

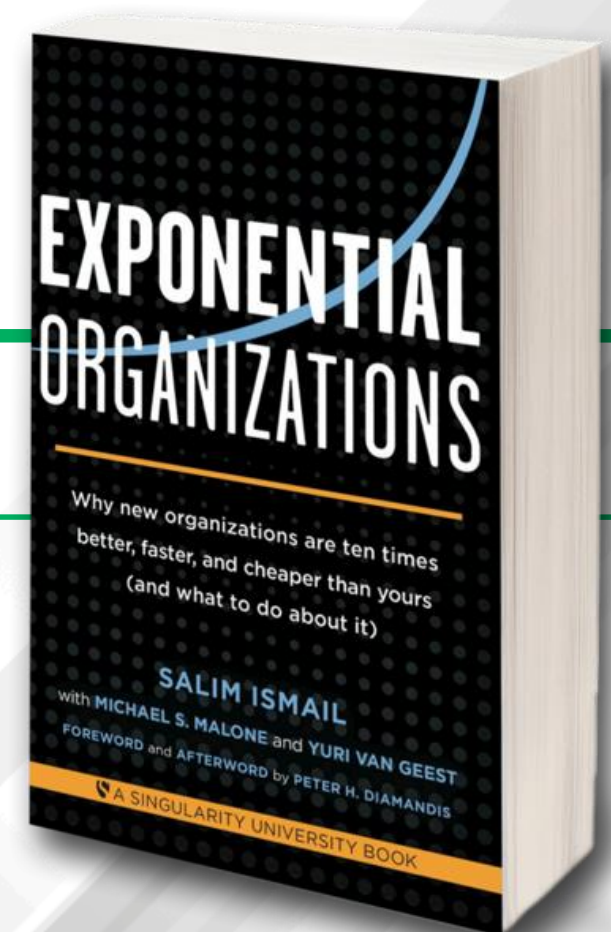
EXPONENTIAL DISRUPTION

Information Layers



New Breakthroughs

Digitize
Disrupt
Demonetize
Democratize



SALIM ISMAIL

// Chairman, Co-Founder
ExO Works, Fastrack Institute

// Founding Executive Director
Singularity University

// Board member,
X Prize Foundation

// Vice President
Yahoo

@salimismail



Key Tensions/Questions

// Physical vs Digital?

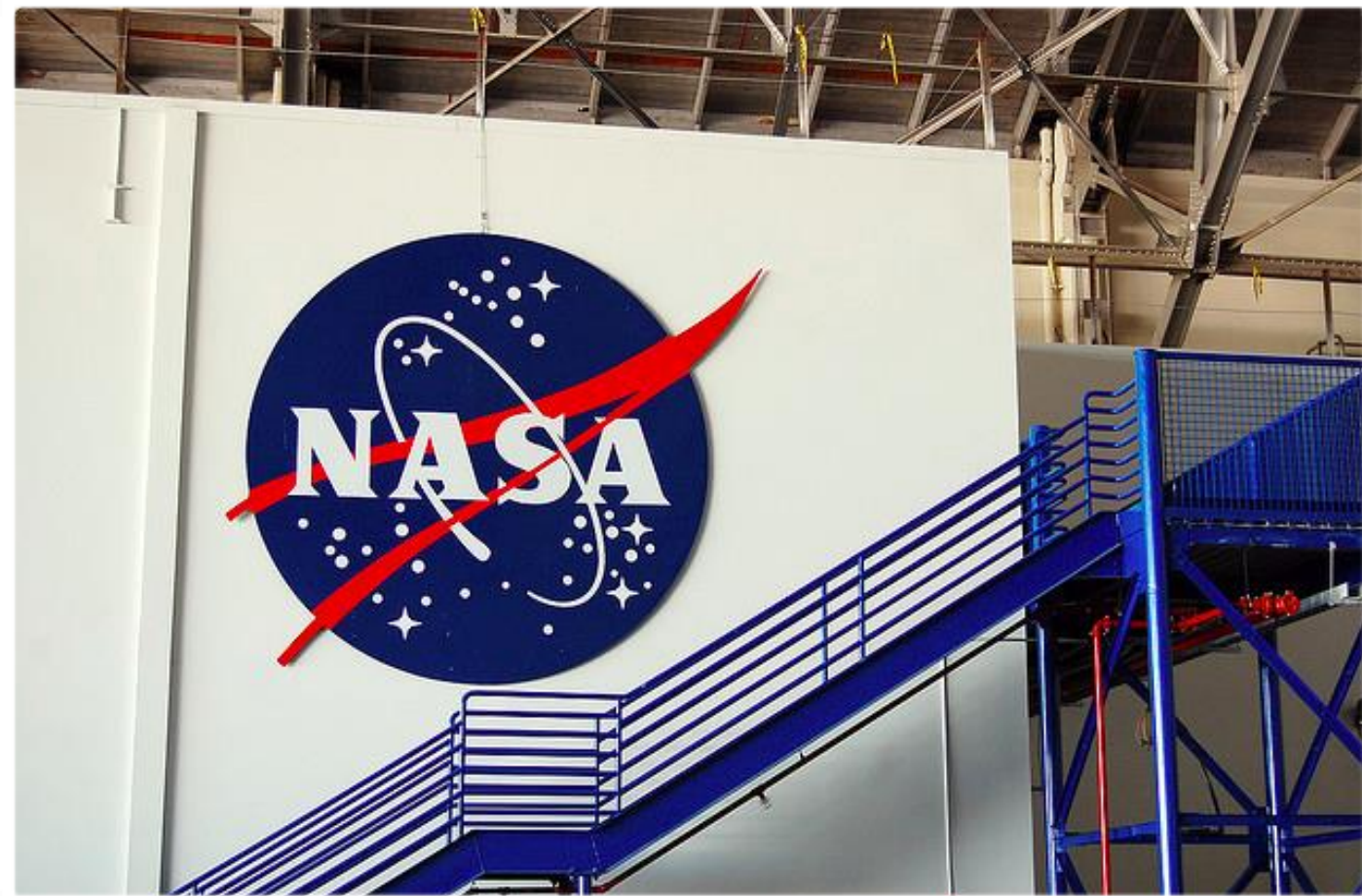
// Real vs Virtual?

// Products vs Experiences?

// Creation of Community?

// How to organize for the future?





Genentech



Autodesk

NOKIA

Google™

Ewing Marion
KAUFFMAN
Foundation

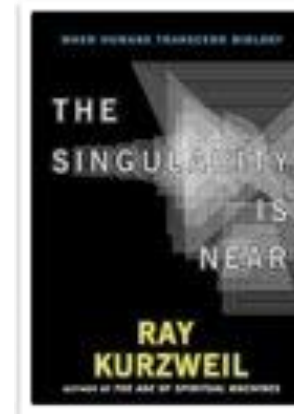
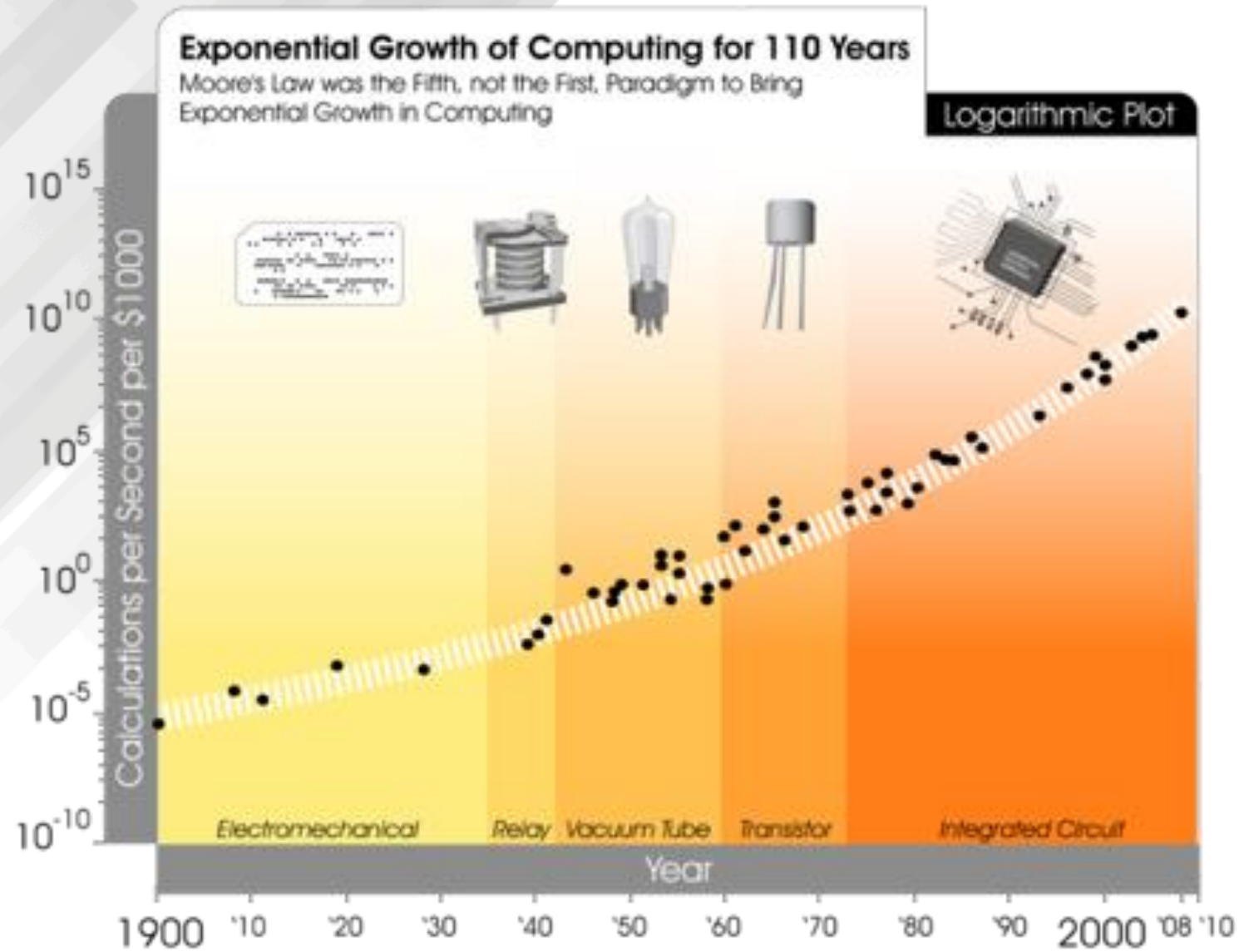


ePlanet Ventures

CISCO™



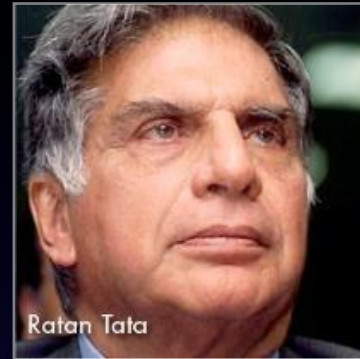
Singularity University was founded in Sept 2008 by Drs. Ray Kurzweil & Peter Diamandis



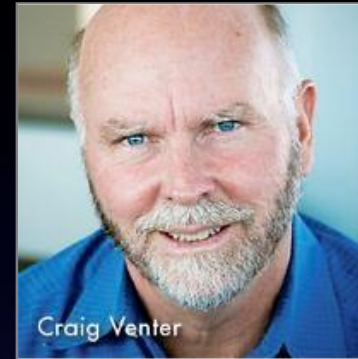
Board of Trustees & Benefactors



LARRY PAGE,
CEO, Google



RATAN TATA
Chairman of
Tata Group



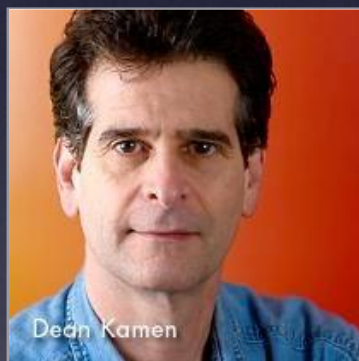
**DR. CRAIG
VENTER,**
Genetic
Pioneer



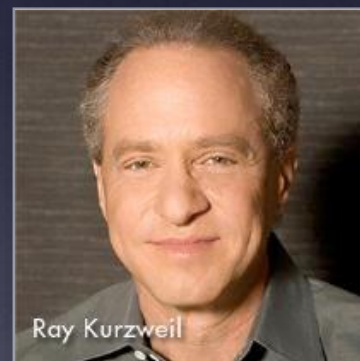
**Dr.
ANOUSHEH
ANSARI**
Astronaut &
CEO



**JAMES
CAMERON**
Filmmaker and
explorer



DEAN KAMEN,
CEO, DEKA
Research



**RAY
KURZWEIL**
Inventor &
Futurist



ELON MUSK
CEO, Tesla &
SpaceX



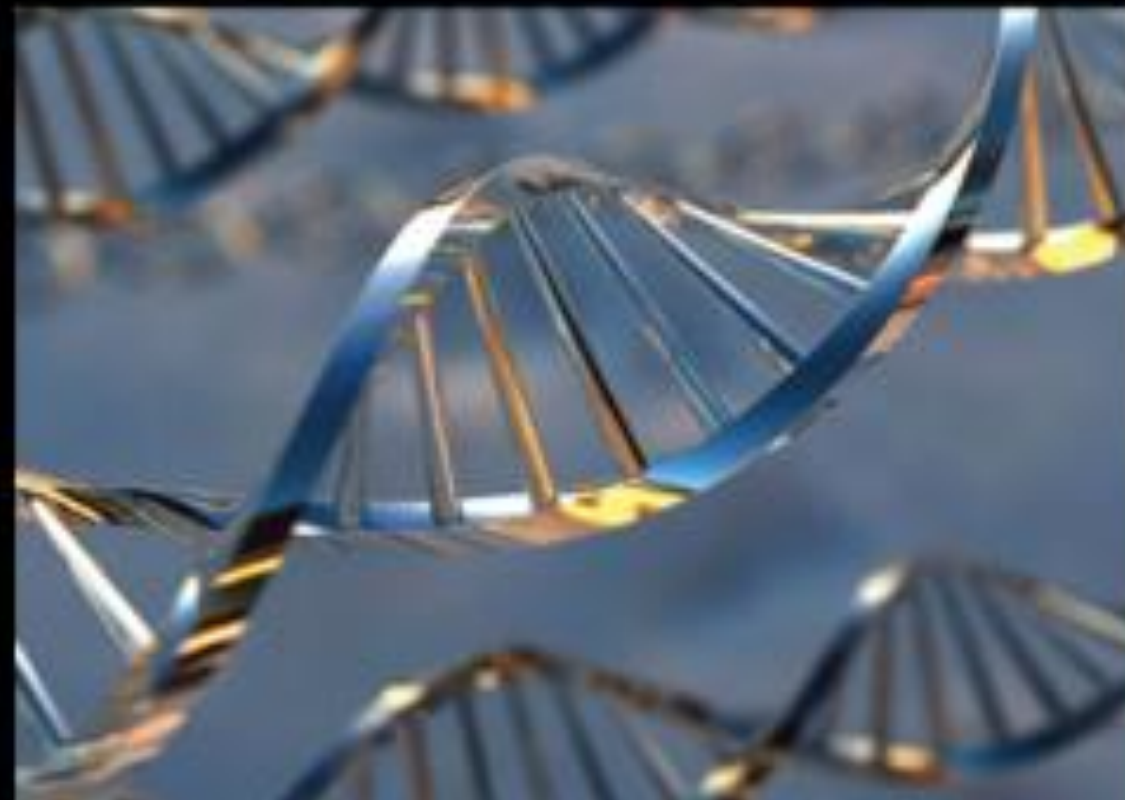
**JIM
GIANOPULOS**
Chairman/CEO
, FOX



**WENDY
SCHMIDT**
Schmidt
Family Fndtn

Accelerating Technologies

- AI
- Robotics
- Biotech
- Nanotech
- Medicine
- Neuroscience
- Energy
- Computing



Singularity
University



Before: 75% had little or zero awareness of breakthroughs



IPP | INNOVATION PARTNERSHIP PROGRAM

Current IPP Partners





After: Game-changing impact

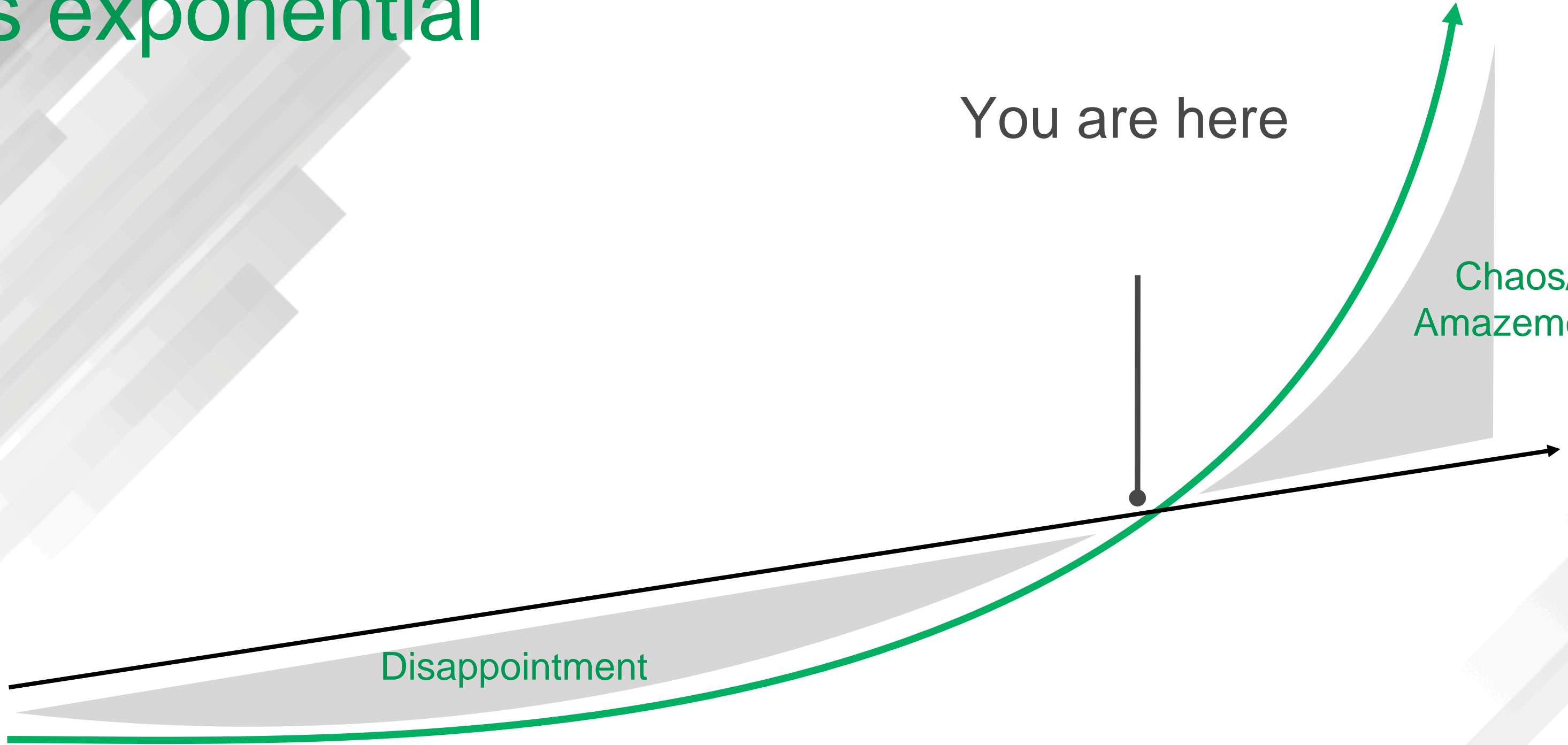
- 80% in 2 yrs
- 100% in 5 yrs
- 100% had immediate action items

Deception of linear vs exponential

You are here

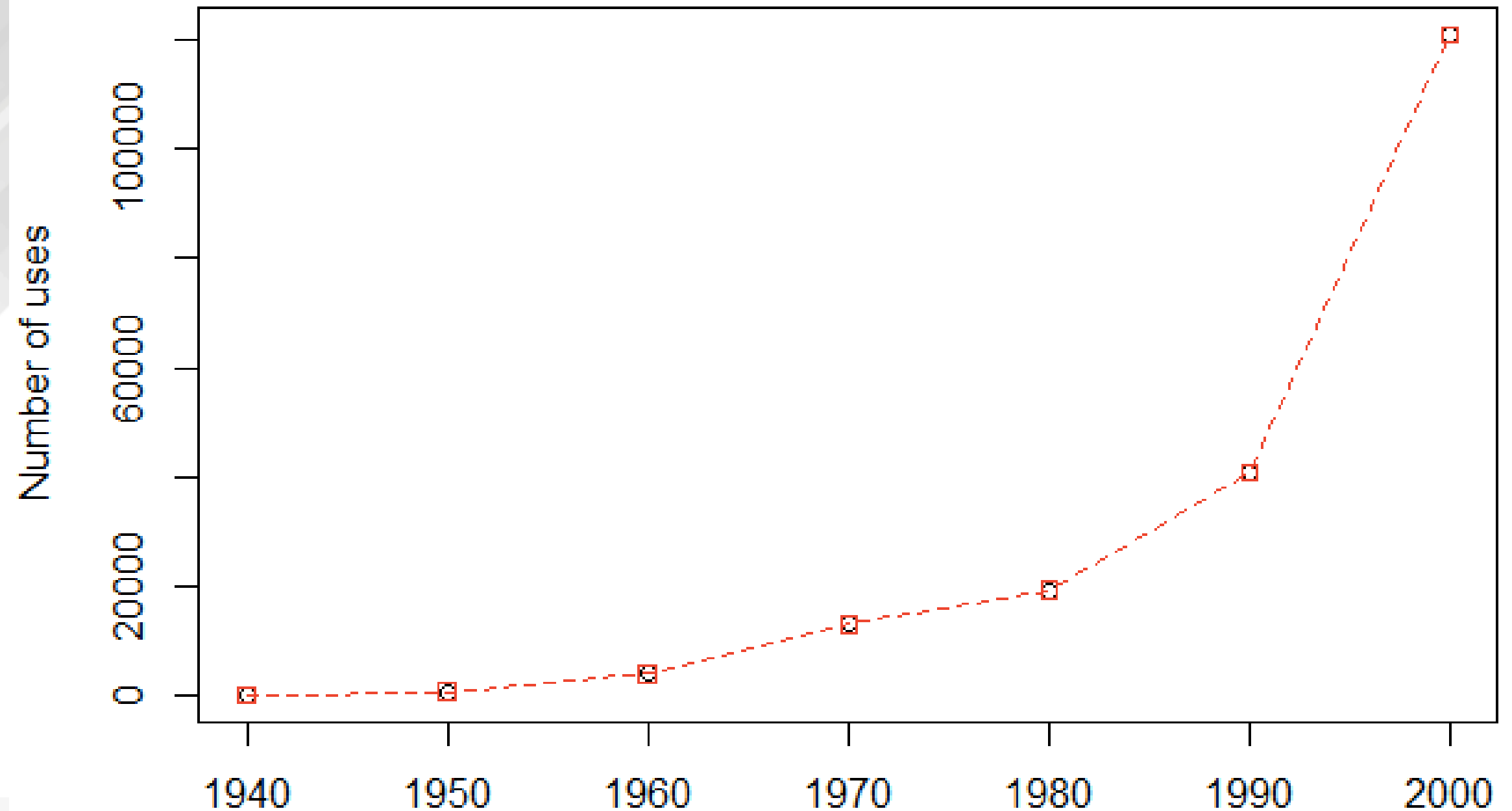
Chaos/
Amazement

Disappointment



“Exponential Growth”

Use of the phrase 'Exponential growth' by decade



Industries by Information Enablement

DISRUPTION



Information-Only Products

**Physical Products with
Information-based Revenue Streams**

**Physical Products That
Are Information-Enabled**

Information Layers



Digitize
Disrupt
Demonetize
Democratize

New
Breakthroughs



Decoding human intonation *

18 years of research

Over 60,000 subjects world-wide

4 active researches

4 approved US patents

(and two more on the way...)

Major awards



Dr. Yoram Levanon
Decision Making, Physics



Dr. Lan Lossos
Neuropsychology

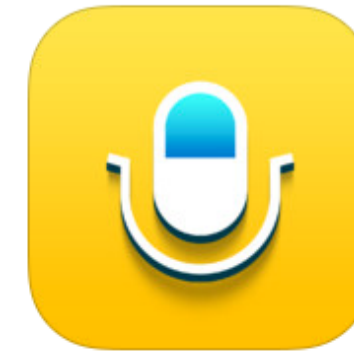


iTunes Preview

Moodies Emotions Analytics

By Beyond Verbal

Open iTunes to buy and download apps.



[View in iTunes](#)

Free

Description

Your mood in 20 seconds. Just press a button and talk.

Intrigued by emotions?

[Moodies Emotions Analytics Support](#)

What's New in Version 1.4

Improved user experience

Bug fixes



My mood/attitude ExpFin 2015



Duration
00 : 13



belief

Missionary leadership. Stubbornness.
Restrained enthusiasm. Self-control. Conflict
between enthusiasm and pragmatism.





Stress. Resentment. Possibly vengeance.
Outburst of anger, possibly from rejection.



Conservatism and restraint born out of feelings of superiority.
Vain talkativeness. Arrogance.

