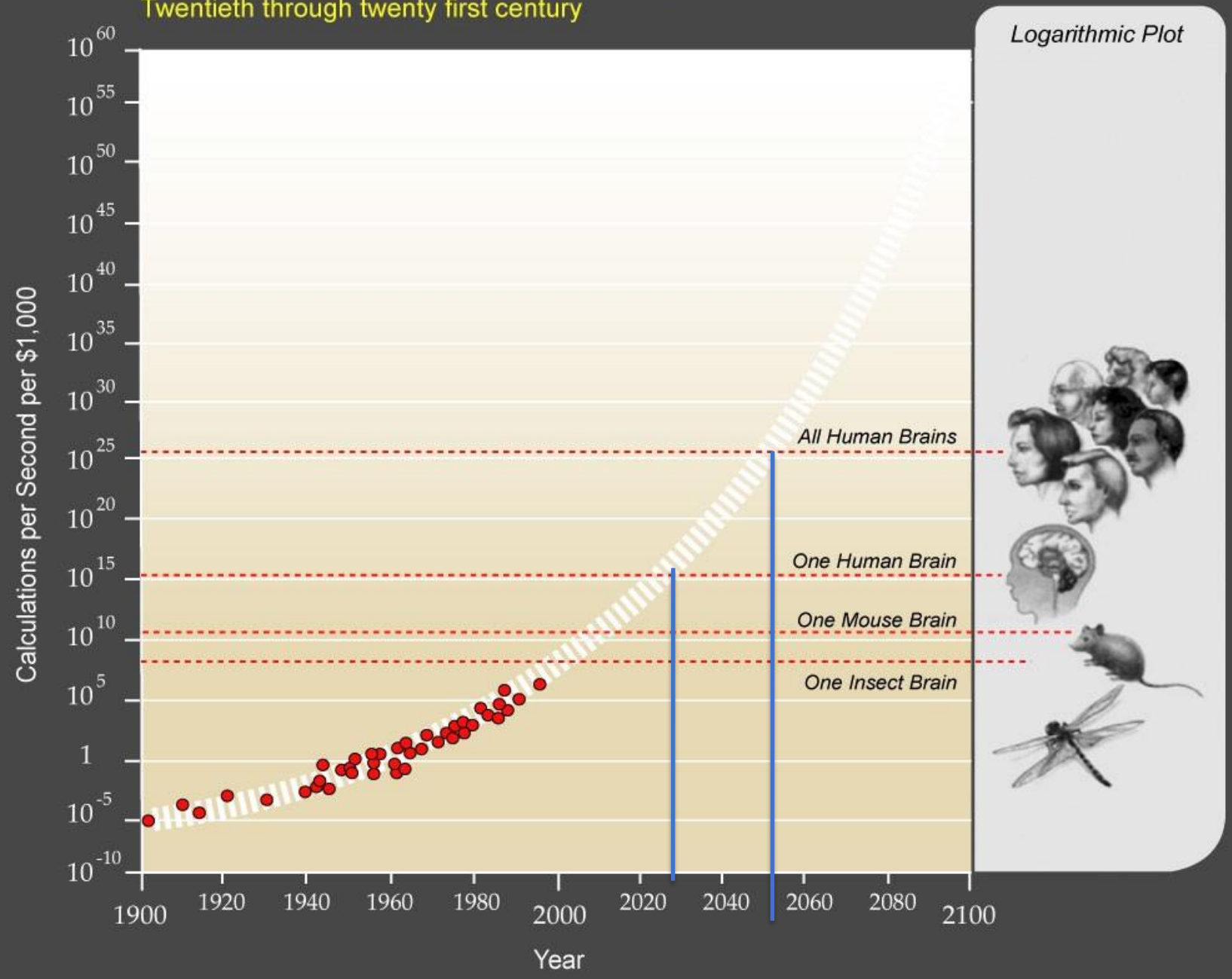
design of new materials and elucidation of plex physics through accurate simulations of chemistry and condensed matter models are among the most promising applications of quantum computing.



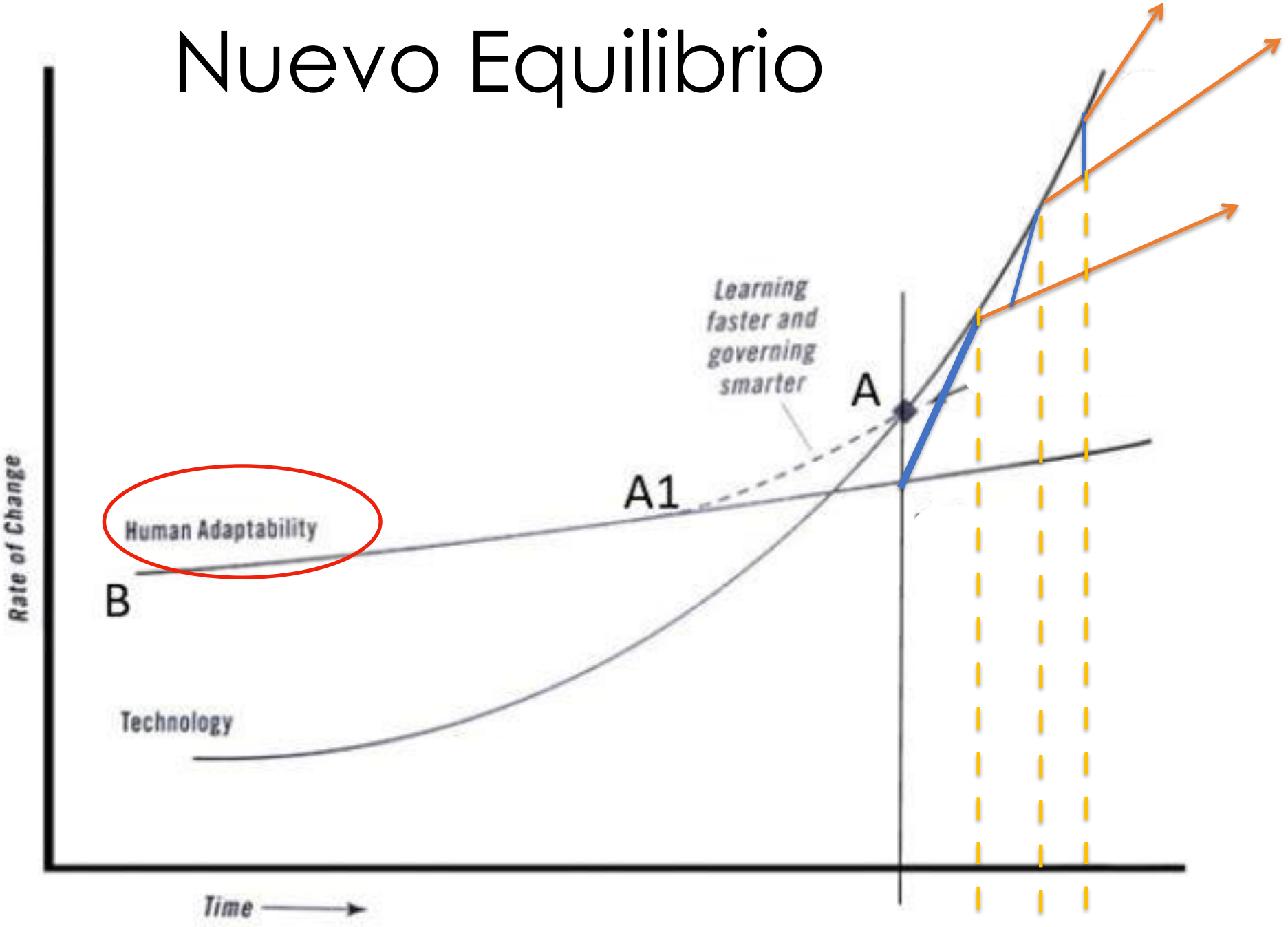
Reformulating Chemistry for More Efficient Quantum Computation

We show how molecules can be represented on quantum computers to simplify the...