Information Layers

Accelerating Technologies

AI
Robotics
Biotech
Nanotech
Medicine
Neuroscience
Energy
Computing

Singularity University

Digitize
Disrupt
Demonetize
Democratize

New
Breakthroughs



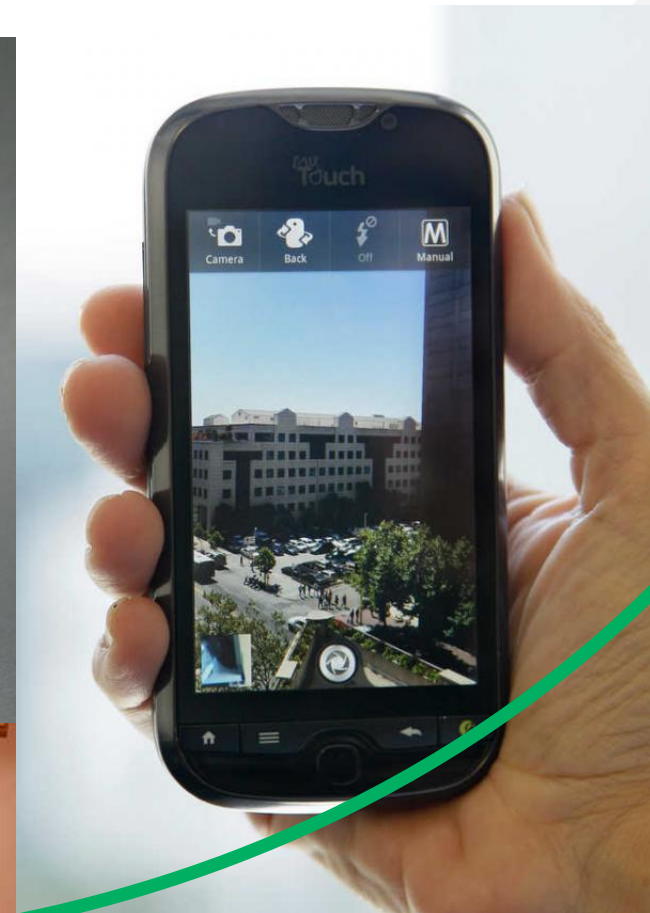
Why information » exponential

// marginal cost >> zero

// domain explodes

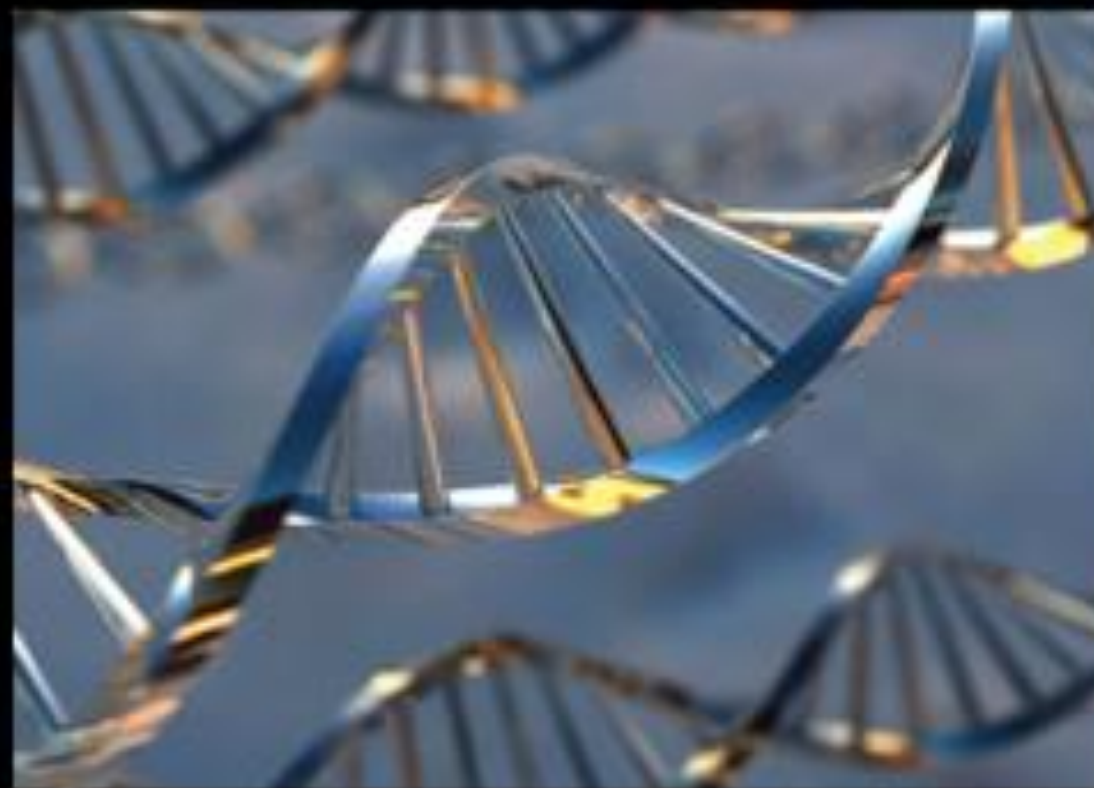
// problem space shifts

>scarcity to abundance



Accelerating Technologies

AI
Robotics
Biotech
Nanotech
Medicine
Neuroscience
Energy
Computing



Singularity
University



Cost of Light

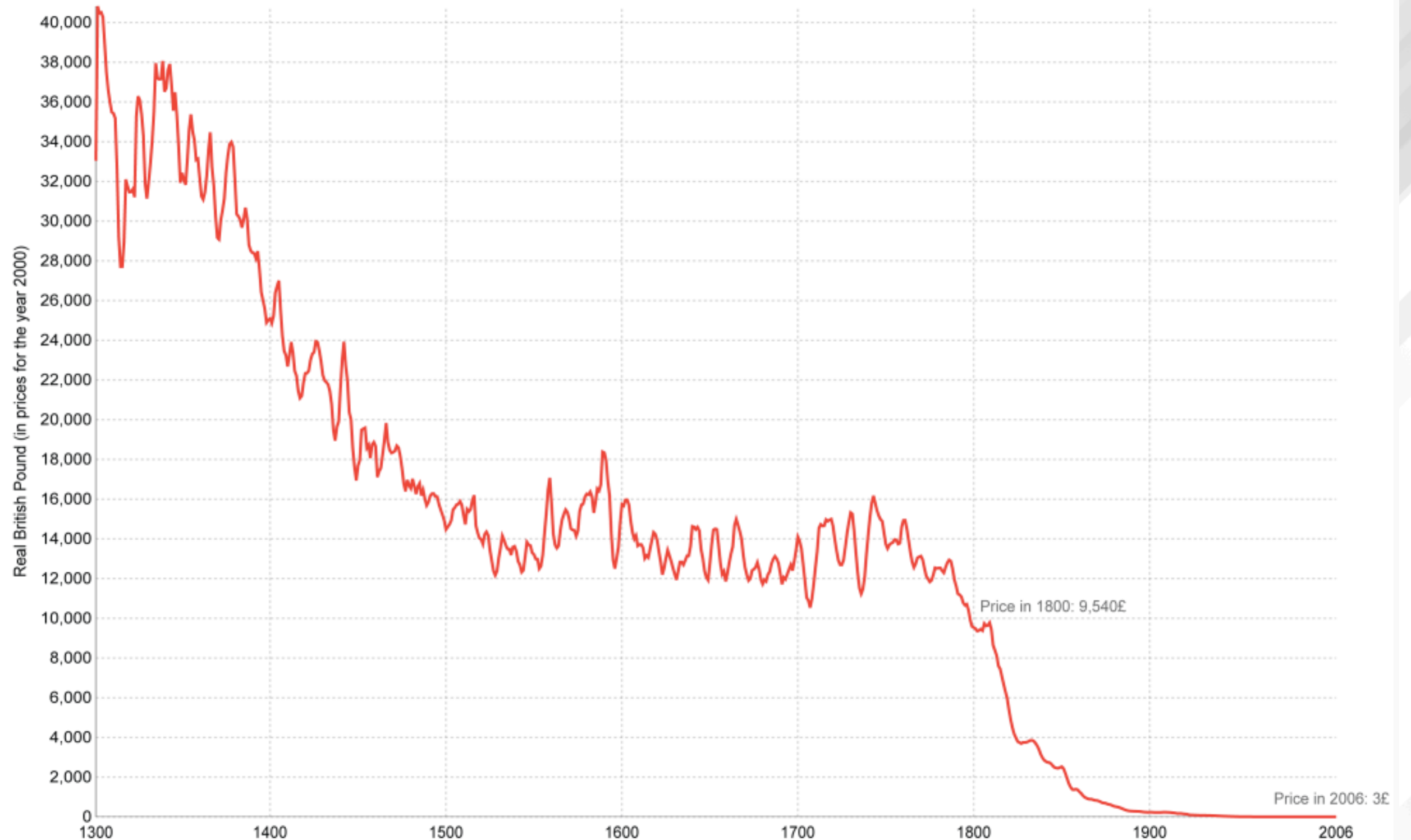
OurWorld
in Data

The Price for Lighting (per million lumen-hours) in the UK in British Pound, 1300-2006 – by Max Roser

The price is adjusted for inflation and expressed in prices for the year 2000. Shown is a 5-year moving average.

1 lumen hour is equal to the luminous energy emitted in 1 hour by a light source emitting a luminous flux of 1 lumen.

For comparison: a standard 100W incandescent light bulb emits ± 1700 lumen.

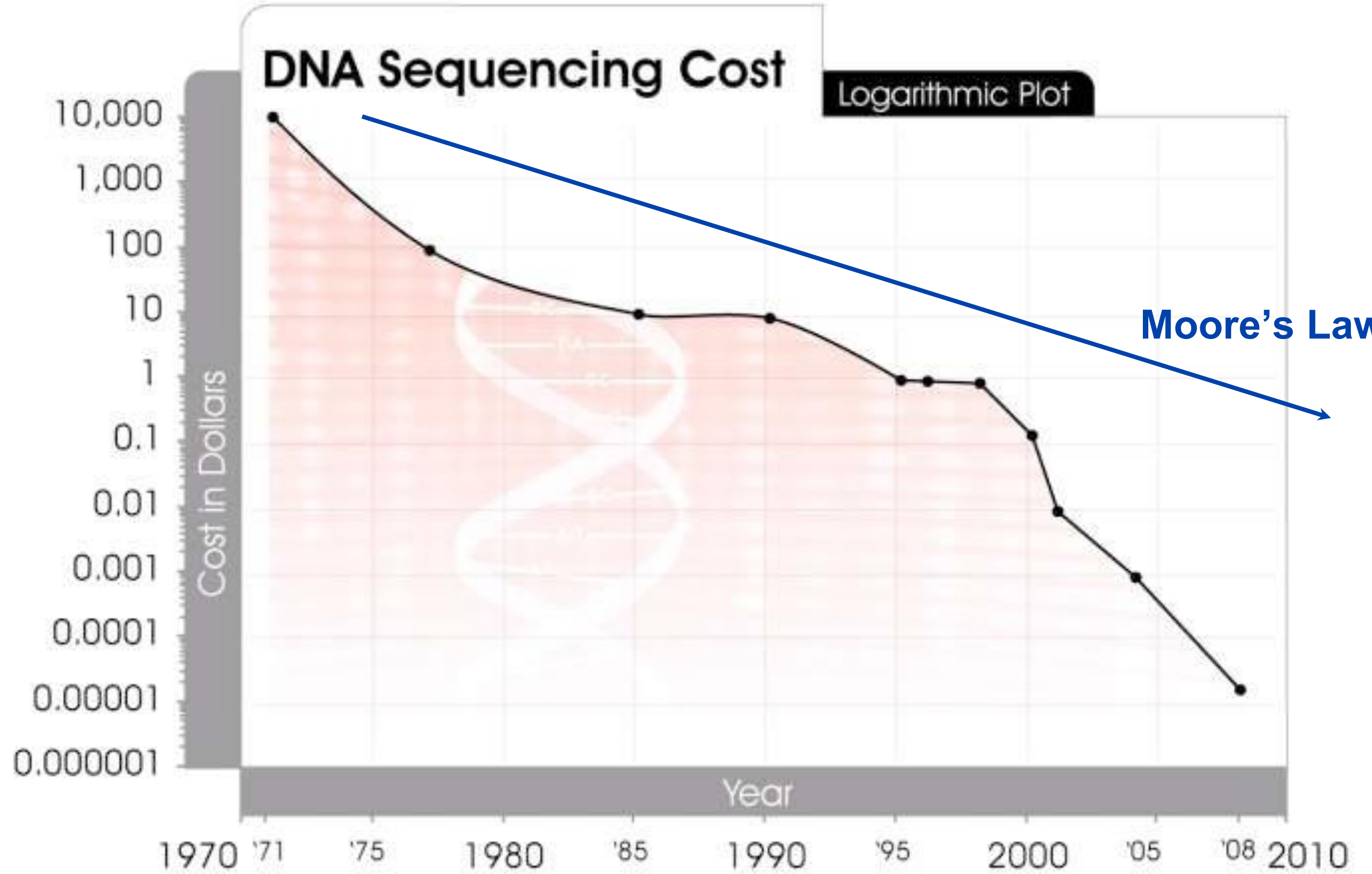


Data source: Fouquet and Pearson (2012) – The long run demand for lighting: elasticities and rebound effects in different phases of economic development. *Economics of Energy and Environmental Policy*, v.1, pp.83-100.

The interactive data visualisation is available at [OurWorldinData.org](https://ourworldindata.org). There you find the raw data and more visualisations on this topic.

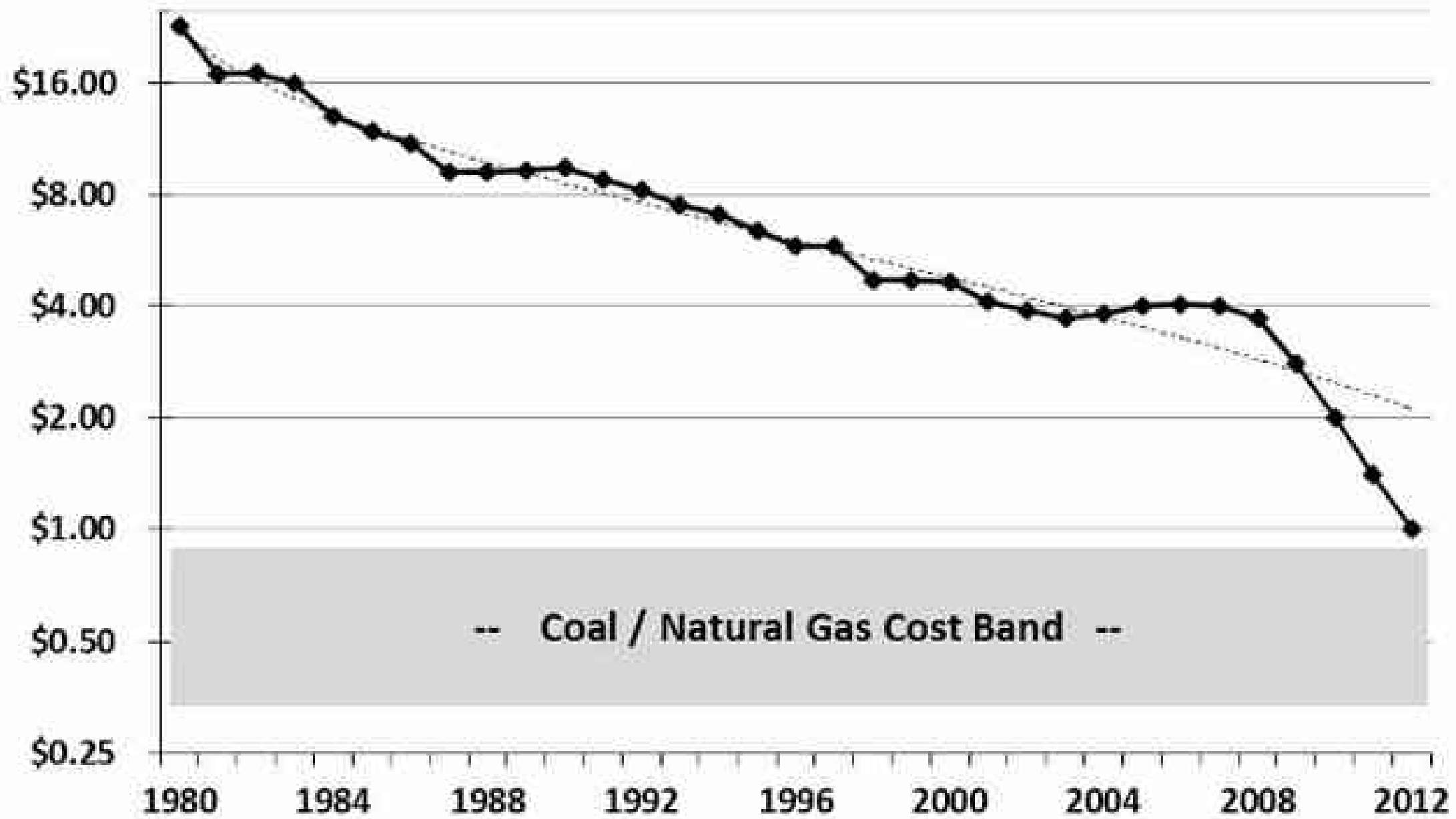
Licensed under [CC-BY-SA](https://creativecommons.org/licenses/by-sa/4.0/) by the author Max Roser.

Reading / Sequencing DNA



Plummeting Cost of Solar Modules

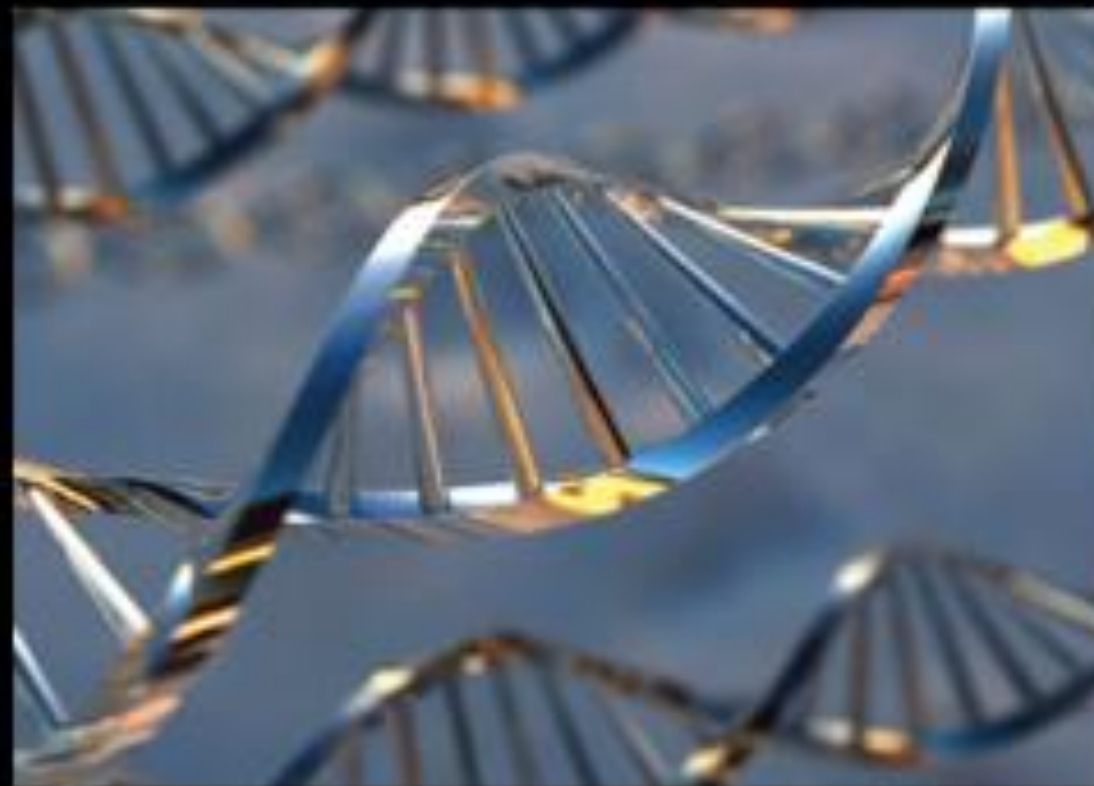
(Cost Per Watt in 2012 Dollars)