THE
TRANSHUMAN
CODE
MANAGING THE FUTURE OF
HUMANITY AND TECHNOLOGY


Exponential Growth of Computing
Twentieth through twenty first century
Logarithmic Plot
Calculations per Second per $1,000
10^60
10^55
10^50
10^45
10^40
10^35
10^30
10^25
10^20
10^15
10^10
10^5
1
10^-5
10^-10
All Human Brains
One Human Brain
One Mouse Brain
One Insect Brain
1900
1920
1940
1960
1980
2000
2020
2040
2060
2080
2100
Year

Nuevo Equilibrio



ARTICULATION

ACCENTURE
ACI
ALGAR TECHNOLOGY
AMERCIAS BPS HP
ARBUSTA
BID
COMFAMA
DEVF
ECOPETROL
EMPIRICUS
FORGES
GENIUS
GLOBANT ONE LINK
GLOT
GRUPO BANCOLOMBIA
GRUPO KONECTA/ ALLUS GLOBAL BPO
HOLBERTON
HOLCREST
HUGE
INMOBILIARIA MARAVILLA S.A.S
(IBM)
INTERNATIONAL YOUTH FOUNDATION
INTERSOFTWARE
LENOVO
LINKED IN
MAKAIA
MAEFLORESTA
MICROSOFT
NIPU
OWENS ILLINOIS
PLATZI
PROANTIOQUIA
PROTECCION
RUTA N
SANA COMMERCE
SAPIENCIA
SECRETARIA DE DESARROLLO ECONOMICO
SECRETARIA DE EDUCACION
SECRETARIA DE JUVENTUD
SCHNEIDER ELECTRIC
SENA
STANLEY BLACK AND DECKER
SURA ASSET MANAGEMENT
TEAM INTERNATIONAL SAS
THE VALLEY
TELECINCO
UPS
YUXI PACIFIC

HUMAN-CENTERED AI
Building Trust, Democracy, and Human Rights by Design

1:49 p. m. Mié 6 de mar. 90 %

Andrew Ng
1.177 Tweets

Se unió en noviembre de 2010

399 Siguiendo **382.888** Seguidores

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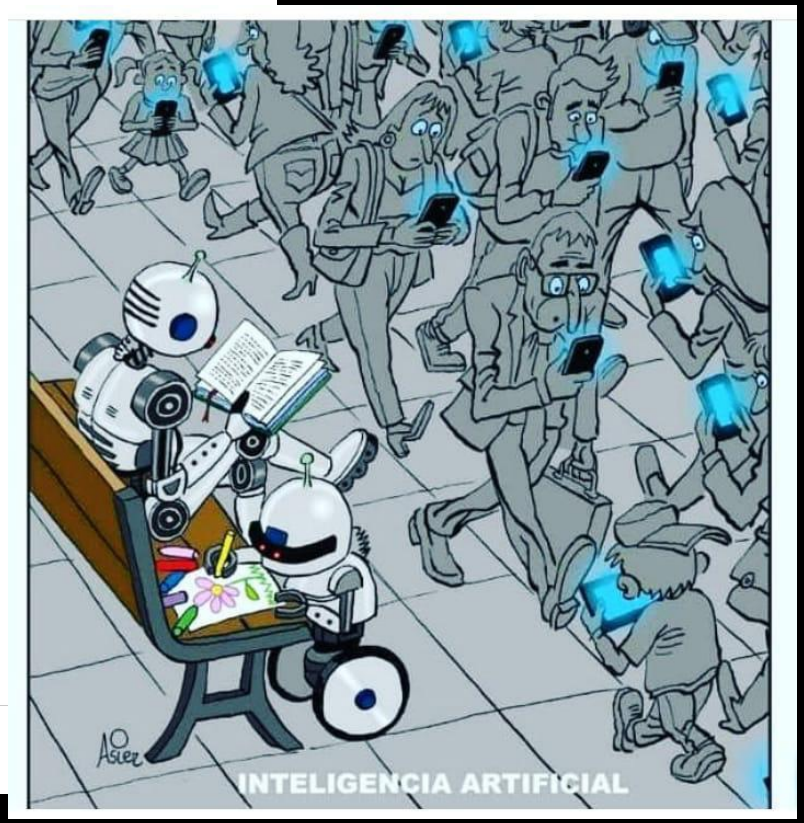

‘AI IS THE NEW ELECTRICITY’

AI FUND

“Just as electricity transformed almost everything 100 years ago, today I actually have a hard time thinking of an industry that I don’t think AI will transform in the next several years.”

Andrew Ng

Former chief scientist at Baidu, Co-founder at Coursera

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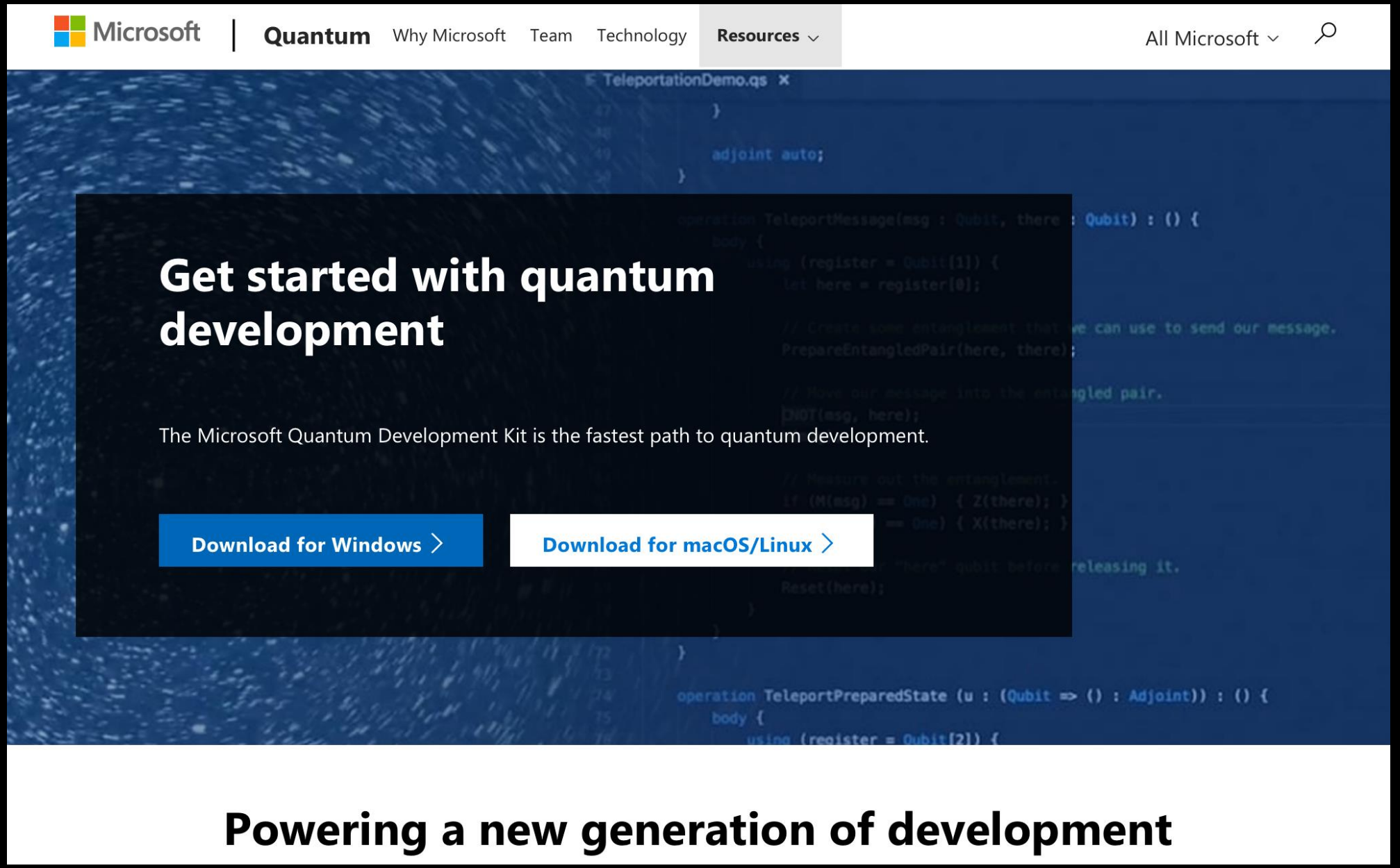

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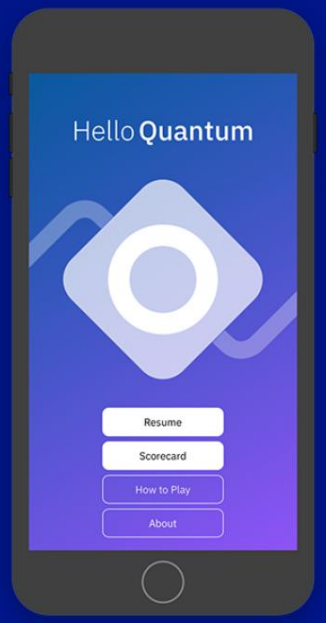