Sources: DOE NREL Solar Market Report, SolarBuzz Retail Price Environment

Accelerating Technologies

AI
Robotics
Biotech
Nanotech
Medicine
Neuroscience
Energy
Computing



Singularity
University

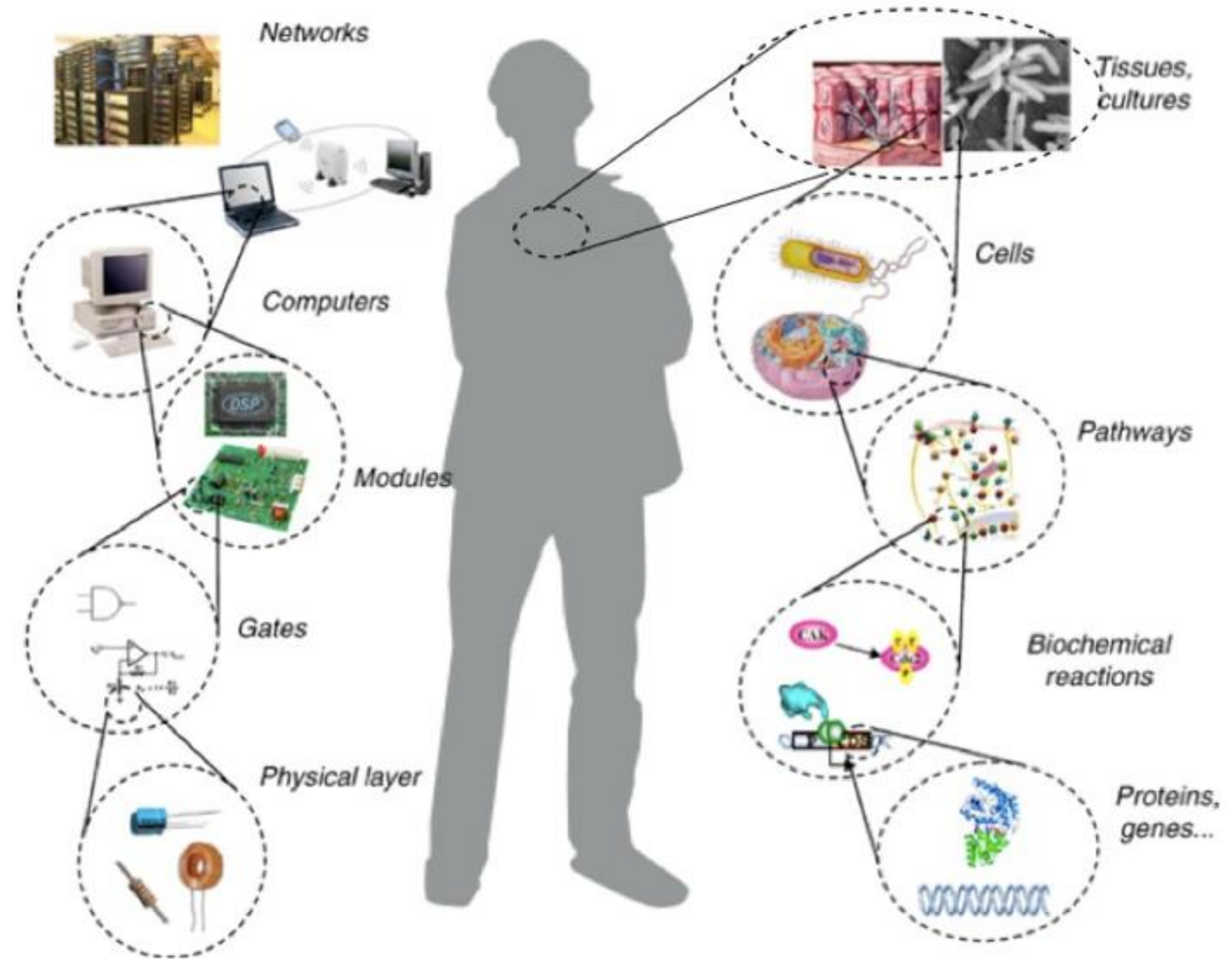


Biotech & Bioinformatics

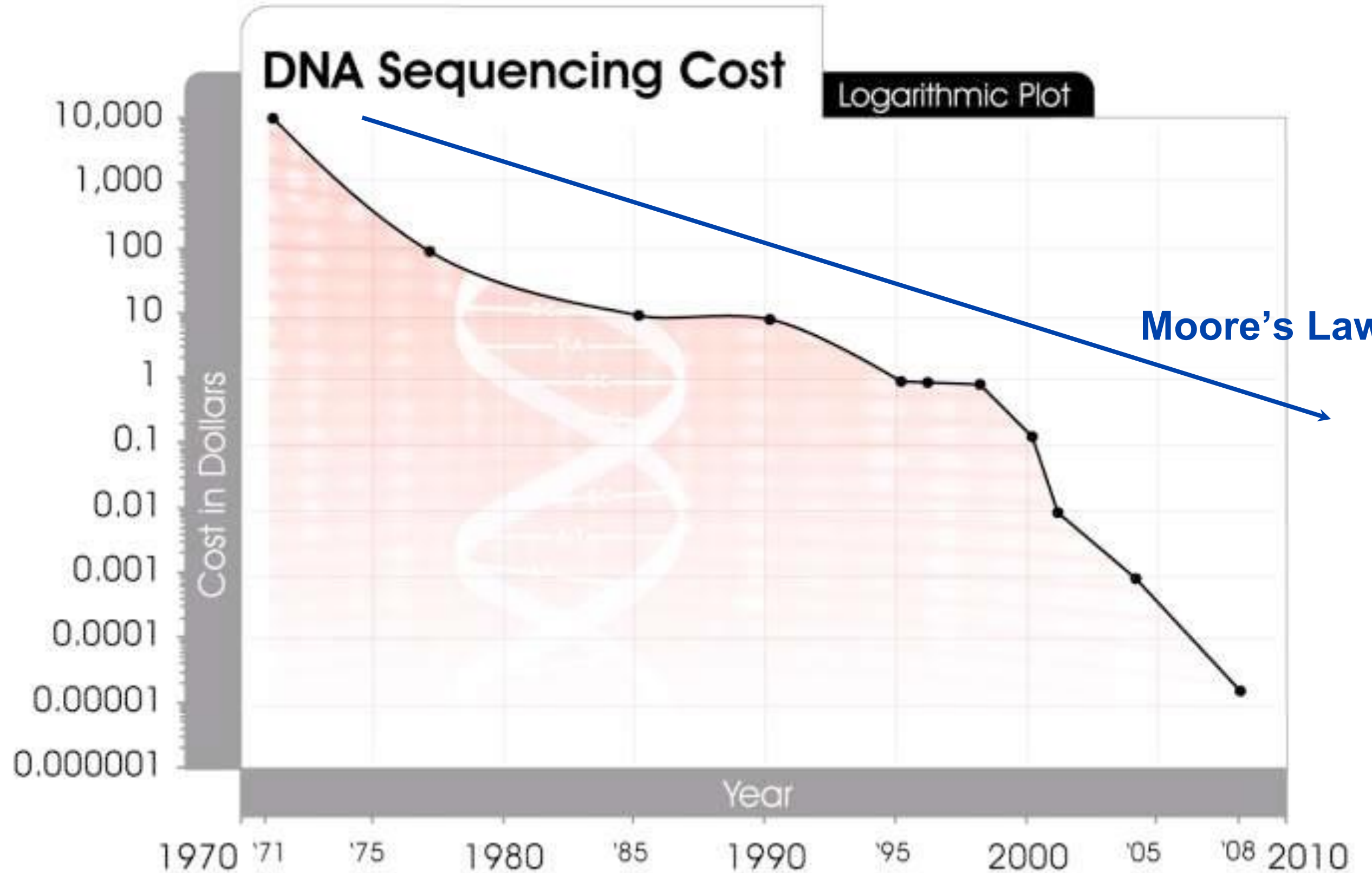


Raymond McCauley

(Biotechnology)
CSO-Genomera;
Founder - BioCurious



Reading / Sequencing DNA

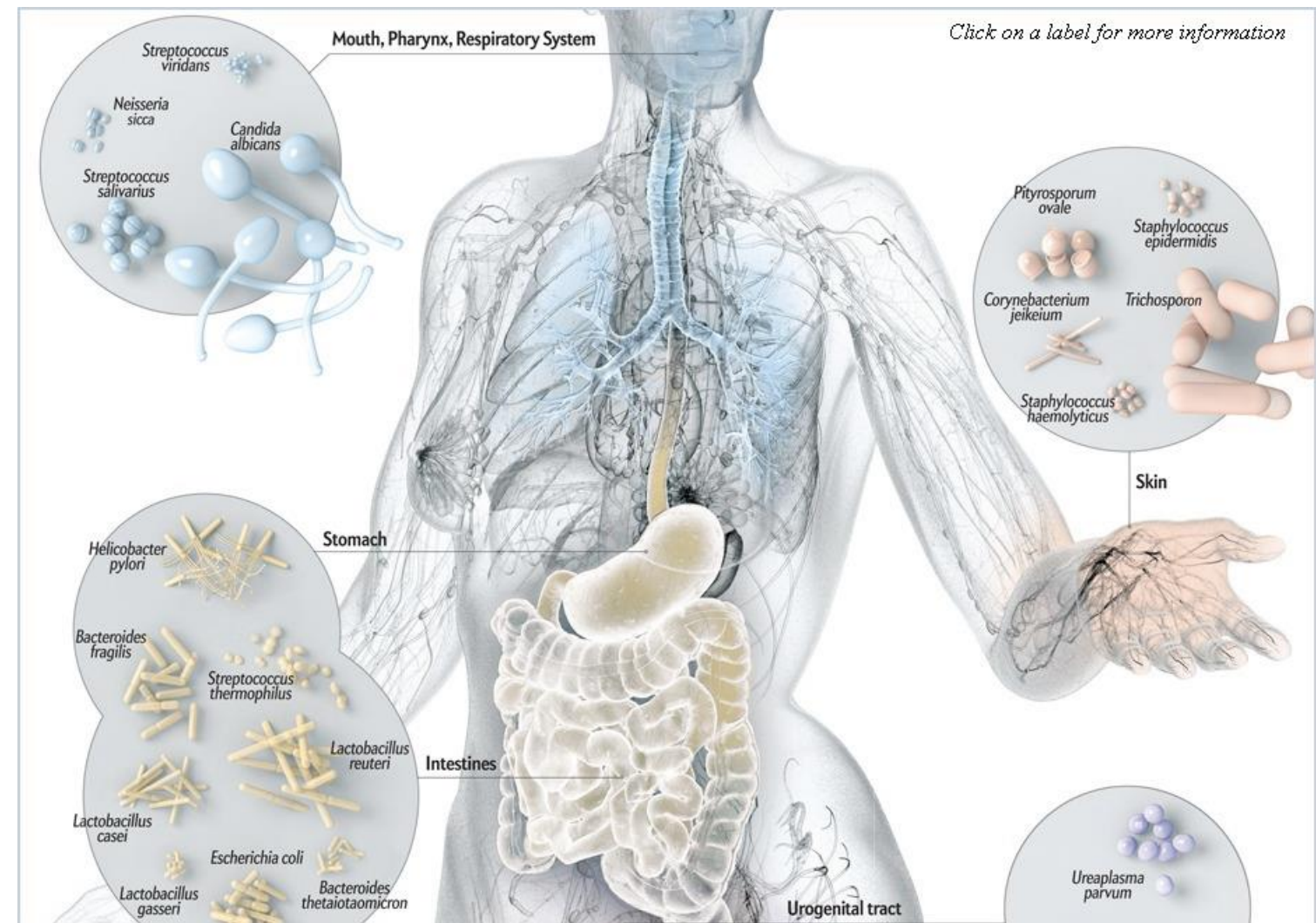
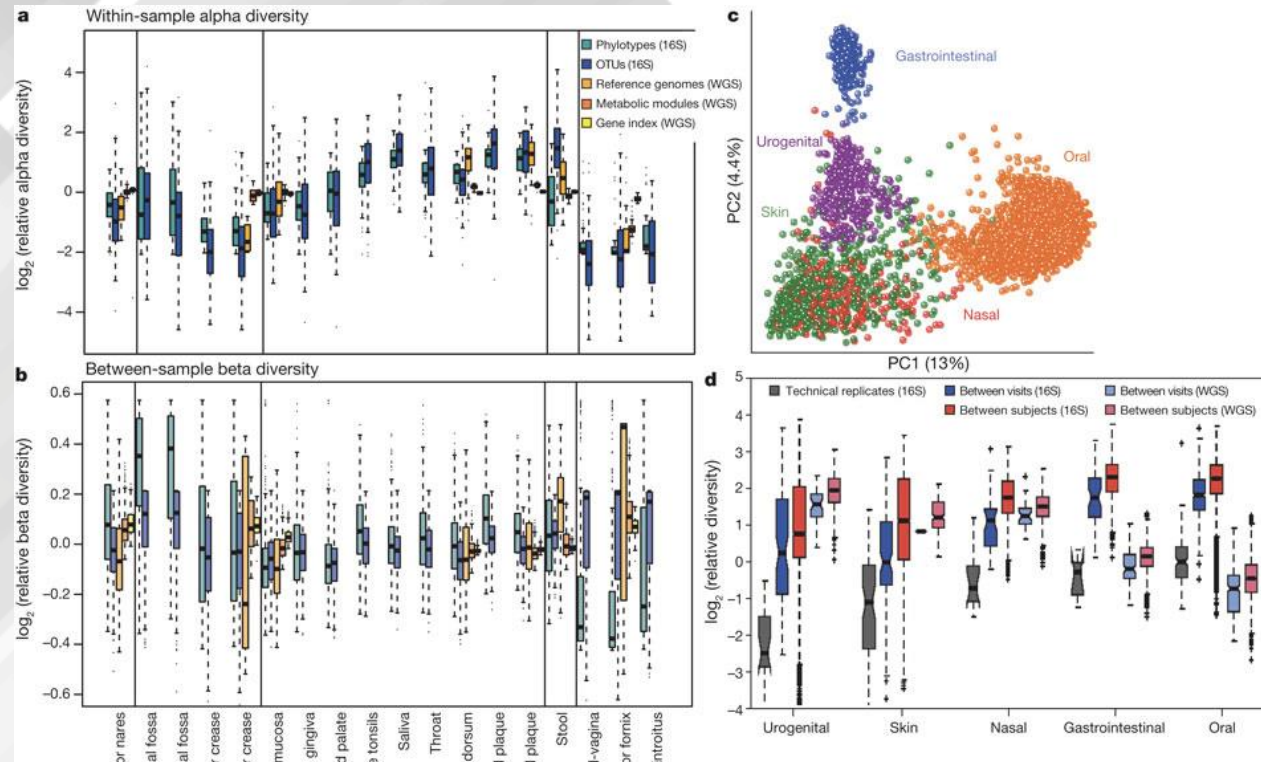


iGEM





Micro Biome



TIME See the 100 Most Influential Photos of All Time **100 PHOTOGRAPHS** [SIGN IN](#) | [SUBSCRIBE](#)

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Parkinson's Disease May Be Traced to Gut Bacteria

HEALTH BRAIN

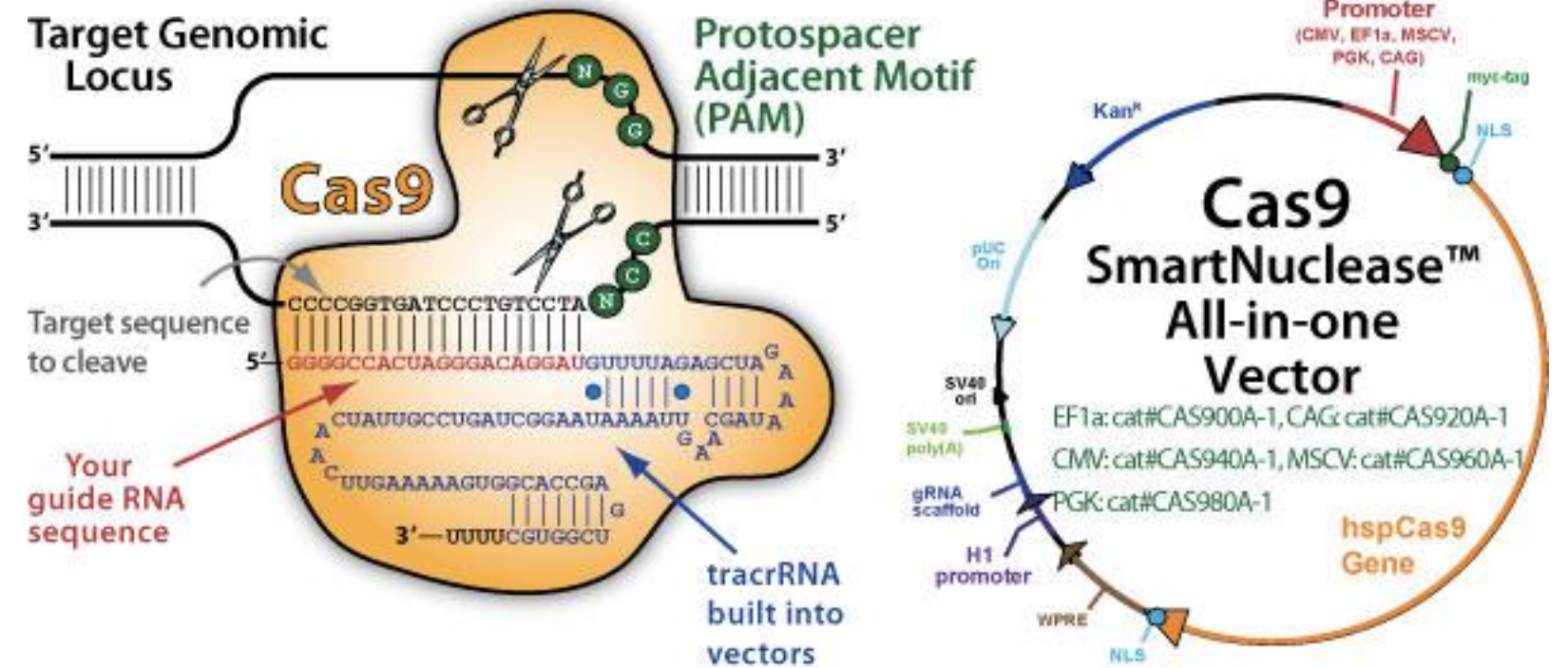
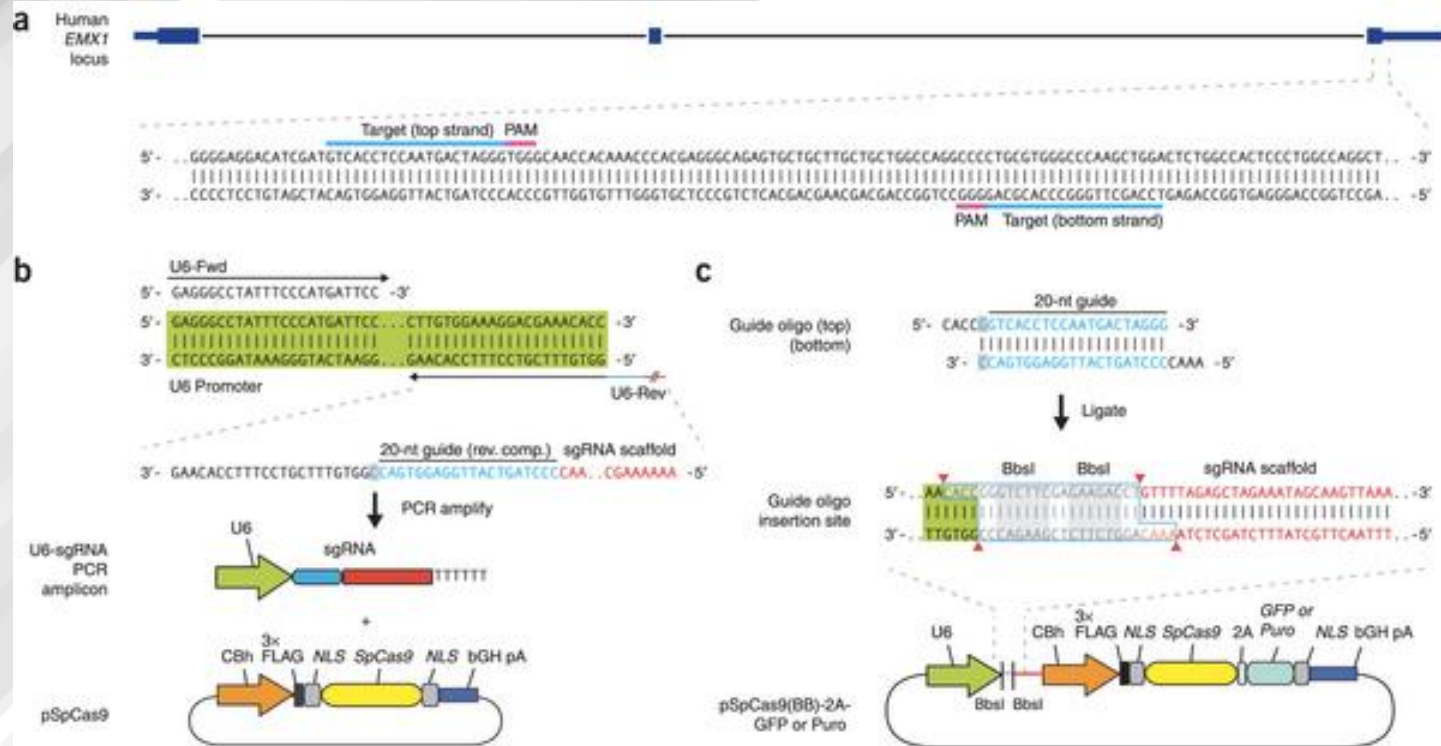
Parkinson's Disease May Be Traced to Gut Bacteria

Alice Park @aliceparkny | Dec. 1, 2016

[✉](#) [f](#) [🐦](#) [p](#) [in](#)



CRISPR / CAS9



Futurism News Infographics Videos

Hard Science

Scientists Just Removed HIV from Human Immune Cells Using CRISPR Gene-Editing

National Ins



Breeding



Accelerating Technologies

AI
Robotics
Biotech
Nanotech
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Neuroscience
Energy
Computing



Singularity
University



Google Car - www.robotcars.com



Brad Templeton
(Computer & Networks)
Chairman EFF

Proximity Shift

10-15x increase in capacity
of roads

real estate values

Uber or drones =
delivery vehicles

proximity less relevant



photo: Paul Saffo

This is the first licensed self-driving truck. There will be many more.

Updated by Joseph Stromberg on May 6, 2015, 11:23 a.m. ET @josephstromberg joseph@vox.com

TWEET (257) SHARE



The Freightliner Inspiration Truck — the first semi-autonomous truck to get a license to (Freightliner)

- Home Video News World Sport Finance Comment Culture Travel Life Women Fa
- Politics Election 2015 Investigations Obits Education Science Earth Weather Health
- Science News Dinosaurs Space Night Sky Evolution Picture Galleries Science Video

Singapore tests self-driving cars you use like taxis

by Jon Fingas | @jonfingas | December 23rd 2014 At 7:57pm

How to share on social media (Twitter, Facebook, Google+, LinkedIn)



Public Access

Community story telling at its weirdest.

Apply & Sign-up

FEATURED STORIES



AUTOS AUTONOMOUS VEHICLES

Volvo CEO: We will accept all liability when our cars are in autonomous mode

by Kirsten Korosec @kirstenkorosec OCTOBER 7, 2015, 3:34 PM EDT

NEWS POPULAR VIDEOS FORTUNE 500

Volvo CEO: We will accept all liability when our cars are in autonomous mode OCTOBER 7, 2015

Amazon is sunsetting its Square competitor 9:15 PM EDT

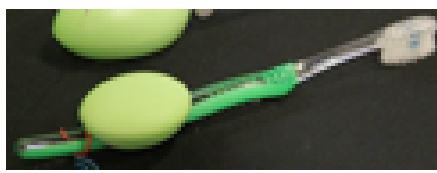
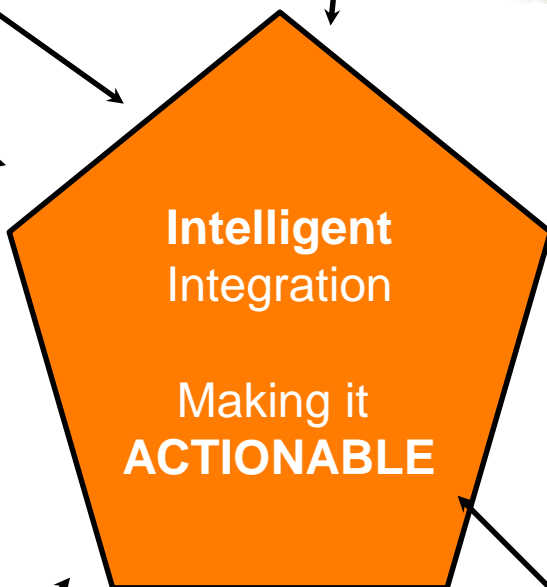
The head-scratching reason there's no mental health apps 8:10 PM EDT

Behind the scenes at Lucasfilm's





Quantified Self



\$10 million

QUALCOMM
TRICORDER X PRIZE

Artificial Intelligence Physician



X Prize - April 12, 2017



Vinod Khosla: Technology Will Replace 80 Percent of Docs

48 Responses

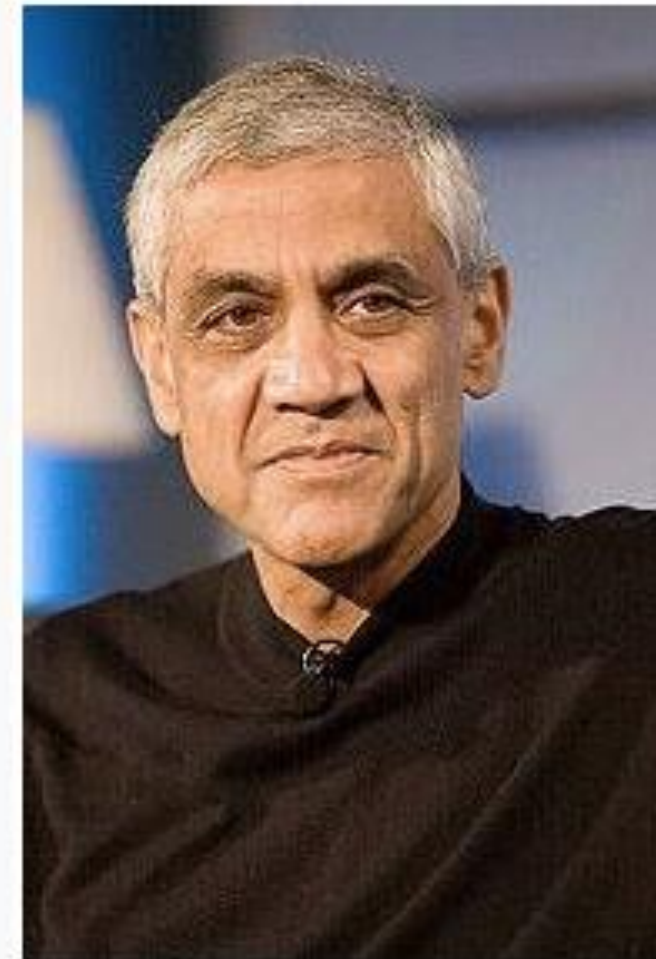
By DAVIS LIU, MD

I recently viewed health care through the lenses of a technology entrepreneur by attending the Health Innovation Summit hosted by Rock Health in San Francisco. As a practicing primary care doctor, I was inspired to hear from Andy Grove, former CEO of Intel, listen to Thomas Goetz, executive editor of Wired magazine, and Dr. Tom Lee, founder of One Medical Group as well as ePocrates.

Not surprising, the most fascinating person, was the keynote speaker, Vinod Khosla, co-founder of Sun Microsystems as well as a partner in a couple venture capital firms.

“Health care is like witchcraft and just based on tradition.”

Entrepreneurs need to develop technology that would stop doctors from practicing like “voodoo doctors” and be more like scientists.



ON THCB

What Next After Implementation Challenges For Informatics Co (Tech)

Nationwide Health Information Needs of Age (Tech)
By BRIAN AHI

Burnout
By ROB LAMB

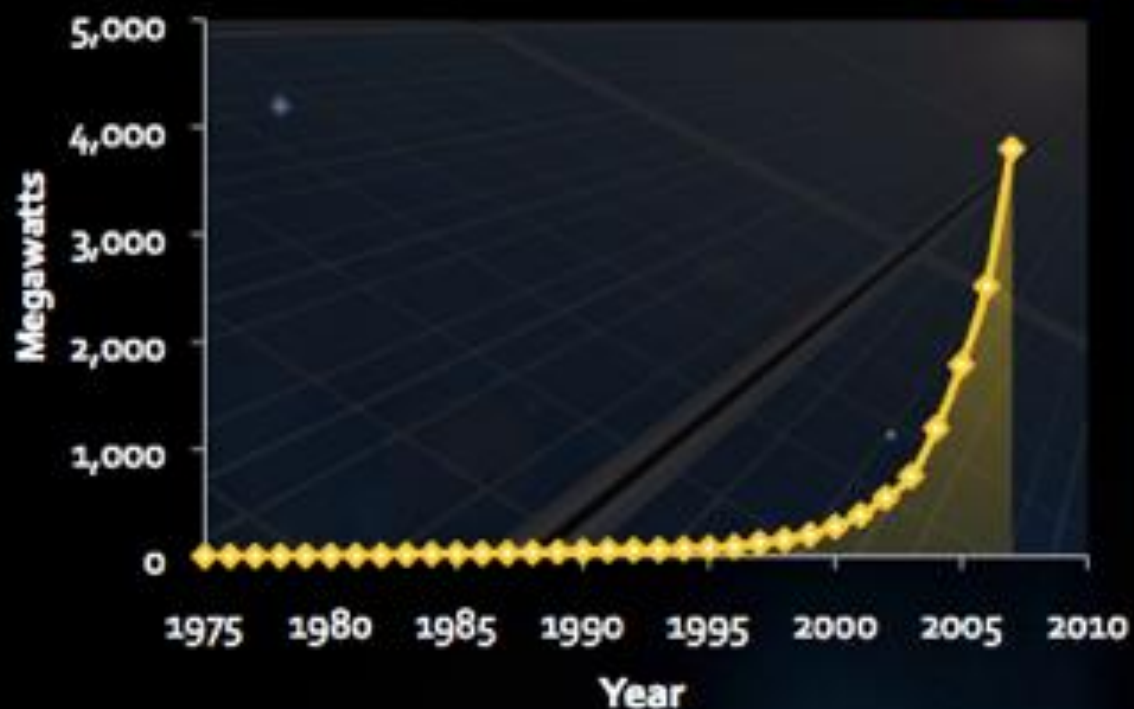
Building a Medical Home: Does Government Hinder? (Physi)
By DAVID M. M
MD