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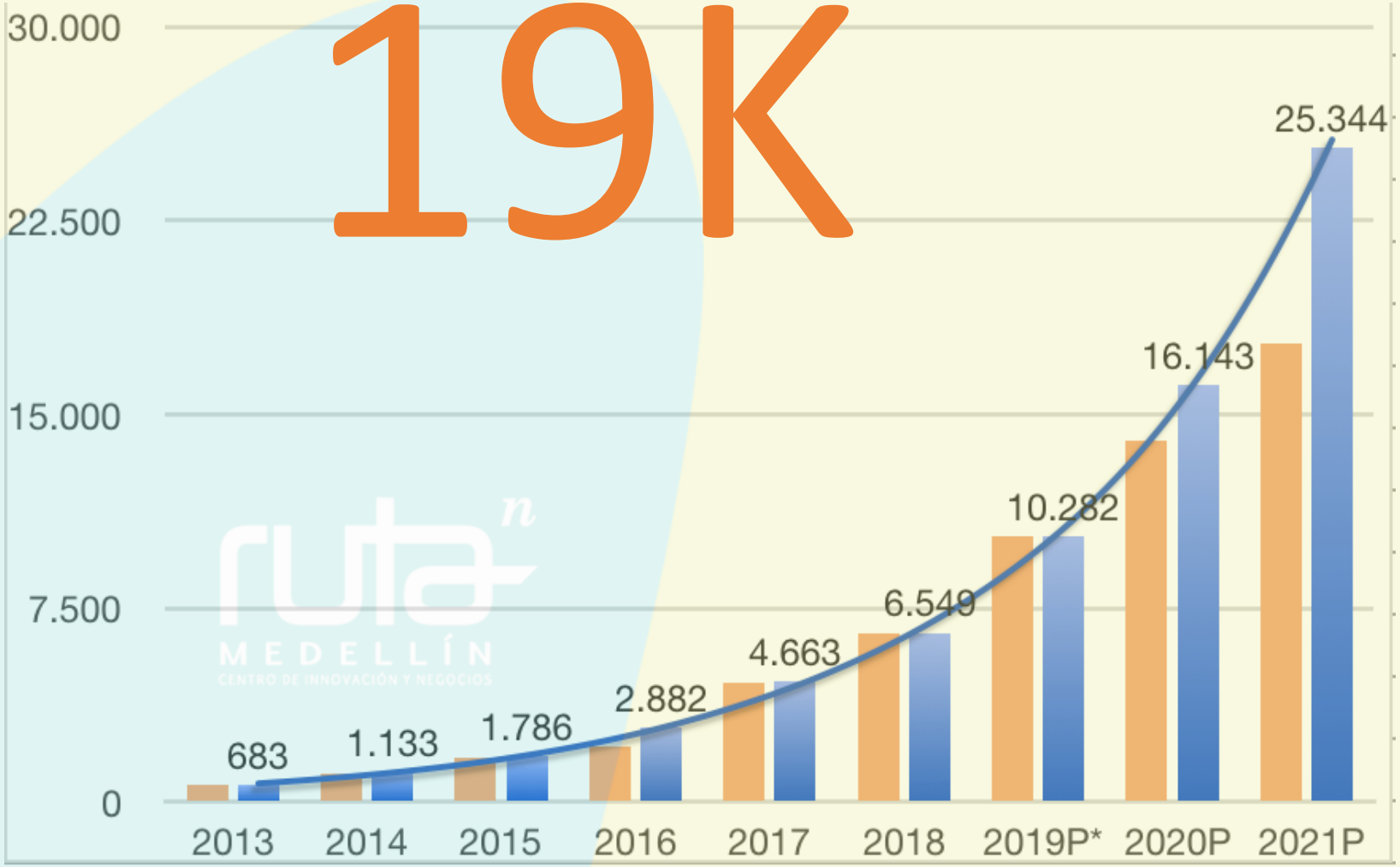
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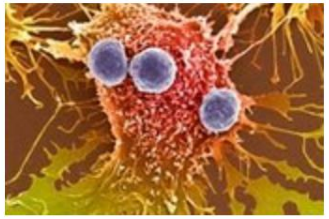

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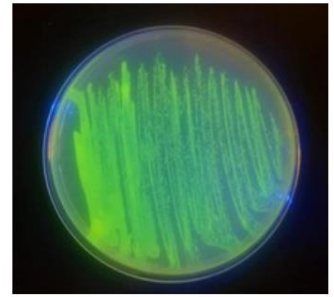

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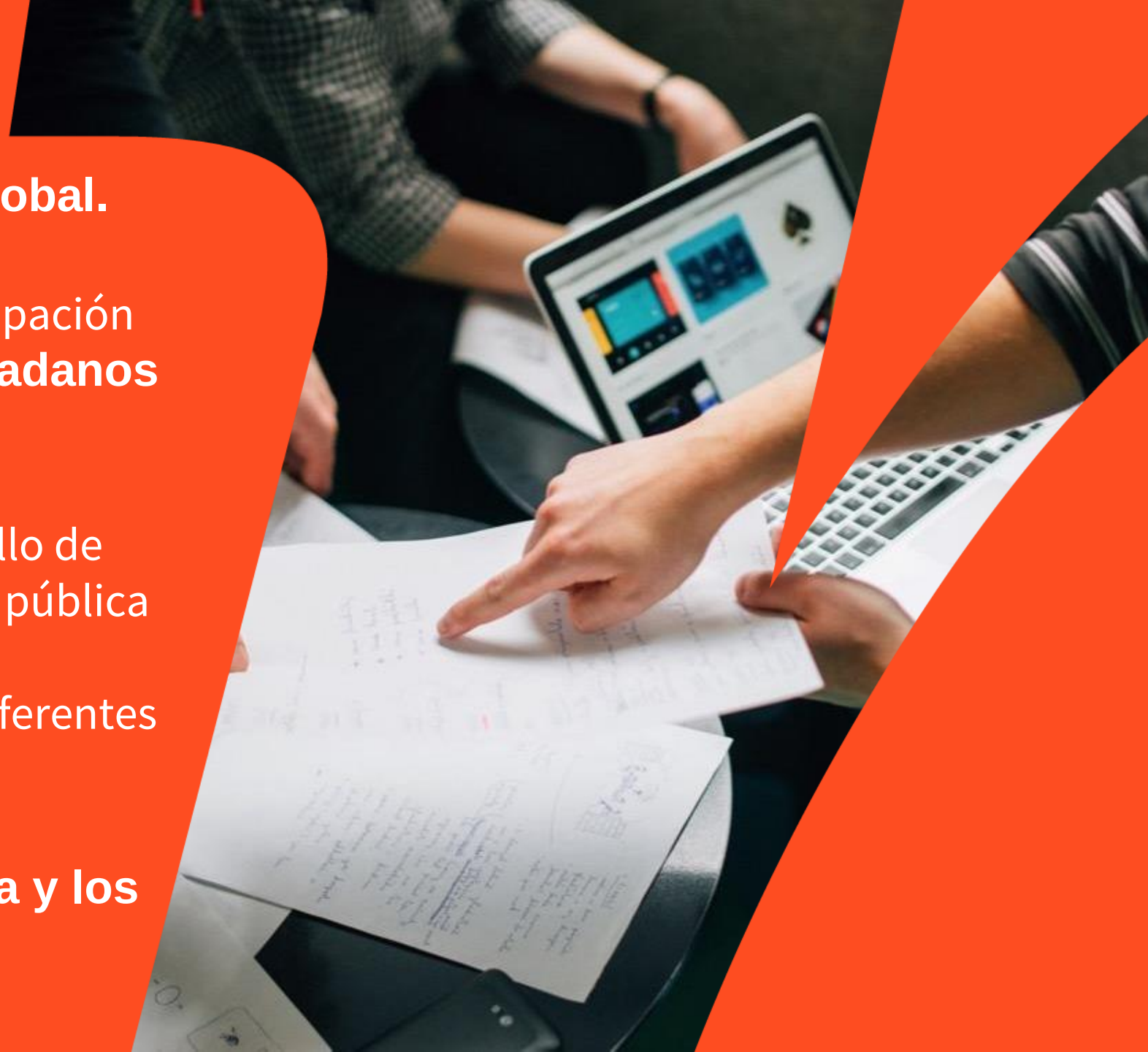

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