Demo: Healthline BodyMaps for (Matthew Holt)
By MATTHEW

Solar

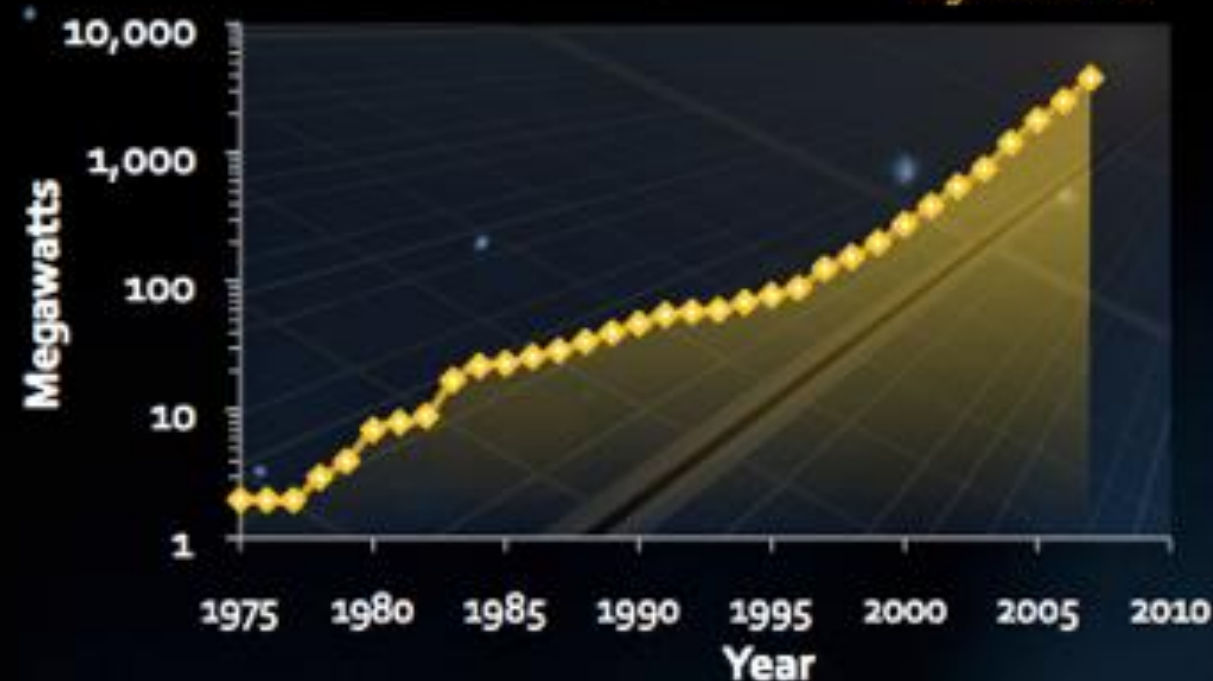
World Annual Photovoltaic Production

Linear Plot



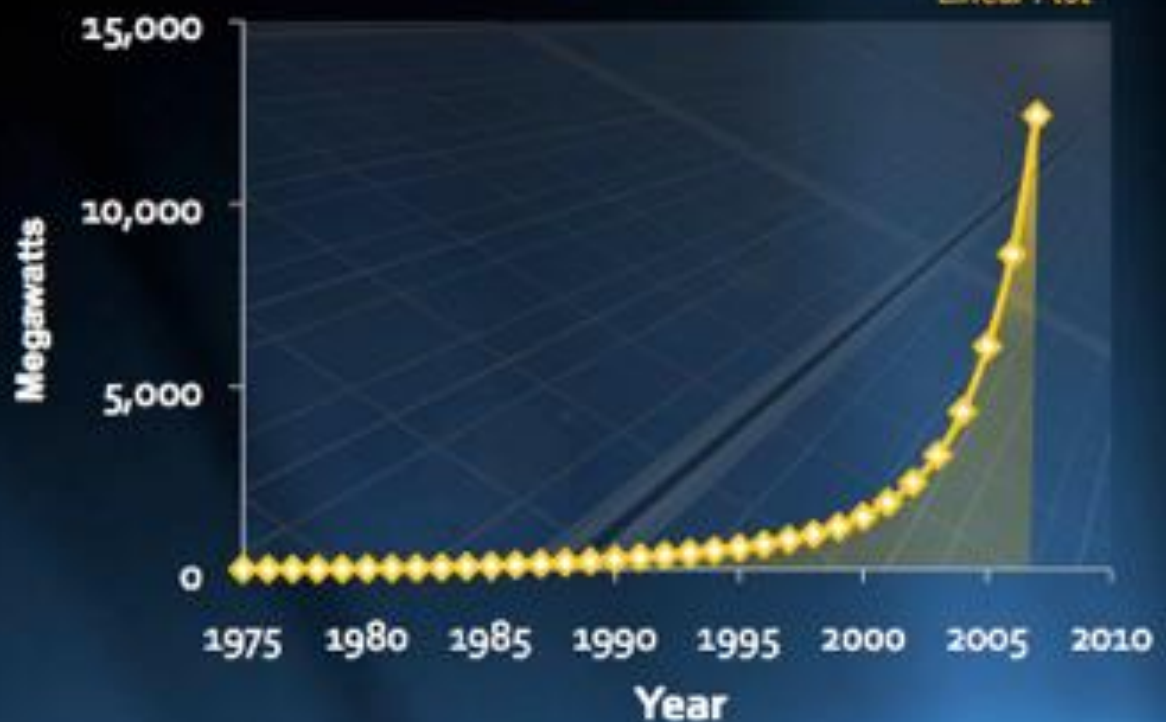
World Annual Photovoltaic Production

Logarithmic Plot



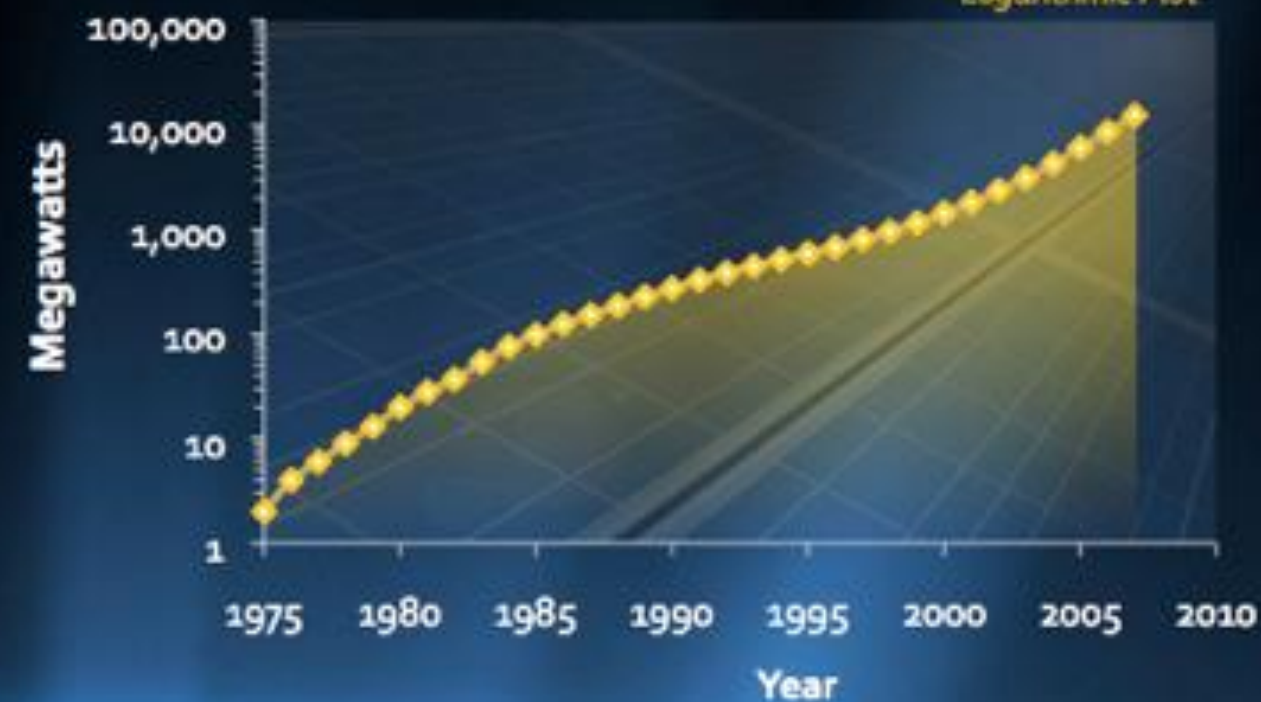
World Cumulative Photovoltaic Production

Linear Plot



World Cumulative Photovoltaic Production

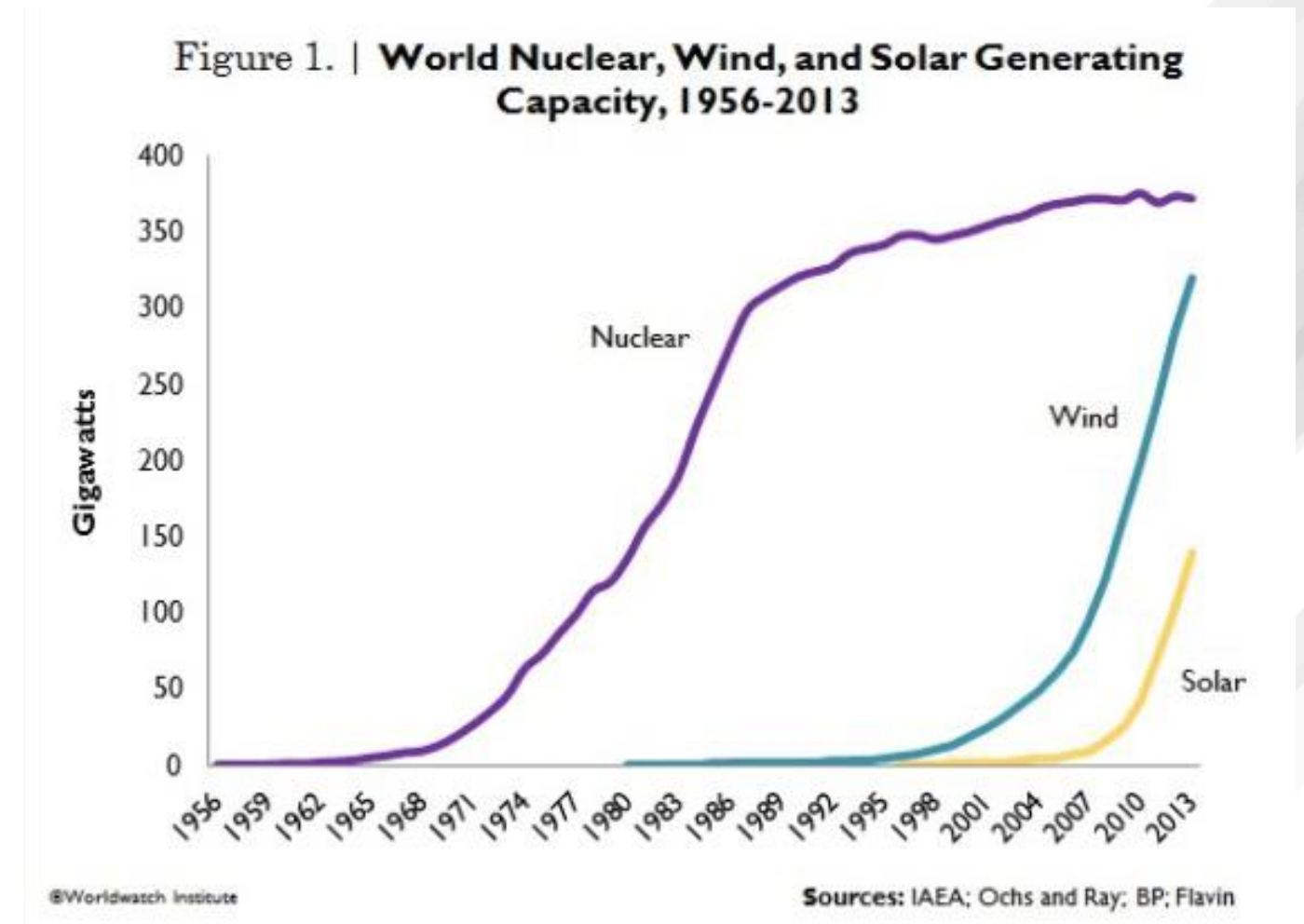
Logarithmic Plot



Relative cost of solar...

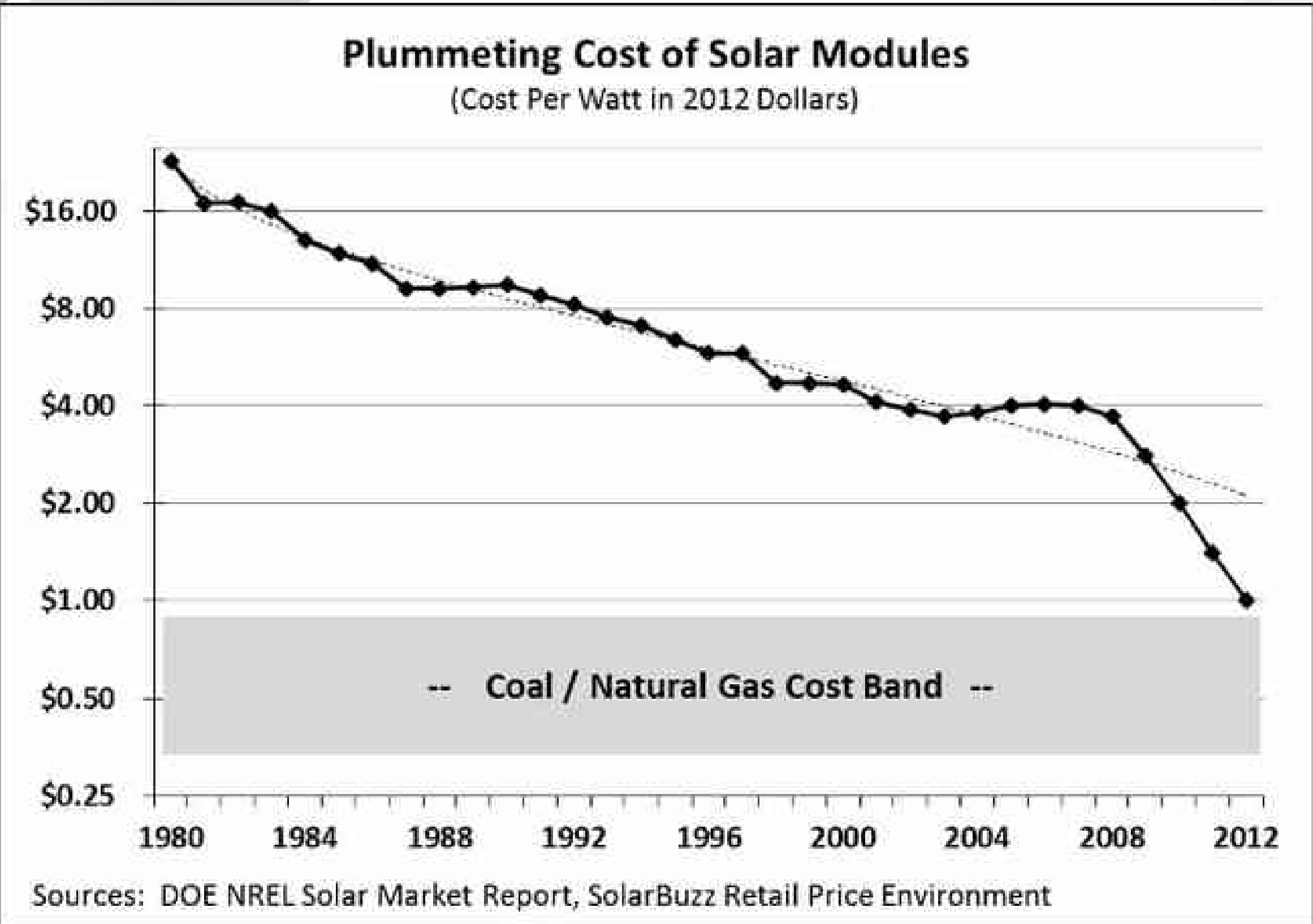
	1970-2013	1970-2020
Petroleum	5355x	16065x
Nuclear	1540x	4620x
Natural Gas	2275x	6825x
Coal	900x	2700x

Source: Tony Seba



2016 == U.S. Grid

Cost of Solar Modules



Solar Impact

100%
POSSIBLE

Mike Hudema @MikeHudema · Apr 14

POW! A Quarter of all the farms in California are now #solar powered:
buff.ly/2pevOGf #Climate #cdnpoli #abpoli #NoKXL #DumpKM



ars TECHNICA

🔍 BIZ & IT TECH SCIENCE POLICY CARS GAMING & CULTURE FORUMS ☰

MINISTRY OF INNOVATION —

To save money, Kentucky Coal Museum turns to solar panels

Museum's 80 solar panels on the roof are expected to save approximately \$8,000 per year.

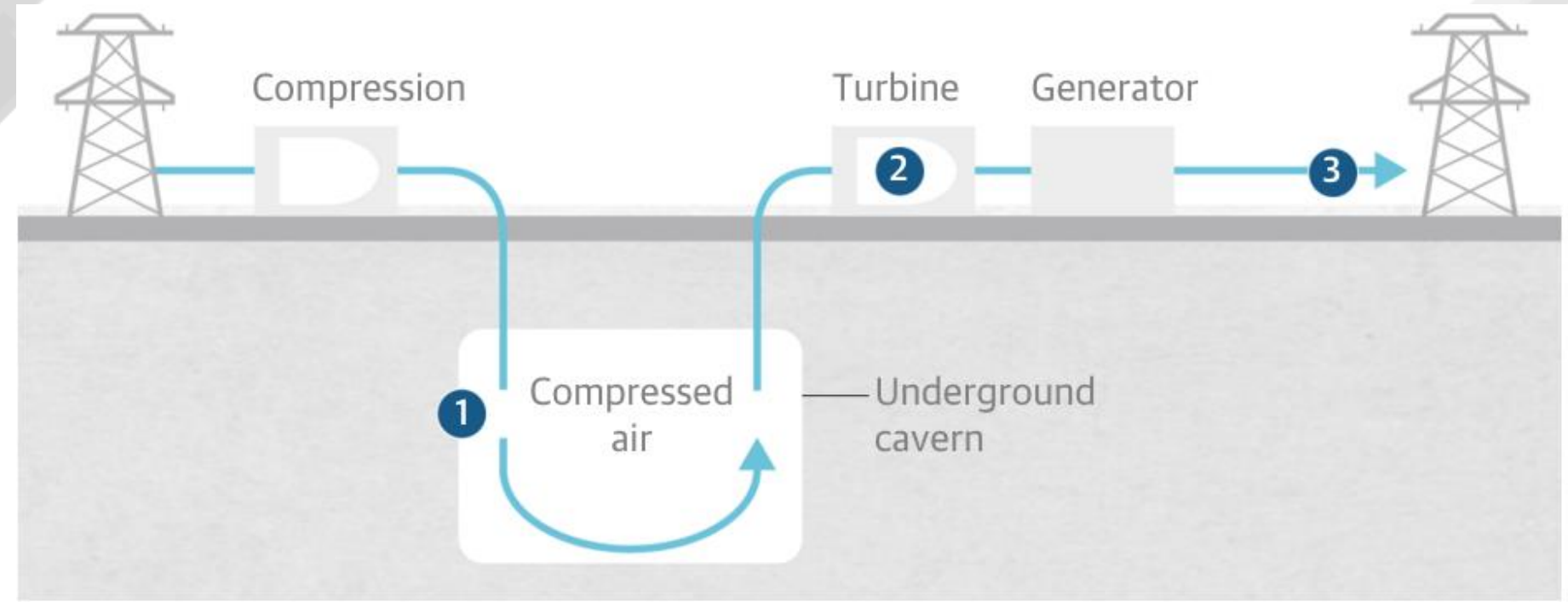
MEGAN GEUSS - 4/10/2017, 9:35 PM

↩ 2

↻ 102

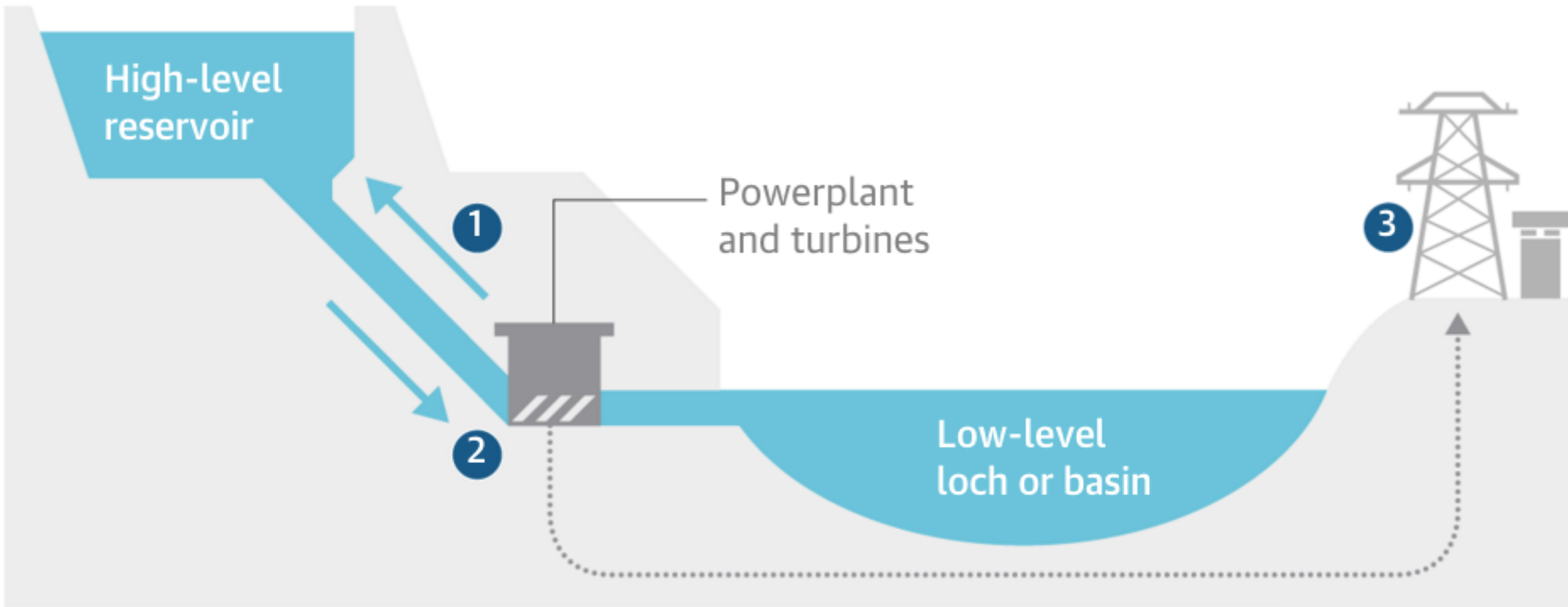
♥ 126

Breakthroughs in Storage



Guardian graphic

Source: Renewable Energy Association

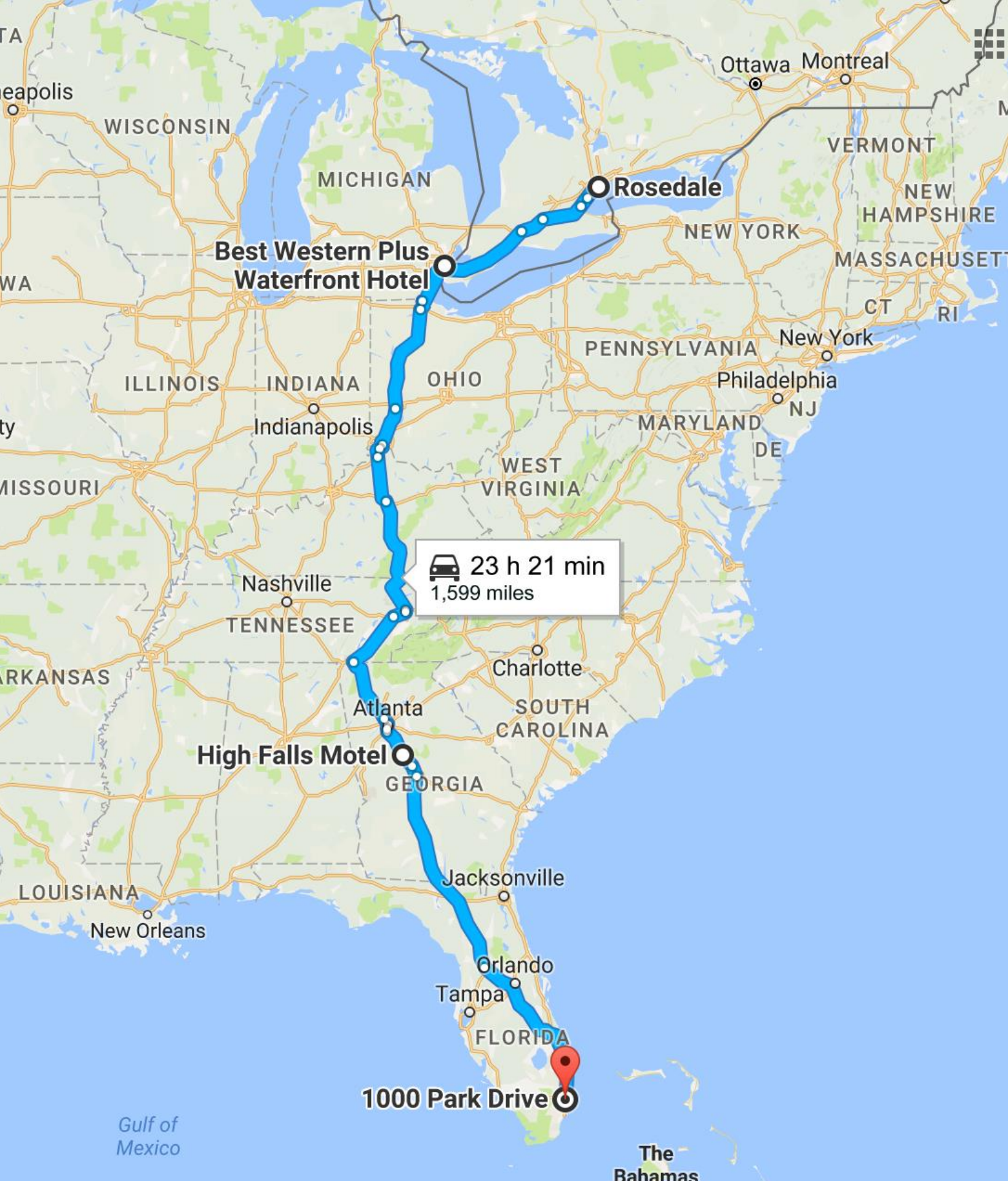


Guardian graphic

Source: Renewable Energy Association

Home or Utility





Road Trip

Solar + sensors + robotics + mobile + batteries

34 hrs, 11 stops, ~35% self driving



Information Layers

Accelerating Technologies

**AI
Robotics
Biotech
Nanotech
Medicine
Neuroscience
Energy
Computing**

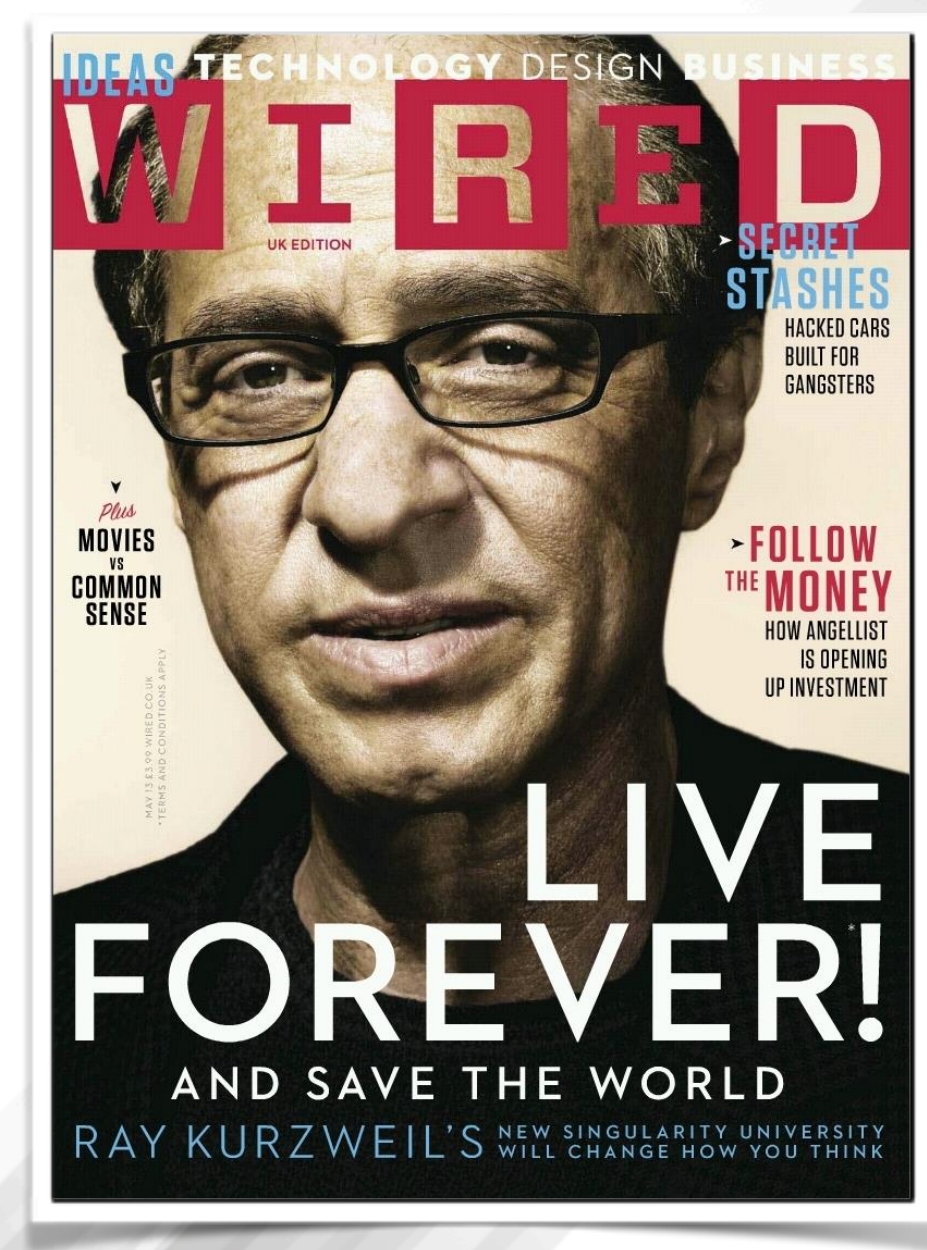
Singularity University

Digitize
Disrupt
Demonetize
Democratize

New
Breakthroughs



Recent News



Society is not ready..



LIFE

Local & linear



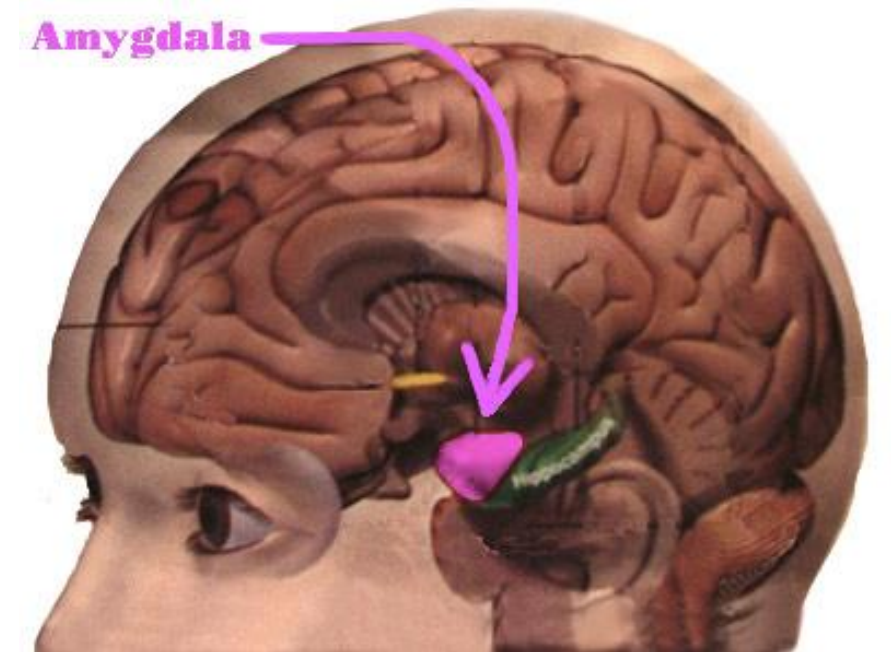
LIFE

Exponential & global

Amygdala & Technology

1. Anything that is in the world when you're born is normal and ordinary and is just a natural part of the way the world works.
2. Anything that's invented between when you're fifteen and thirty-five is new and exciting and revolutionary and you can probably get a career in it.
3. Anything invented after you're thirty-five is against the natural order of things.

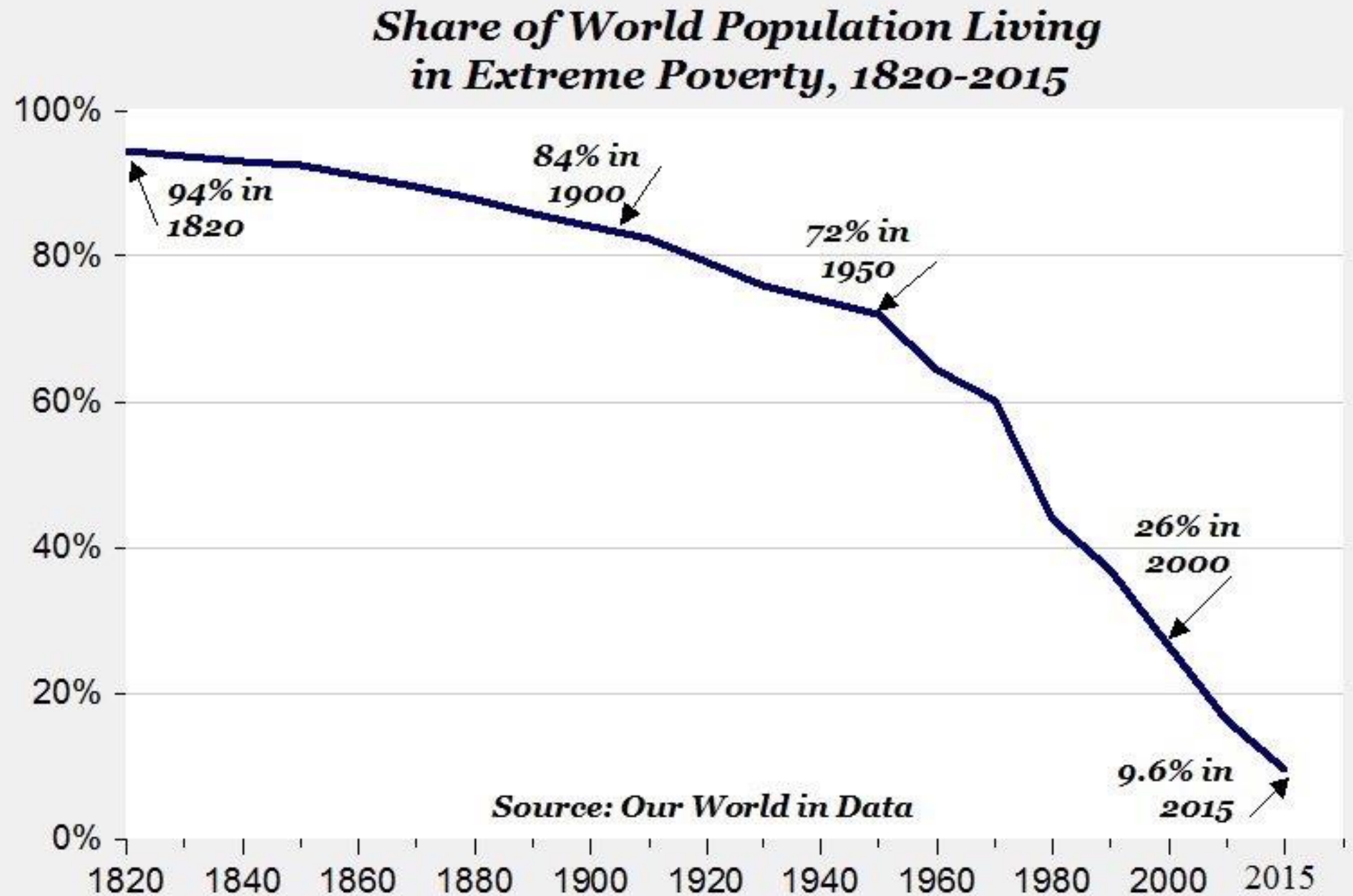
Douglas Adams



Population Living in Extreme Poverty

1820: 94%
2017: 9.4%

\$1.90/day
in 2011 ppp



Abundance through Technology

Extraordinary Century of Progress

Human life-expectancy more than doubled

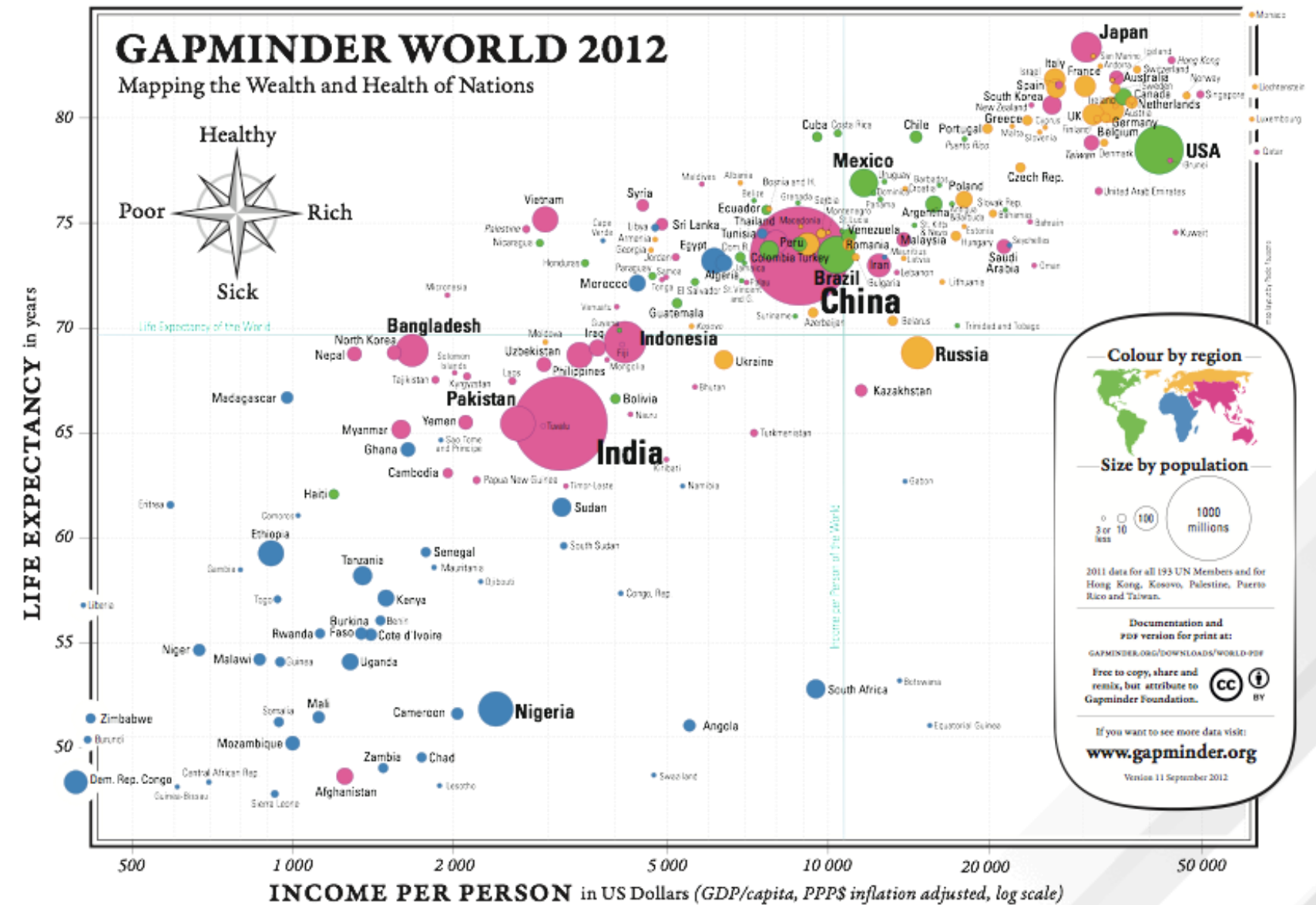
Infant mortality reduced by 90%

Maternal mortality reduced by 99%

Cost of **electricity** reduced by 20-fold

Cost of **transportation** reduced 100-fold

Telecom, information reduced by 1000-fold



HANS ROSLING | Swedish Statistician | Gapminder

50 Jobs / 25 Industries Disrupted - Thomas Frey

1. Taxi drivers
2. Uber & Lyft drivers
3. Delivery (FedEx, UPS, USPS) jobs
4. Courier jobs
5. Bus drivers
6. Truck drivers
7. Valet jobs
8. Chauffeurs and limo drivers
9. Road construction flag people
10. Drivers-Ed teachers
11. Traffic reporters
12. Traffic analysts
13. Car licensing and registration
14. Drivers test people
15. Rental car agents
16. Crash testers
17. Forklift drivers
18. Lawn mower operators
19. Snowplow operators
20. Water truck drivers
21. Water taxis
22. Ambulance drivers
23. Trash truck drivers
24. Tractor drivers
25. Combine operators

26. Auto industry lobbyists
27. Sprayer operators
28. Horse trailer drivers
29. Grain truck operators
30. Automated fruit harvester operators
31. Crane operators
32. Road grader operators
33. Earth movers
34. Street sweeper operators
35. Cement truck operators
36. Fuel truck operators
37. Auto sales – new and used
38. Account managers
39. Auto auctions
40. Credit managers
41. Loan underwriters
42. Insurance agents and sales reps
43. Insurance claims adjusters
44. Insurance call center agents
45. Traffic reporters on the news
46. Sobriety checkpoint people
47. Pothole repair people
48. Emission testers
49. Road and parking lot stripers
50. Night repair crews

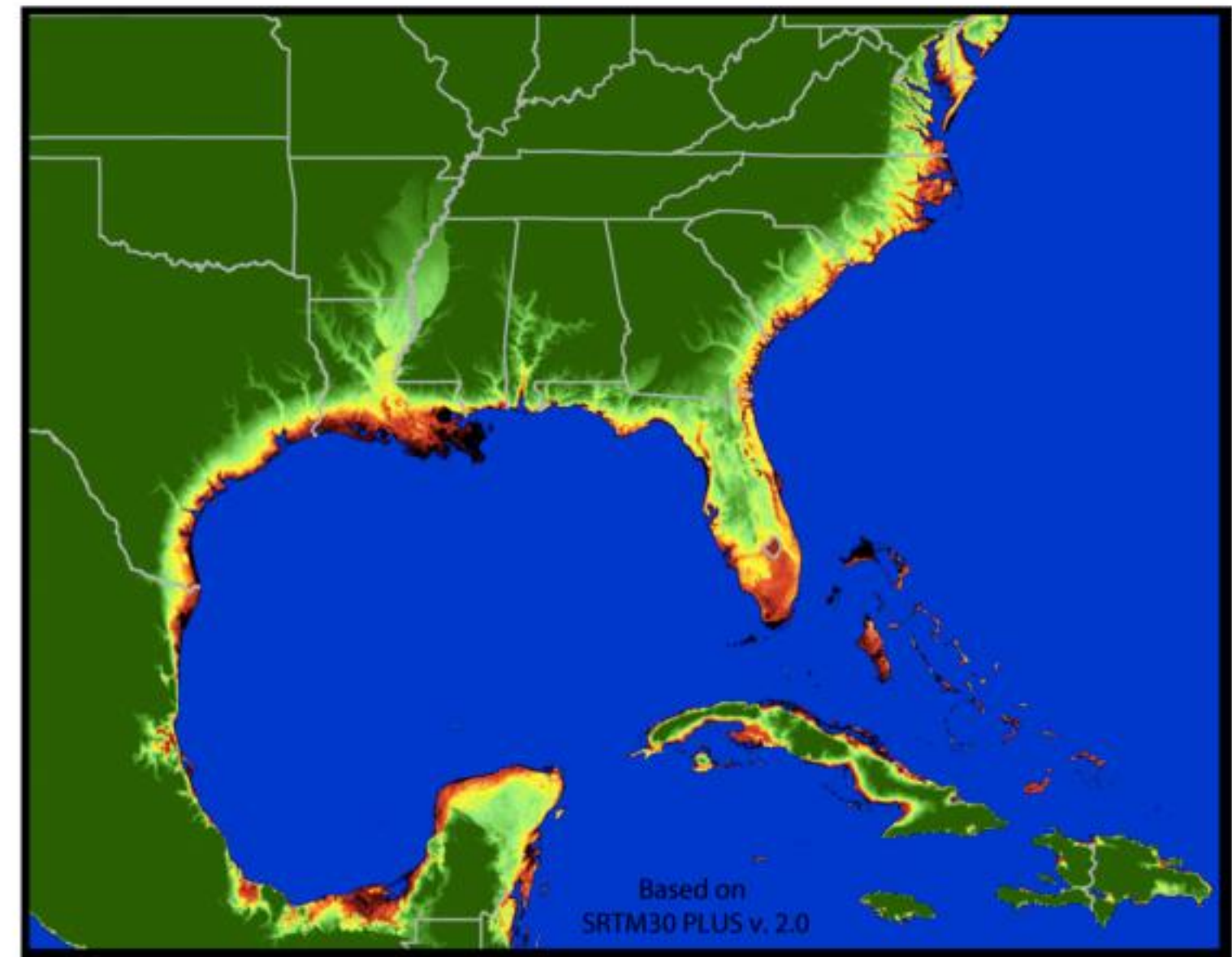
1. Roadside assistance
2. Auto repair shops
3. Body shops
4. Tow trucks
5. Glass repair
6. Auto locksmiths
7. Transmission repair shops
8. Auto part stores
9. Gas stations
10. Car washes
11. Oil change businesses
12. Detail shops
13. Tire shops
14. Brake shops
15. Emissions testing
16. Alignment shops
17. Driving tests
18. Road rage school
19. Parking garages
20. Valet services
21. Traffic cops
22. Traffic courts – lawyers, DA, judges
23. Driver licenses
24. Patrol cars and officers
25. DUIs and drunk driving checkpoints

Addressing Sea Level Rises

- // Conservative: 2 foot rise in 30 yrs
- // 2 degree C temperature increase
- // Extreme weather



Sea Level Risks - US East Coast



Information Layers

Accelerating Technologies

AI
Robotics
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Neuroscience
Energy
Computing

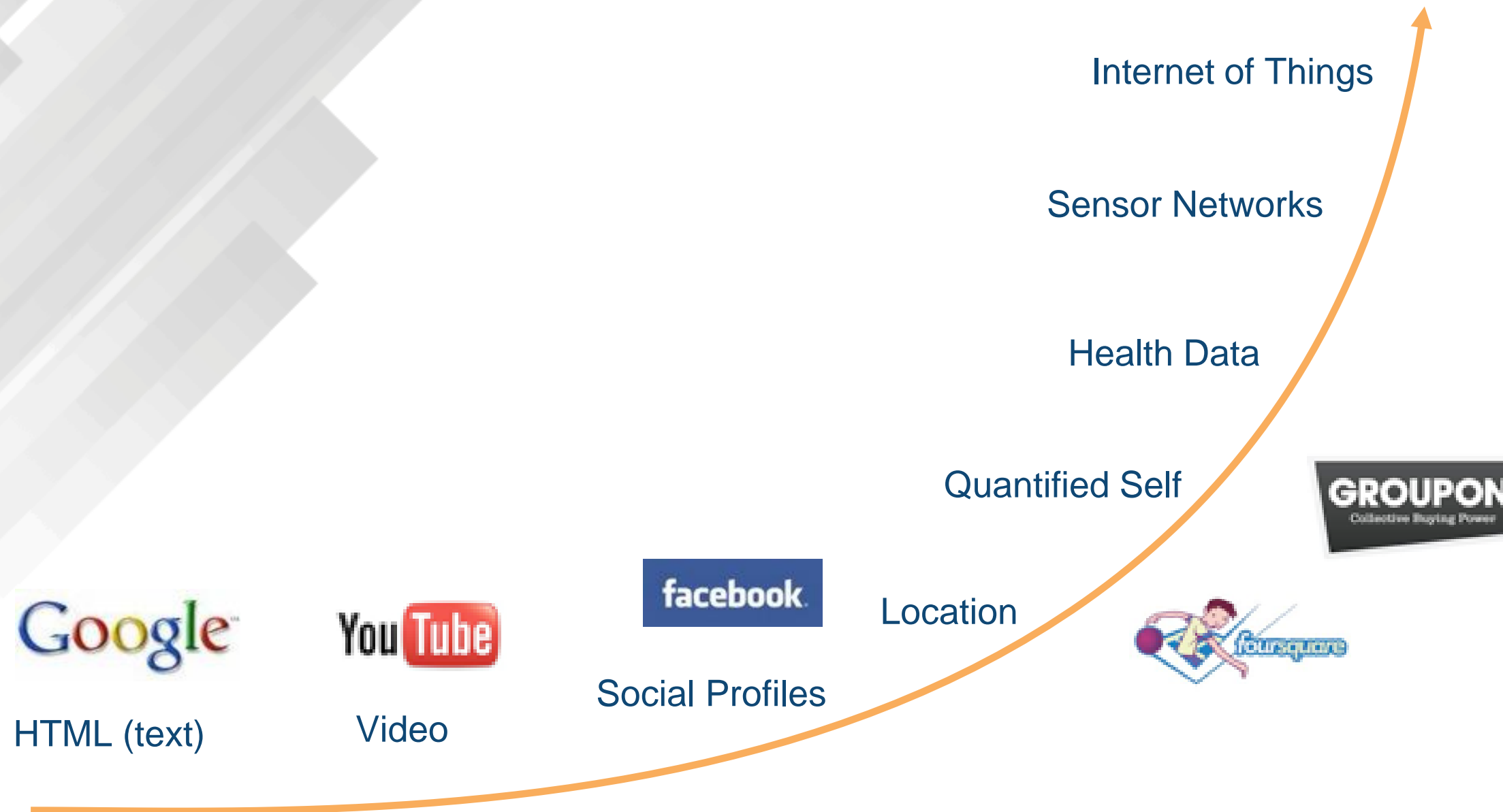
Singularity University

Digitize
Disrupt
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Democratize

New
Breakthroughs



NEW INFORMATION LAYERS

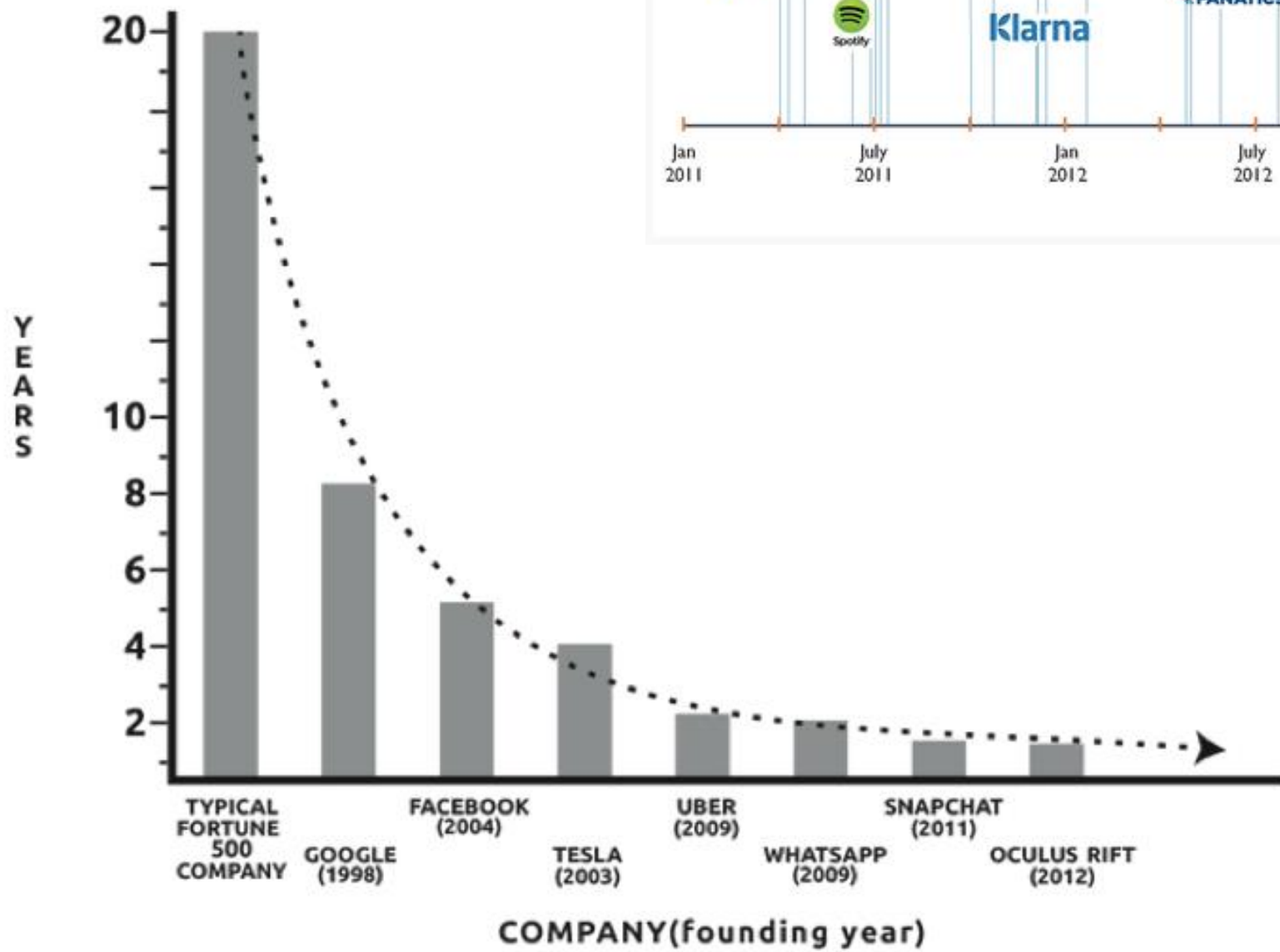
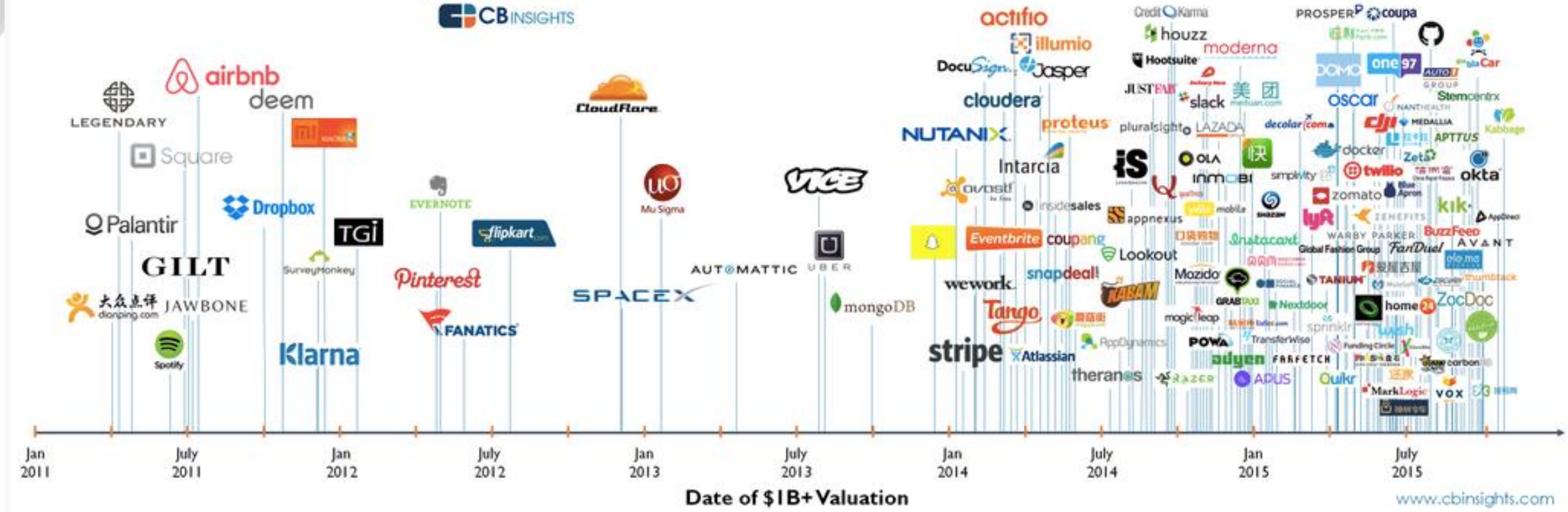


Market cap to a billion

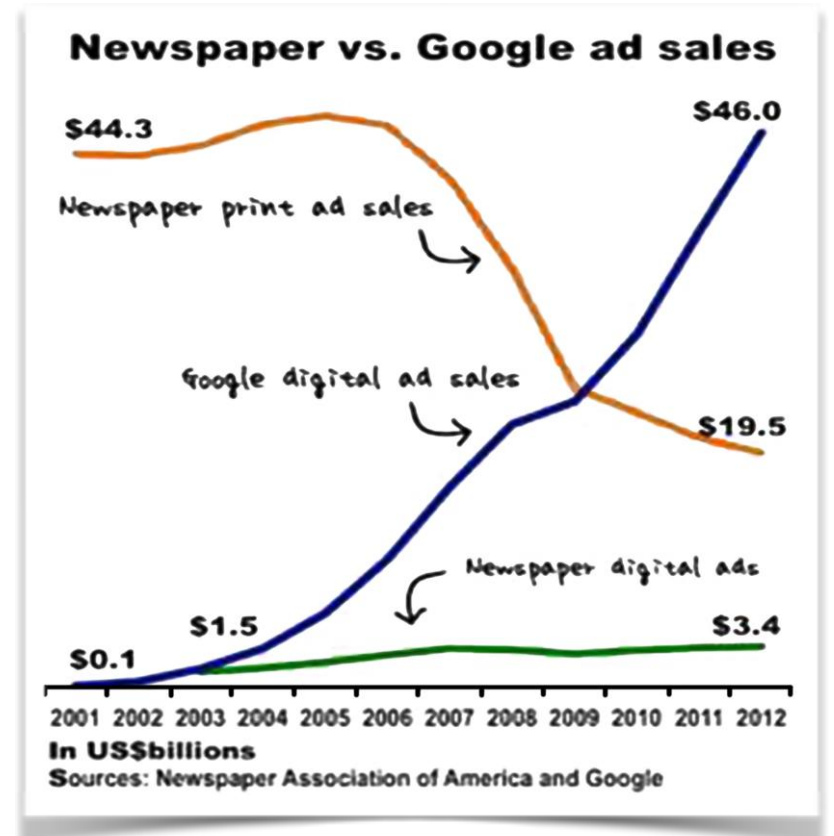
The Increasingly Crowded Unicorn Club

Private Unicorns since 2011

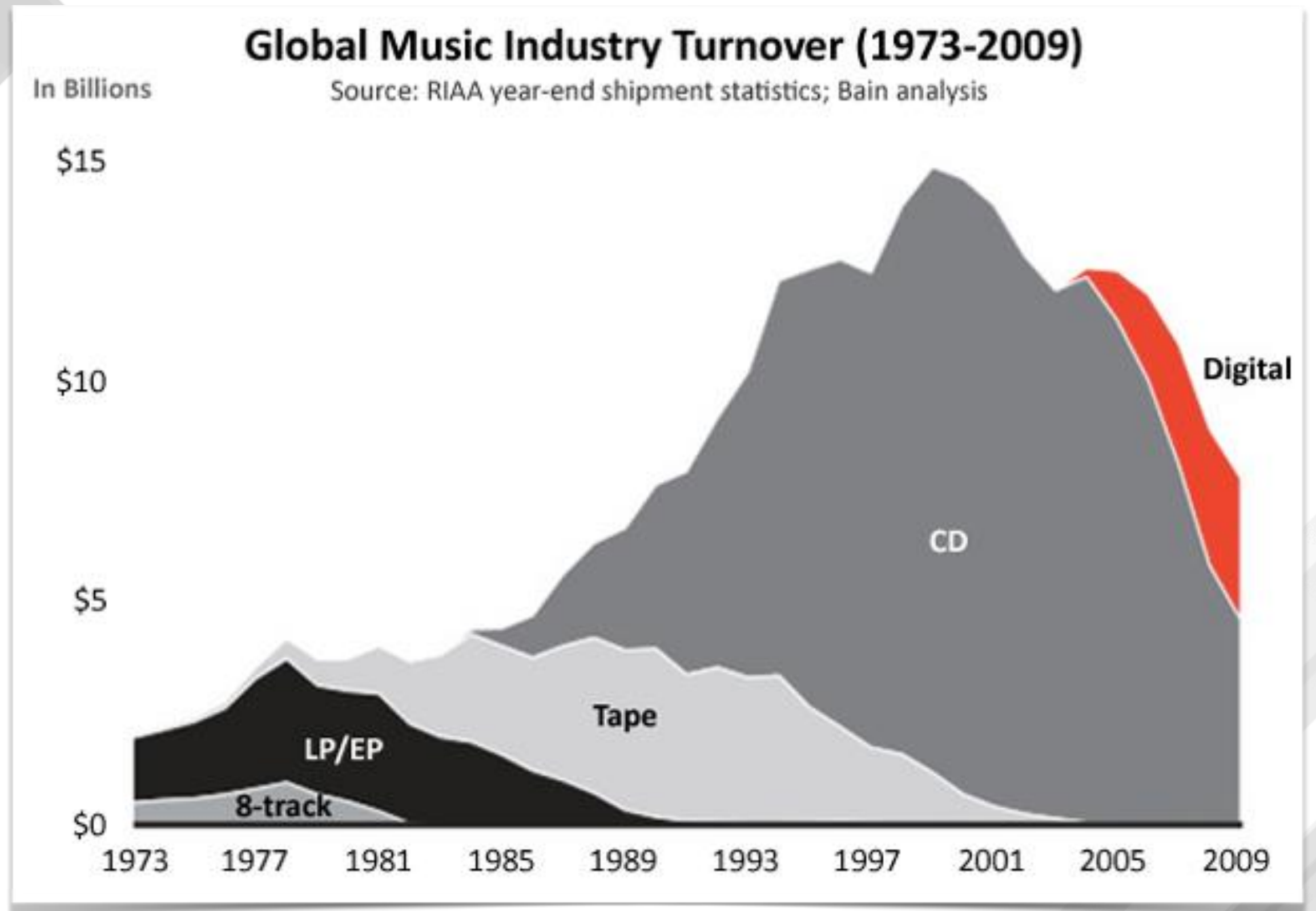
Created by: CBINSIGHTS



Newspapers



Music

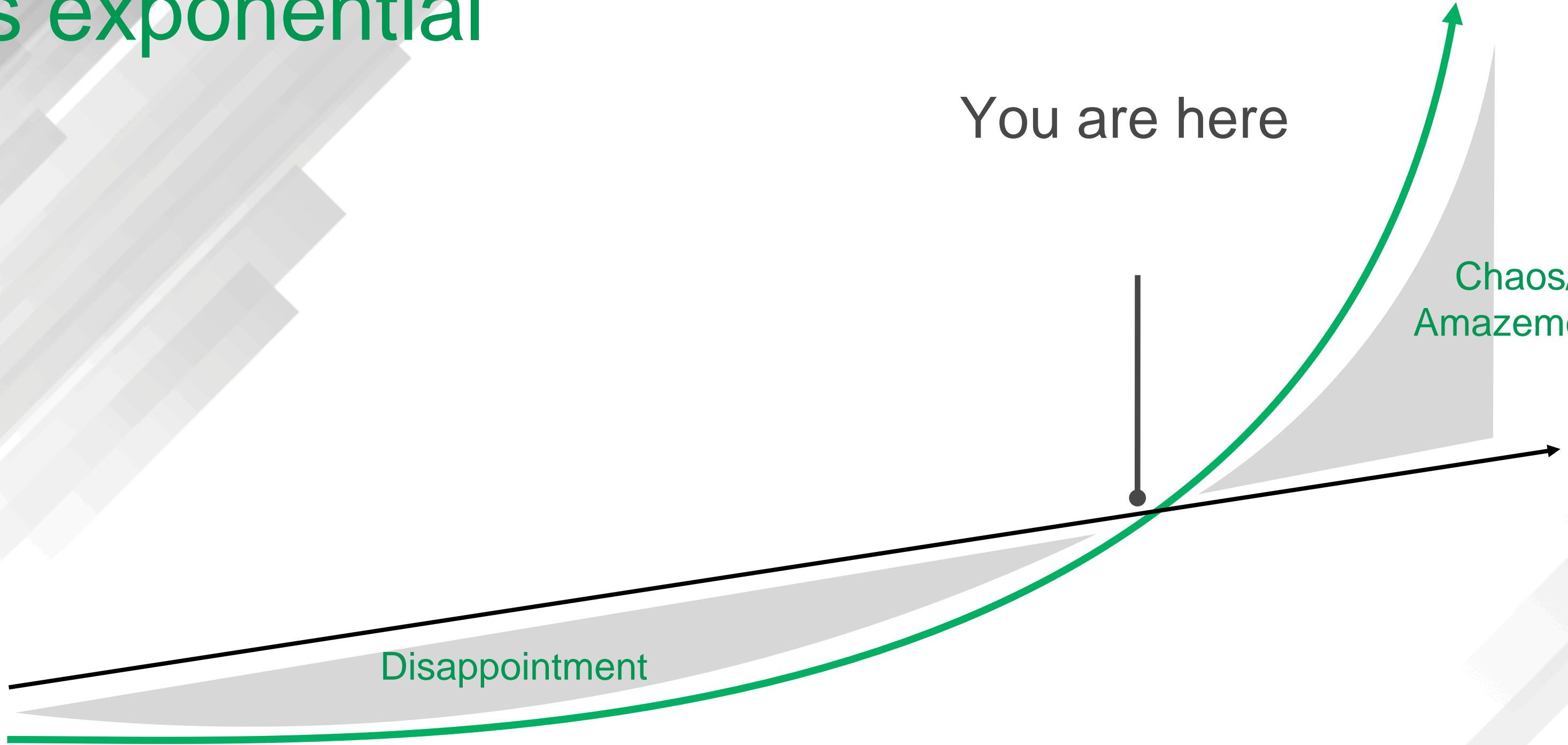


Deception of linear vs exponential

You are here

Chaos/
Amazement

Disappointment

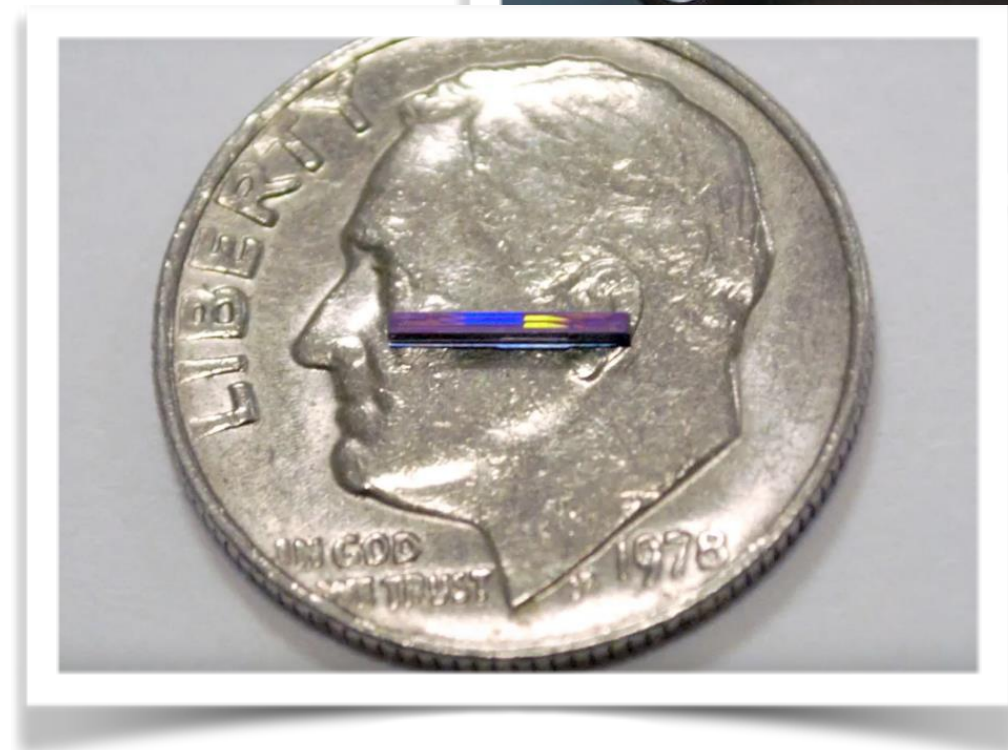


Cost of Lidar

2012: \$75,000

2017: \$50

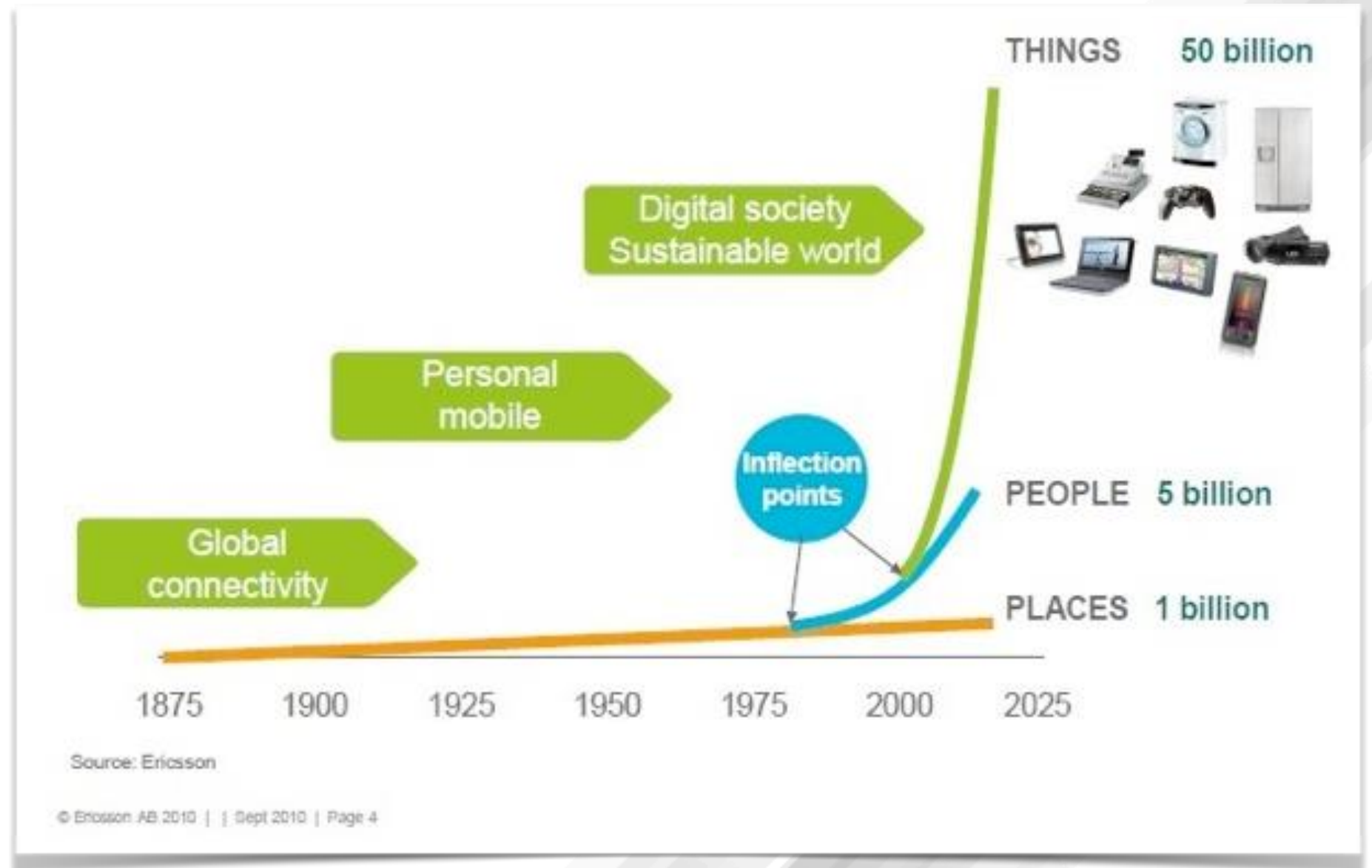
2020: \$10



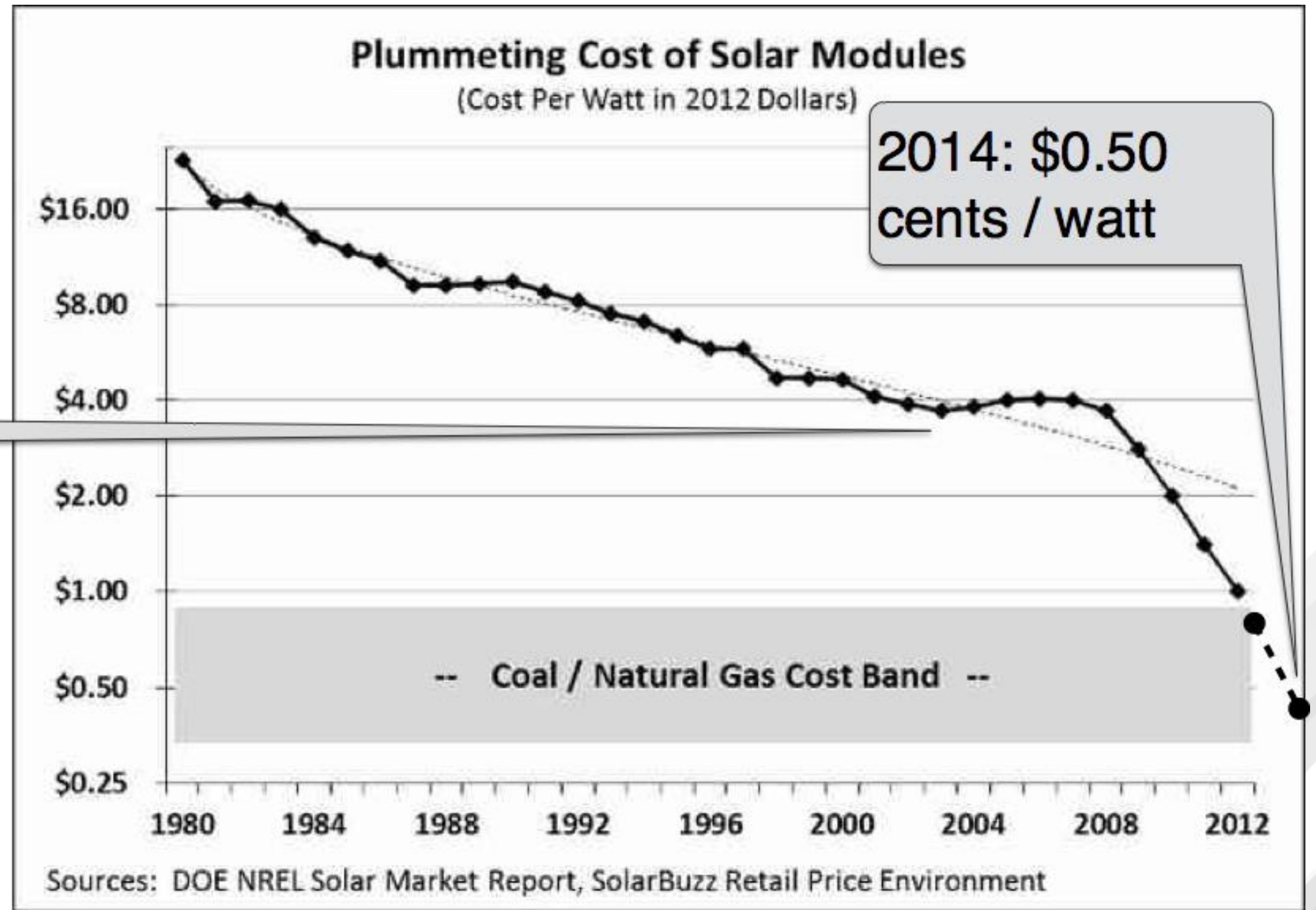
Internet of Things

~~50B~~ devices by 2020

2016 Prediction:
500B by 2020



Top Solar Expert: cost of all components (polycrystalline silicon ingots, protective glass & silver in wiring) will never drop below \$1/watt.



“Getting below \$1 has exceeded my expectations,”

Information Layers



Digitize
Disrupt
Demonetize
Democratize

New
Breakthroughs



Open Everything

**Domain is
Digitized**

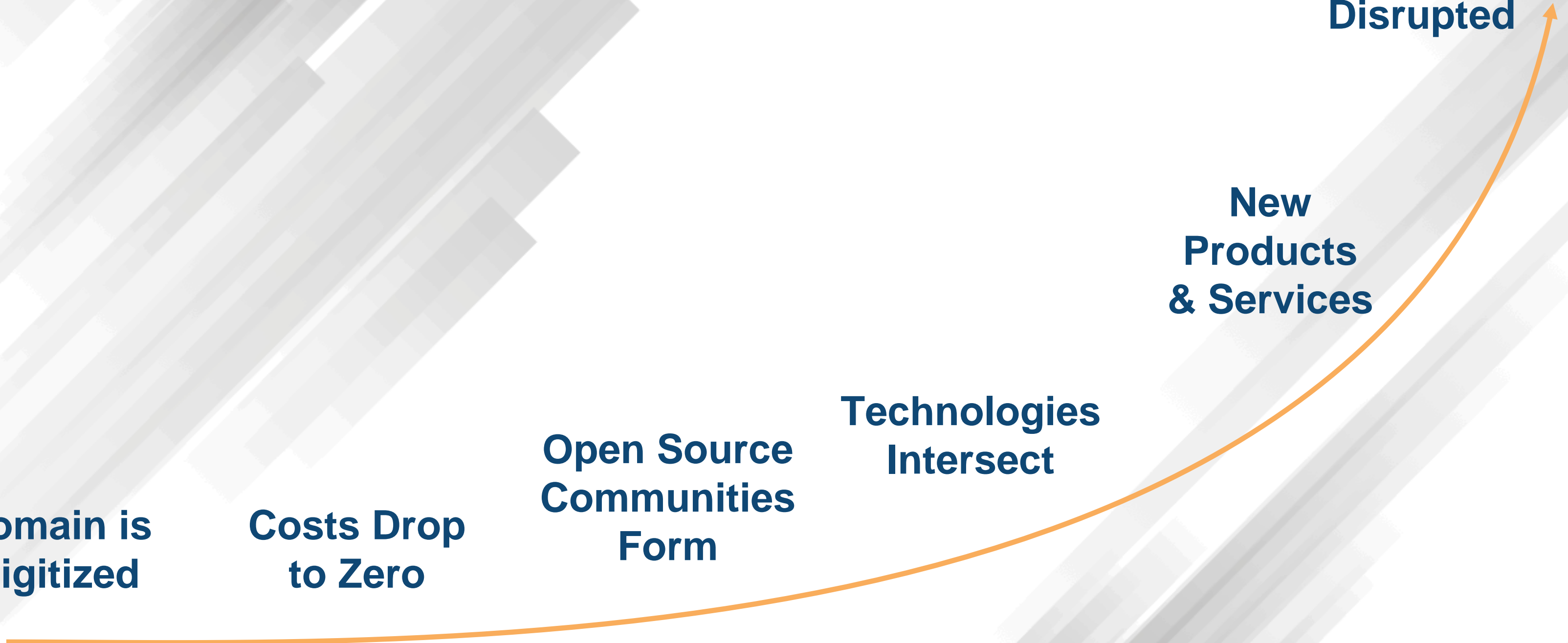
**Costs Drop
to Zero**

**Open Source
Communities
Form**

**Technologies
Intersect**

**New
Products
& Services**

**Existing
Businesses
Disrupted**



Eric Migicovsky - Pebble

Seed round: \$100k

20 investors

Raised: \$ 0



Crowdfunding – Kickstarter

KICKSTARTER Discover great projects Start your project

BLOG HELP SIGN UP LOGIN

Pebble: E-Paper Watch for iPhone and Android

A Product Design project in Palo Alto, CA by Pebble Technology - [send message](#)

PROJECT HOME UPDATES 4 BACKERS 23,341 COMMENTS 1,584

REMEMBER ME



BACK THIS PROJECT
\$1 MINIMUM PLEDGE

Bitcoin

\$300 million
moved in a day

Cost: \$6

Network

Bitcoin Network

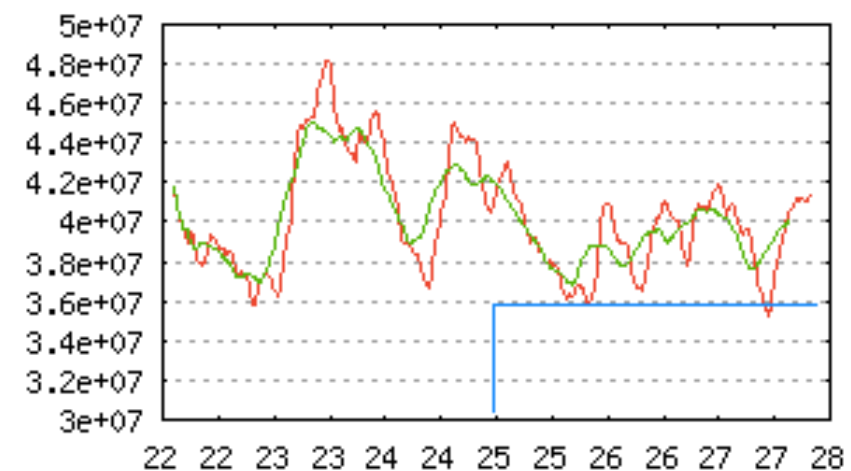
Economy

Total BTC	12,569,550 BTC
Market Cap based on latest prices	6,511,026,900 USD or 5,027,945,696 EUR or 20,526,075,150 PLN or 4,173,090,600 GBP
Transactions last 24h	70,980
Transactions avg. per hour	2957.50
Bitcoins sent last 24h	780,489.04 BTC
Bitcoins sent avg. per hour	32,520.38 BTC

Blocks

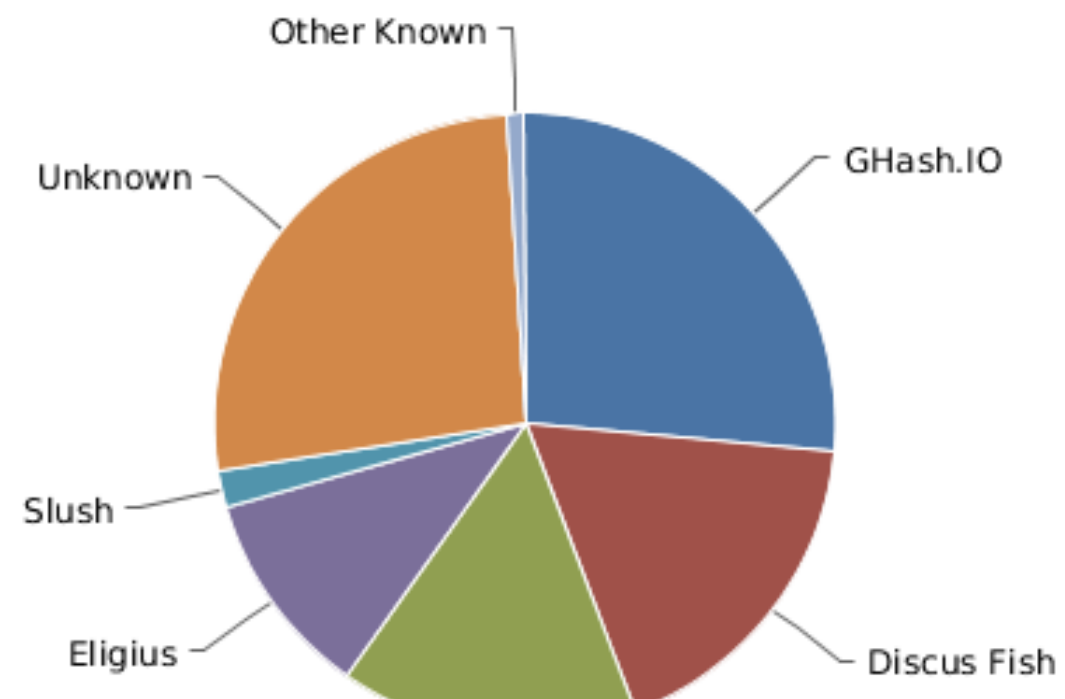
Count	292,781
Blocks last 24h	163
Blocks avg. per hour	6.79
Difficulty	5,006,860,589
Next Difficulty in 1555 blocks	5,246,869,694
Network Hashrate Terahashes/s	37558.56
Network Hashrate PetaFLOPS	476993.66

Network Hashrate



Source: <http://bitcoin.sipa.be/>

Hashrate Distribution



Financial

Equities

BTC Trading Corp. **CoinBr.com**

CryptoStocks | PicoStocks |

Forex

1Broker **Bit4X**

FNB FIRST NATIONAL INNOVATION BROKERS

kraken **LiteForex**

Contracts

MinerLease

Stocks

EX
BITCOIN STOCKS

Lending

Bit Deposit | **Bitbond.net**

BTCLenders | **coinlenders**

Futures

ICBIT
Bitcoin Exchange

Options

BTClevels
BTC Oracle

Interest

Bit Deposit
coinlenders

Payment Processing

Escrow

BTC-ASIA.com
Secure Bitcoin Escrows

BTCrow

escrow.com

Merchant Solutions / Transfers

BIPS | **BitInstant** | **BitMerch** | Bits of Gold | **coinbase** | **agencia**

bitpay

GLIPH | **DWOLLA** | **Fasterco.in** | **Inputs** | **MT.GOX** | **OpenCoin** | **paysrus** | **zpb**

Banking & eWallets

BIPS | **bcip** | Bit Deposit | **Bitcoinwallet.in** | Bits of Gold | **Blockchain**

coinb.in | **coinlenders** | **coinbase** | **EasyCoin.net** | **EasyWallet.org**

flexcoin | **Inputs** | **Kipochi** | **₹Bitco.in** | **StrongCoin.com** | **ValutaPay**

Currency Exchanges

Fixed-rate

artaBit | **bahtcoin** | BIPS | **BitAurum**

Bitcoll | **bitcoin** | Bitcoin China Trading Platform | **BitcoinCommodities**

#bitcoin-otc | **Bitcoin Malaysia** | **BITCOIN NORDIC** | **bitcoins now**

bitcoinplus.mx | **Bitcoinary** | **Bitinnovate** | **BitInstant**

B4P337 | **BitQuick.co** | **Bits of Gold** | **BITSERVICEX**

BitKoin | **Blockchain** | **btcx** | **BuyBTC** | **beta.cz** | **bitcoin**

centraw | **coinbase** | **dgtmkt** | **ecurrencyzone**

FastCash4Bitcoins | **GET BITCOIN** | **iCoin...** | **Introduce** | **KOINMAIL**

LONDONBITCOINEXCHANGE | **mercadobitcoin** | **NANAIMO GOLD**

OK PAY | **₹Bitco.in** | **THE ROCK** | **ValutaPay**

Real-time Trading

BitBox

Bitcoin Central

Bitcoin HK Exchange

bitcoin.de

Bitcoin-24x

BitMarket.co
Mercado de Bitcoin

bitNZ

BITSTAMP

BTC

BTC.SX

CAMP BX

Crypto-Trade

EX ANTE

FYB-SG

WTERSANGO

Kapiton

LocalBitcoins.com

MoneyPakTrader

MT.GOX

THE ROCK

₹Bitco.in

snap swap

UK Bitcoin Market

Vircurex

VirtEx
Canadian Virtual Exchange

VirWOX

WeExchange

Bulk Trades

Bitcoin-24x

bitpay

Local / In-Hand Exchanges

BTCSPOT.COM

bitcoinlocator

LocalBitcoins.com

Trade Your Bitcoin!

Gift/Debit Cards

BIPS | **BitCC** | **BTCC** | **BTCCINSTANT.COM** | **BTCLot Web**

B2U | **Cash4Coins** | **Cryptcard** | **giftcardBTC** | **giftforcoins.com**

gyft | **KED/MOCHA** | **₹Bitco.in** | **Sell Bitcoin for Cash.com** | **spendbitcoins**

Precious & Base Metals/Coins

AGORACOMMODITIES | **AMXCHINO** | **AMAGMETALS** | **BitcoinCommodities**

bullionBIT | **Physical Bitcoins by Casascius** | **coin.me.uk** | **Coinabul** | **CoinedBits.com**

HOPEA FI | **Midas Bitcoin** | **QUEEN HOUSE** | **SHINE SILVER** | **WISERMETALS**



Bitcoin as currency

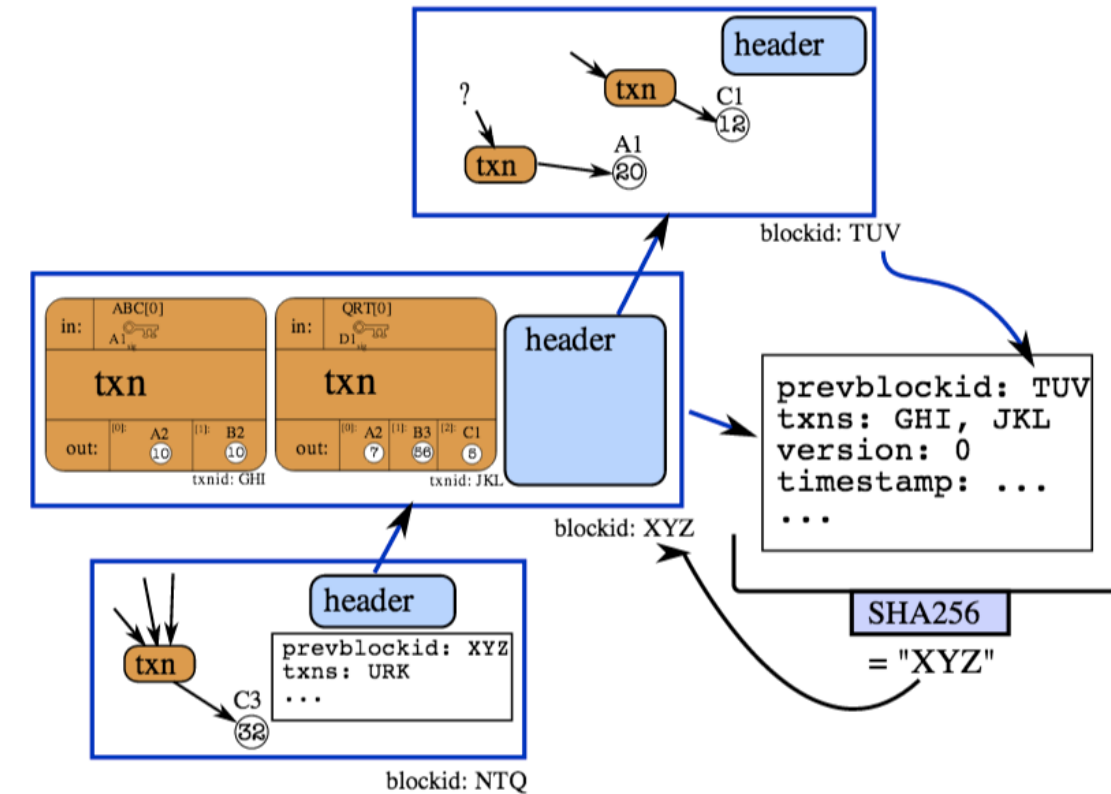
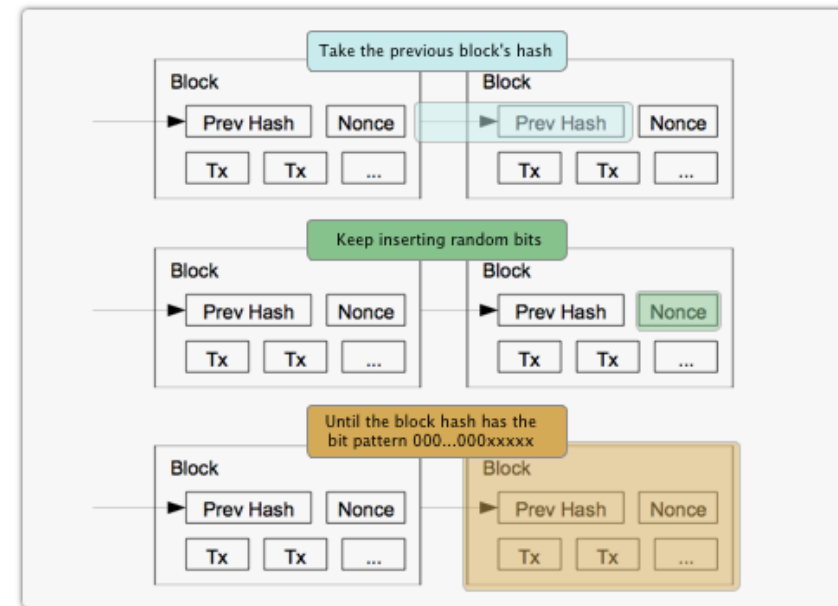
- Scarce
- Divisible
- Transportable
- Recognizable
- Fungible
- Durable



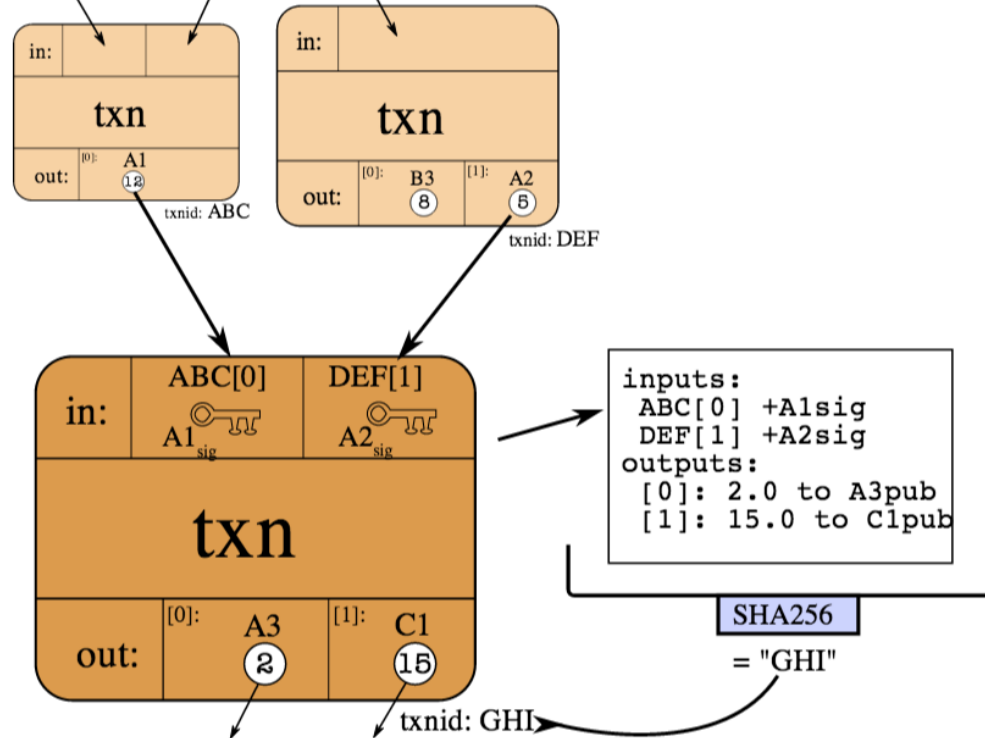
micro-transactions

Block Chain

The Block Chain



Serialized Transactions



<http://bitly.com/bitcoinsalim2>

"It took three days to settle and clear [trades] and now we can do it in 10 minutes"

Bob Greifeld, CEO - Nasdaq



Block Chain - applications

International payments

Contracts

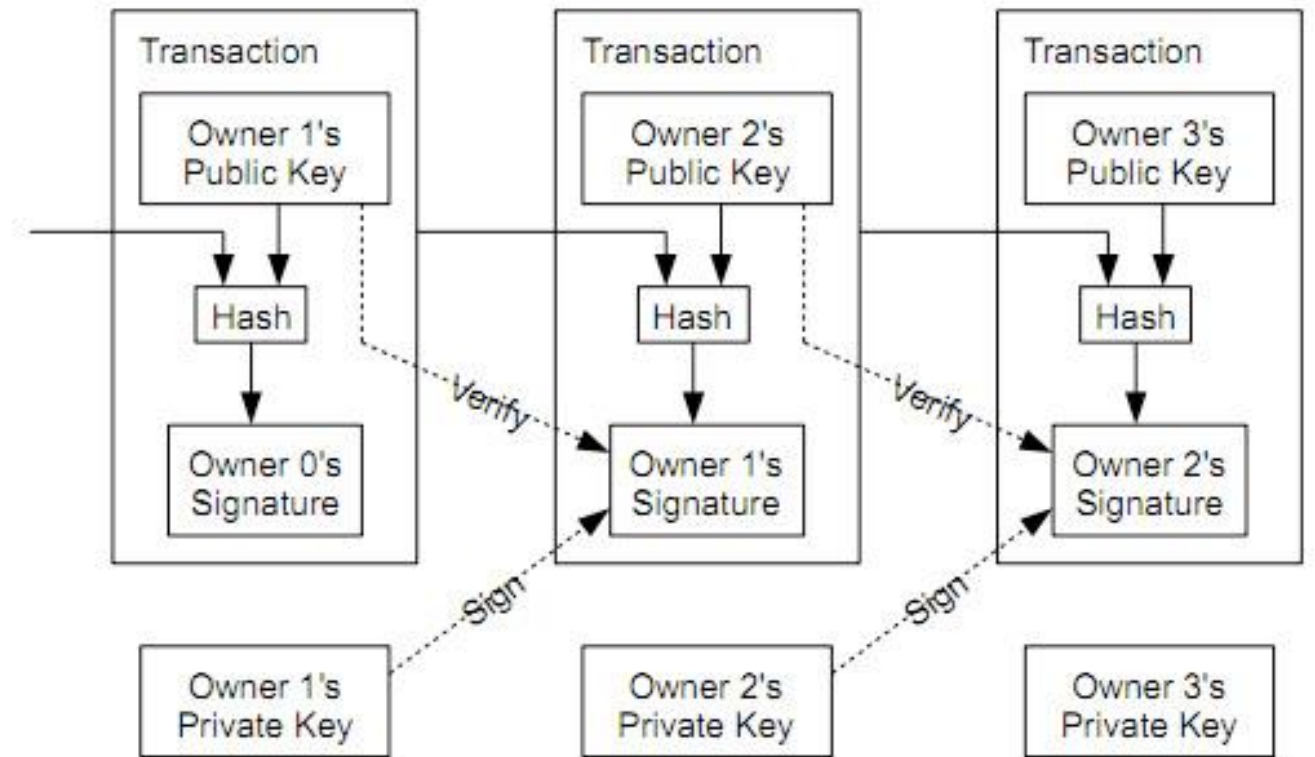
Transaction logs

Voting systems

Registries

Multi-signatory contracts (joint savings, forex, trust funds)

DACs (Distributed Autonomous Corporations - Ethereum)



Open Everything

Domain is Digitized

Costs Drop to Zero

Open Source Communities Form

Technologies Converge



New Products & Services

Existing Businesses Disrupted



Hyperloop



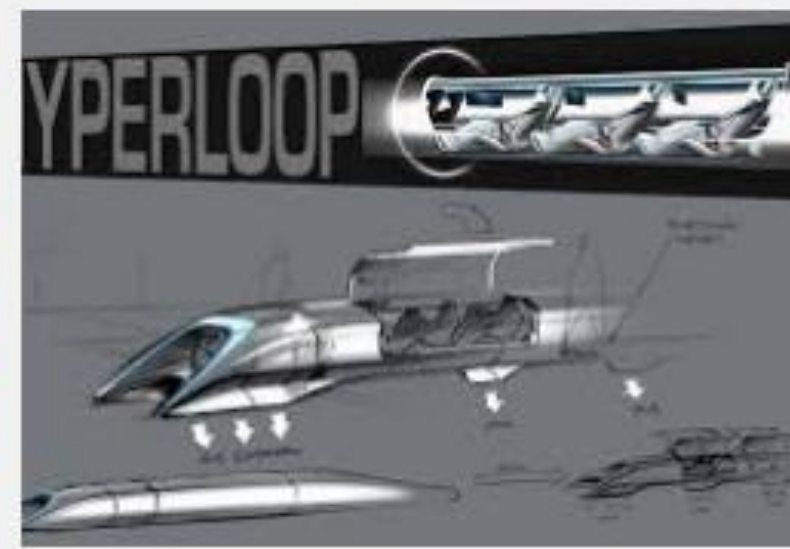
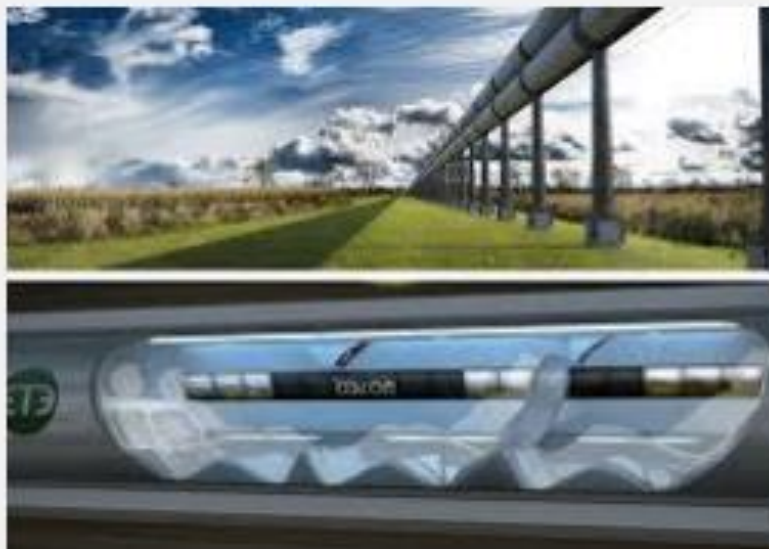
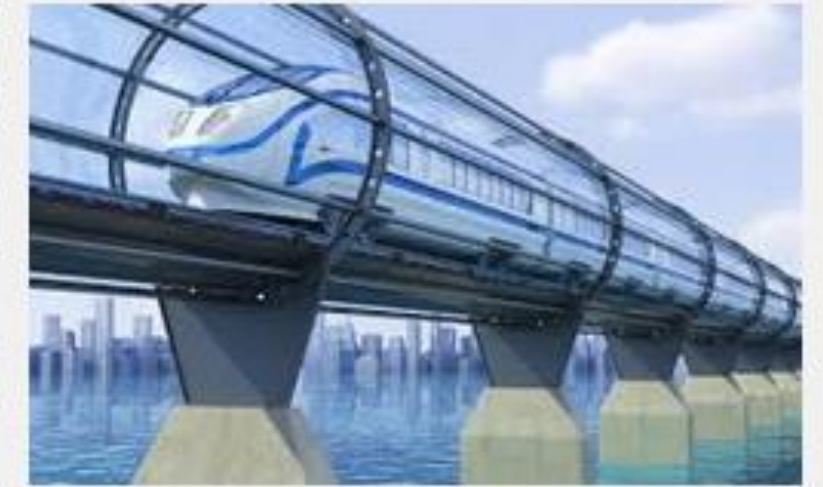
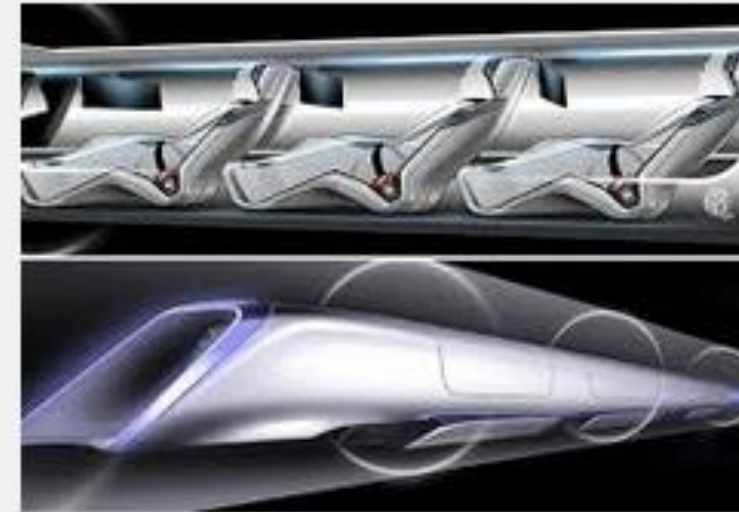
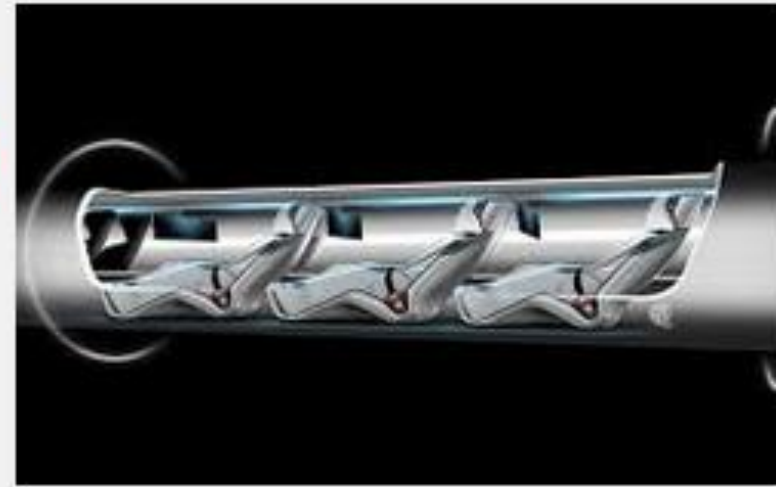
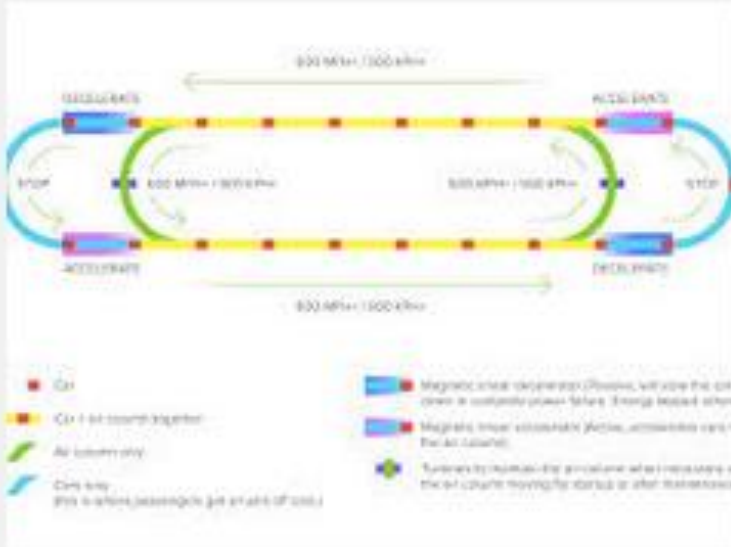
Tesla



Concept



Map

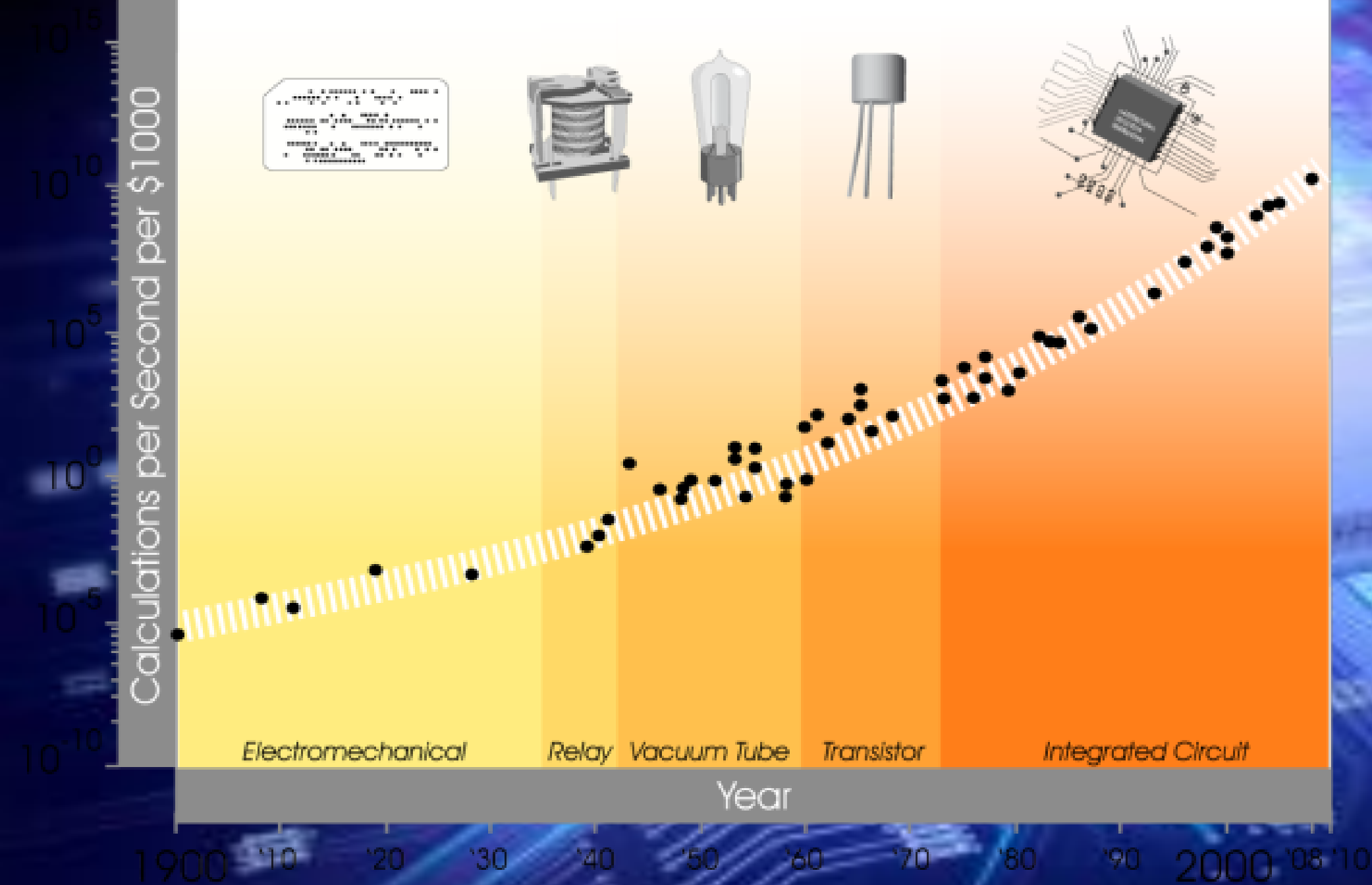


Powered by progress in computing

Exponential Growth of Computing for 110 Years

Moore's Law was the Fifth, not the First, Paradigm to Bring Exponential Growth in Computing

Logarithmic Plot



How many people are online?

2010
1.2
billion

2015
2.8
billion

2020
>6
billion



Google Loon



SkyFi

60 nano
satellites

1 gigabyte



Discussion Topics

Jobs

Environment

Healthcare

Industry

Education





**What's
Next?**



Past



Marketing, sales & service

- *social, mobile & online for front-end functions*

Present



Production & Manufacturing

- *nanotech, robotics, 3D printing, sensors, AI*

Future

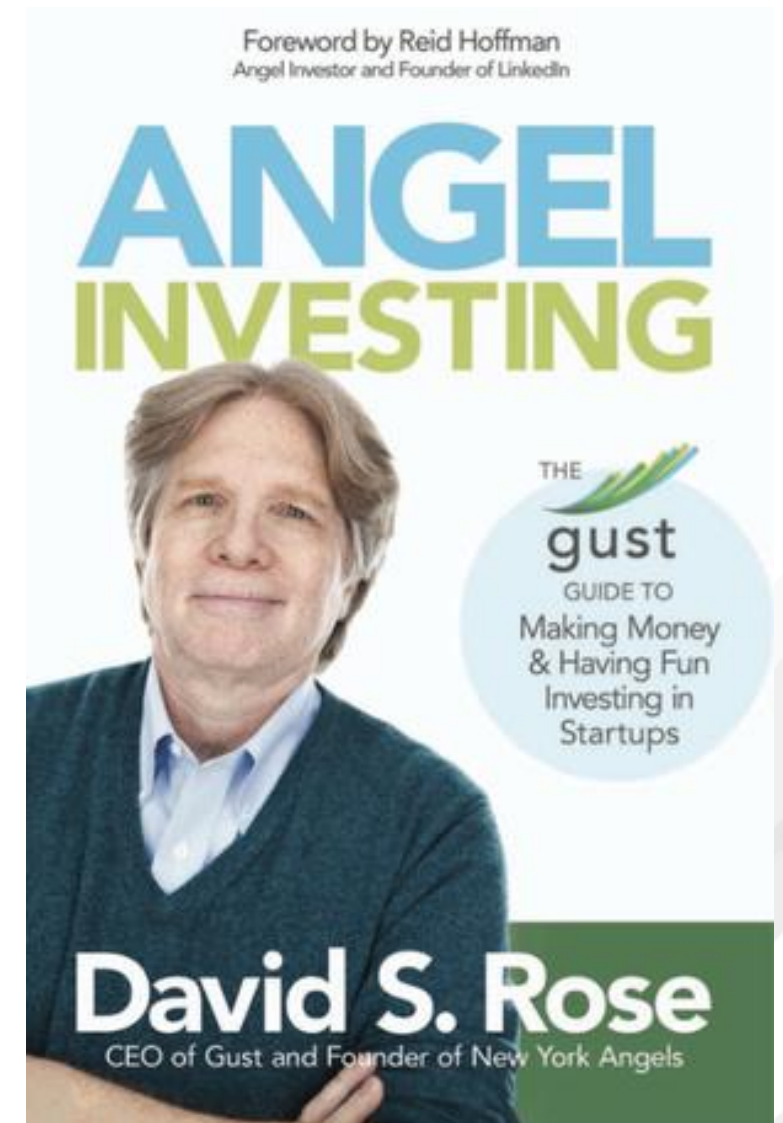


Innovation

- *Crowdsourcing (leveraging the crowd), DIY*, P2P**, Crowd companies, AI*

David Rose - Gust

“Any company designed for success in the 20th century is doomed to failure in the 21st.”





**Frost & Sullivan
2014 GIL Book of the Year**
www.exponentialorgs.com

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NEWS POPULAR VIDEOS FORTUNE 500

LEADERSHIP BUSINESS BOOKS

5 Best Business Books

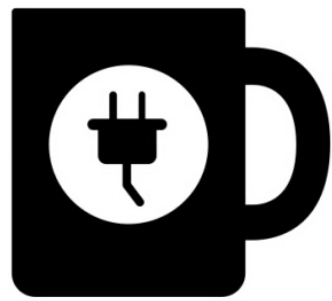
by Verne Harnish @theGrowthGuy NOVEMBER 17, 2015, 9:00 AM EST

Strategy

Exponential Organizations, by Salim Ismail

ExOs.. 10x better performance

[TOPCODER]



kaggle

Airbnb Hotels	90x more listings per employee
GitHub Software	109x more repositories per employee
Local Motors Automotive	1000x cheaper to produce new car model, 5-22x faster process for a car to produce (depending on vehicle)
Quirky Consumer Goods	10x faster product development (29 days vs 300 days)
Google Ventures Investments	2.5x more investments in early stage startups, 10x faster through design process
Valve Gaming	30x more market cap per employee
Tesla Automotive	30x more market cap per employee
Tangerine (formerly ING Direct Canada) Banking	7x more customers per employee, 4x more deposits per customer

bitly.com/exotop100 - Secrets of Unicorns



Top 100 ExOs

The business world has learned over the last two decades how to scale technology – now it's time to scale. A new breed of Exponential Organizations (or ExOs) are delivering 10x or better performance benchmarks than their peers. We present below the 100 most scalable organizations in the world, based on the diagnostic survey in our book, "Exponential Organizations".



ted

- // Started off as 'just' a conference
- // Several thousand passionate attendees
- // Exposed TED Talks on the web
 - over a billion views
- // Created TEDx events
 - over 10,000 in five years
- // Scaling the community



Local Motors - Strati

	CarCo	Local Motors
Cost of Design	\$3 billion	\$3 million
Number of Parts	25,000	50
Assembly Time	1000 man hrs	1 man hr
Area	1 million sq feet	1500 sq feet



the ExO formula

$$\text{ExO} = \text{MTP} + \text{SCALE} + \text{IDEAS}$$

strong MTPs

"Radical breakthroughs for the benefits of humanity"

"Positively impact one billion people"

"Organize the world's information"

"Make invention accessible"

"Ideas worth spreading"

"Open Happiness"

Uniquely yours
Highly Aspirational
Neither narrow nor technology specific
Aimed at Heart & Mind
Declared with sincerity & confidence

the ExO formula

$$\text{ExO} = \text{MTP} + \text{SCALE} + \text{IDEAS}$$

S.C.A.L.E

External Attributes of an ExO

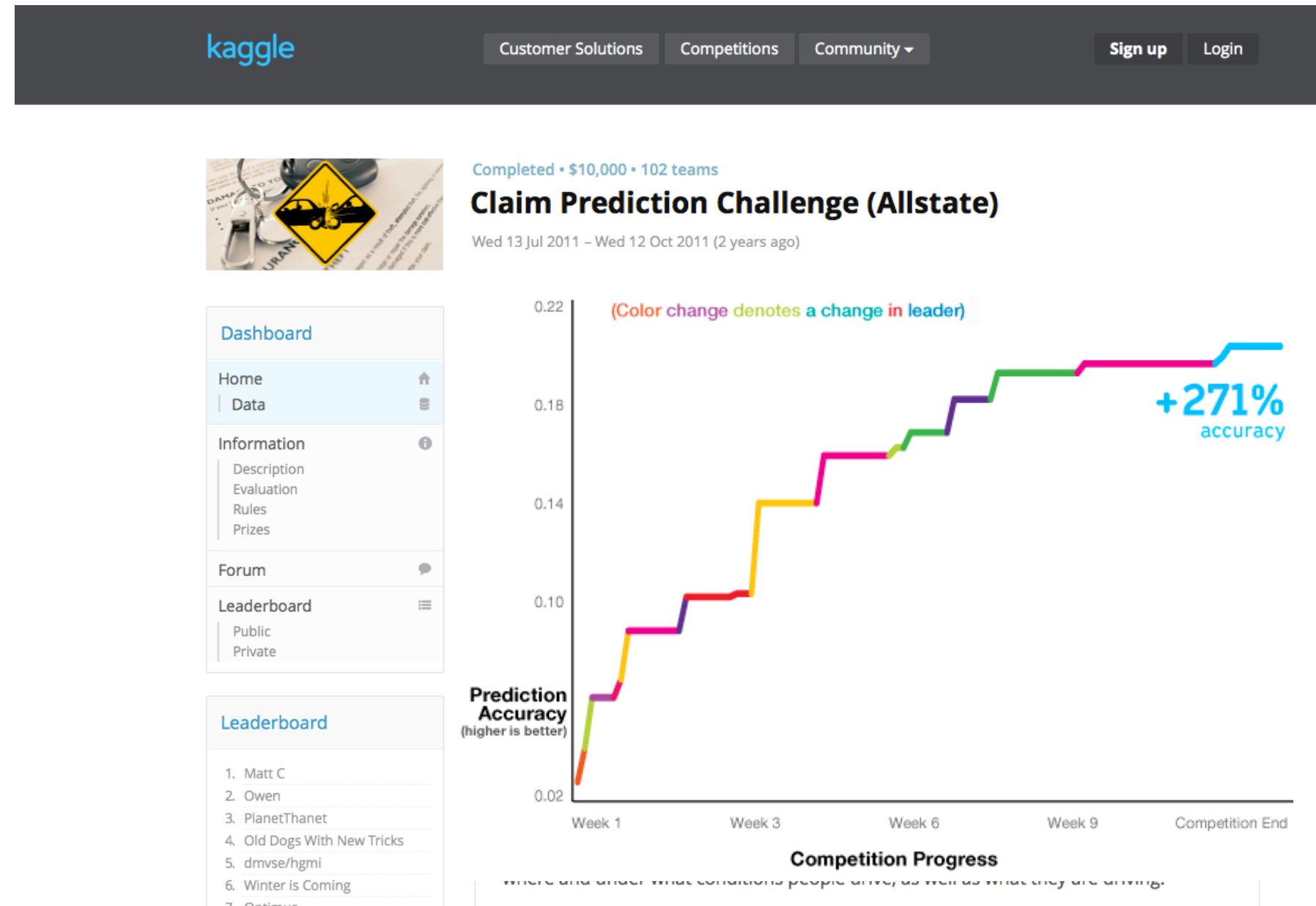
S – Staff on Demand

C – Community & Crowd

A – Algorithms

L – Leveraged Assets

E – Engagement



I.D.E.A.S

Internal Attributes of an ExO

I – Interface Processes

D – Dashboards

E – Experimentation

A – Autonomy

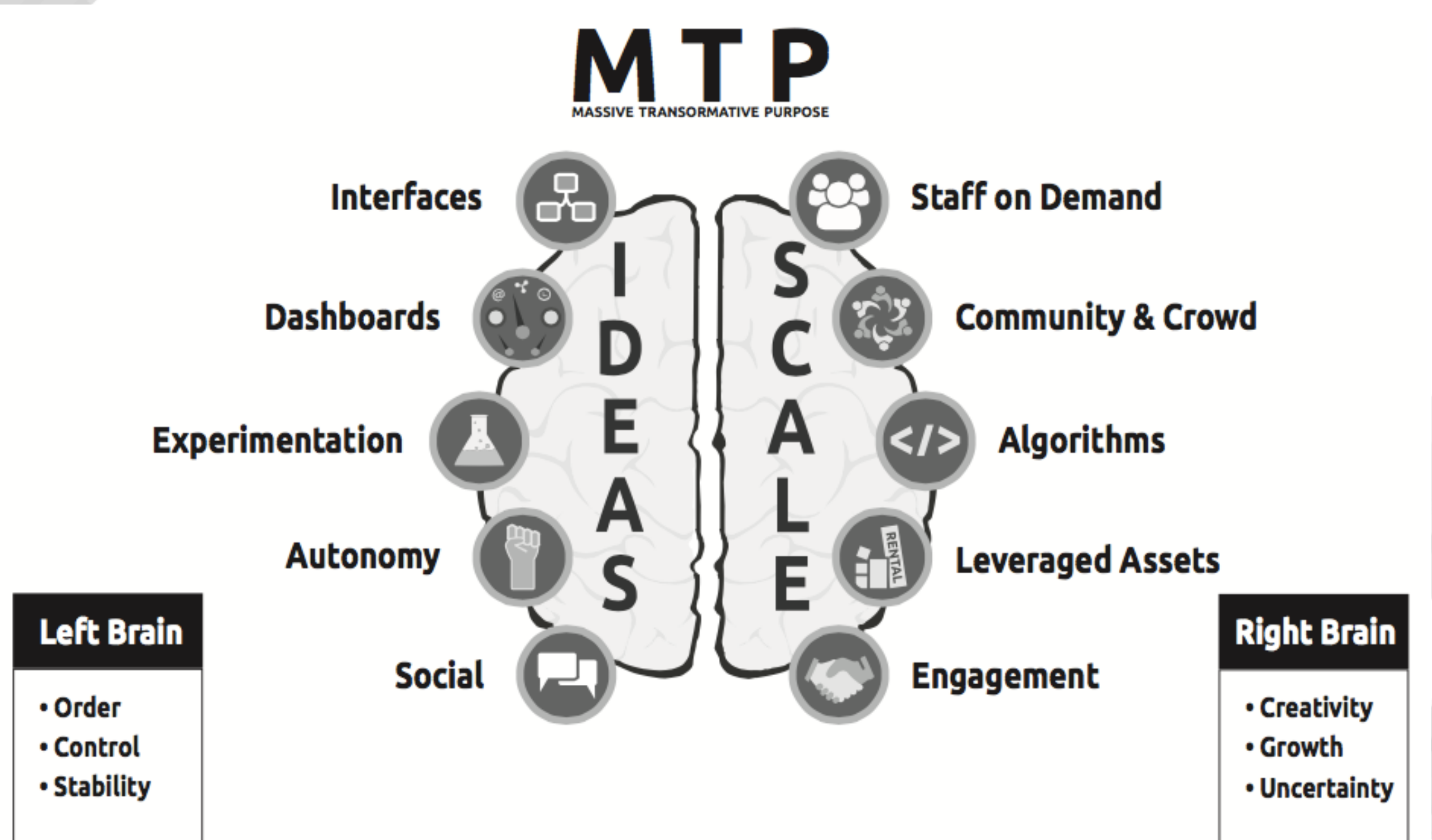
S – Social Technologies



Autonomy - 3x



4 out of 10 = ExO



EXPONENTIAL ORGANIZATIONS

Why new organizations are ten times better, faster, and cheaper than yours (and what to do about it)

SALIM ISMAIL

with **MICHAEL S. MALONE** and **YURI VAN GEEST**

FOREWORD by **PETER H. DIAMANDIS**

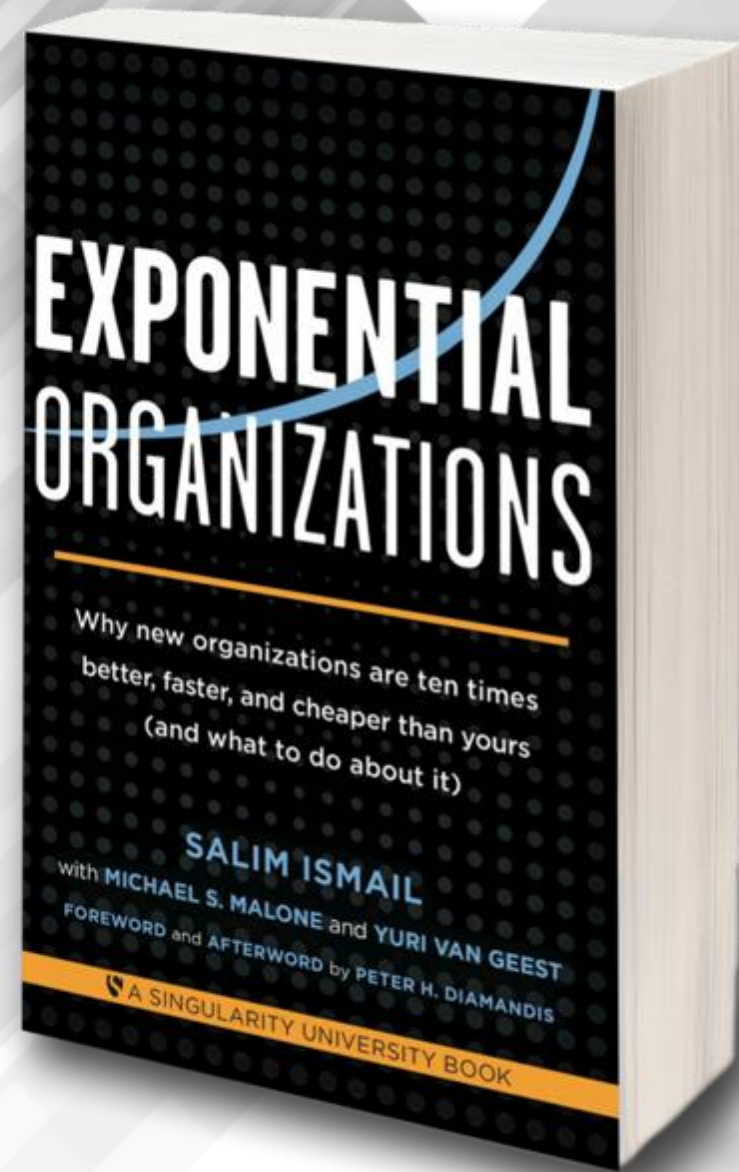
A SINGULARITY UNIVERSITY BOOK

Valuation increase - 10 quarters

Company	Age (years)	2011 Valuation	2014 Valuation	Increase
Haier	30	\$19 billion	\$60 billion	3x
Valve	18	\$1.5 billion	\$4.5 billion	3x
Google	17	\$150 billion	\$400 billion	2.5x
Uber	7	\$2 billion	\$20 billion	10x
Airbnb	6	\$2 billion	\$10 billion	5x
Github	6	\$500 million (est)	\$7 billion	14x
Waze	6	\$25 million	\$1 billion (in 2013)	50x
Quirky	5	\$50 million	\$2 billion	40x
Snapchat	3	0	\$10 billion	XXX

The ExQ Diagnostic

survey.exo.works/exponentialorgs



17. To what extent do you tolerate failure and encourage risk-taking? *

- Failure is not an option (NASA) and is a Career Limiting Move (CLM)
- Failure and Risk are encouraged, but in name only and not tracked or quantified
- Failure and risk-taking are allowed and measured, but sandboxed in Skunkworks or very defined boundaries (e.g. Lockheed skunkworks)
- Failure and risk-taking are expected, pervasive, measured and even celebrated across the organization (e.g. Amazon, Google, P&G Heroic Failure Award)

Ranking the Fortune 100 by their ExO Score

f100.exponentialorgs.com

Yuri van Geest
Michiel Schuurman
ExO Experts



HULT International
Business
School

rokk3rlabs 
co•build amazing companies

Fortune 100 by ExQ - f100.exponentialorgs.com

F100 Company	ExQ
Google	72.9
Amazon	66.2
Apple	62.6
International Business Machines (IBM)	61.0
Verizon Communications	58.8
General Electric	56.6
Microsoft	55.9
Cisco Systems, Inc.	55.8
The Walt Disney Company	54.8
Oracle Corporation	54.0
The Coca-Cola Company	49.5
DIRECTV	49.0
McKesson	49.0
United Parcel Service (UPS)	49.0
AT&T	48.8
Humana Inc.	48.8
State Farm Insurance Cos.	48.4
The Allstate Corporation	47.3
Lockheed Martin Corporation	47.2
Comcast	47.0
American Express Company	46.8
Twenty-First Century Fox, Inc.	46.6
PepsiCo	46.5
Walgreen Co.	46.5
Anthem Inc. (Wellpoint)	46.4
Johnson Controls, Inc.	46.0
Mondelez International, Inc.	45.6
Merck & Co., Inc.	45.0
United Continental Holdings, Inc.	45.0
Ford Motor	43.2
Lowe's Companies	43.0
UnitedHealth Group	43.0
Home Depot	43.0

F100 Company	ExQ
Wal-Mart Stores	42.7
World Fuel Services Corporation	42.5
John Deere Company	42.4
Wells Fargo	42.4
General Motors	42.0
New York Life Insurance Company	42.0
Supervalu Inc.	42.0
The Goldman Sachs Group, Inc.	41.8
Archer Daniels Midland (ADM)	41.8
Prudential Financial, Inc.	41.4
Target	41.4
Sears Holdings Corporation	41.3
E.I. du Pont de Nemours and Company (DuPont)	41.3
CHS Inc.	41.0
FedEx Corporation	41.0
Kroger	41.0
United Technologies	41.0
Procter & Gamble	40.9
Cigna Corporation	40.7
Hewlett-Packard	40.7
TIAA-CREF	40.7
Boeing	40.3
CVS Caremark	40.0
Best Buy Co., Inc.	40.0
Intel Corporation	40.0
Liberty Mutual Holding Company Inc.	40.0
Pfizer	39.8
Citigroup	39.8
Johnson & Johnson	39.3
Honeywell International Inc.	39.3
Ingram Micro Inc.	39.3
Massachusetts Mutual Life Insurance Company	39.0
Delta Airlines, Inc.	39.0

F100 Company	ExQ
Delta Airlines, Inc.	39.0
American International Group (AIG)	38.3
Express Scripts Holding	38.0
Tyson Foods, Inc.	37.5
AmerisourceBergen	37.0
Exxon Mobil	37.0
Nationwide Mutual Insurance Co.	37.0
Safeway Inc.	36.3
Freddie Mac	36.3
MetLife	36.0
Sysco Corporation	36.0
Caterpillar	34.5
Chevron	34.5
ConocoPhillips	34.5
General Dynamics Corporation	34.5
Cardinal Health	34.0
Dow Chemical	34.0
Fannie Mae	34.0
Intl FCStone Inc.	34.0
Aetna Inc.	33.5
Morgan Stanley	33.5
Berkshire Hathaway	33.2
J.P. Morgan Chase & Co.	33.0
Bank of America	32.5
Marathon Petroleum	32.3
Costco Wholesale	32.0
Philip Morris International Inc.	31.6
Hess Corporation	31.3
HCA Holdings, Inc.	31.0
Phillips 66	30.7
Tesoro Corporation	30.0
Valero Energy	29.8
Plains GP Holdings, L.P.	27.5
Energy Transfer Equity, L.P.	26.5
Enterprise Products Partners L.P.	23.0

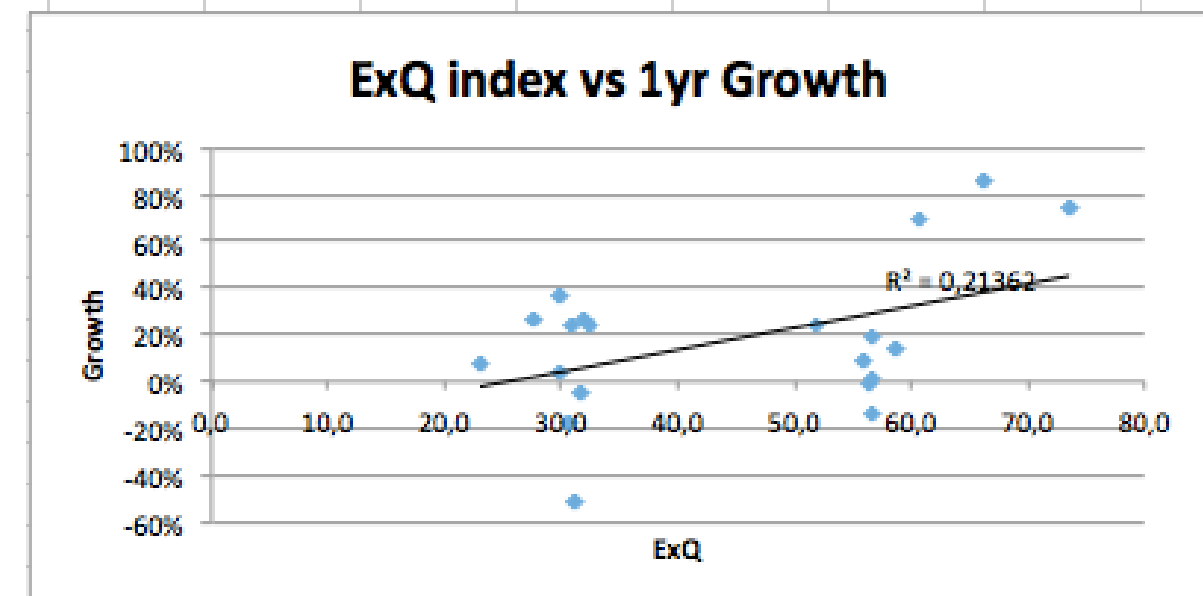
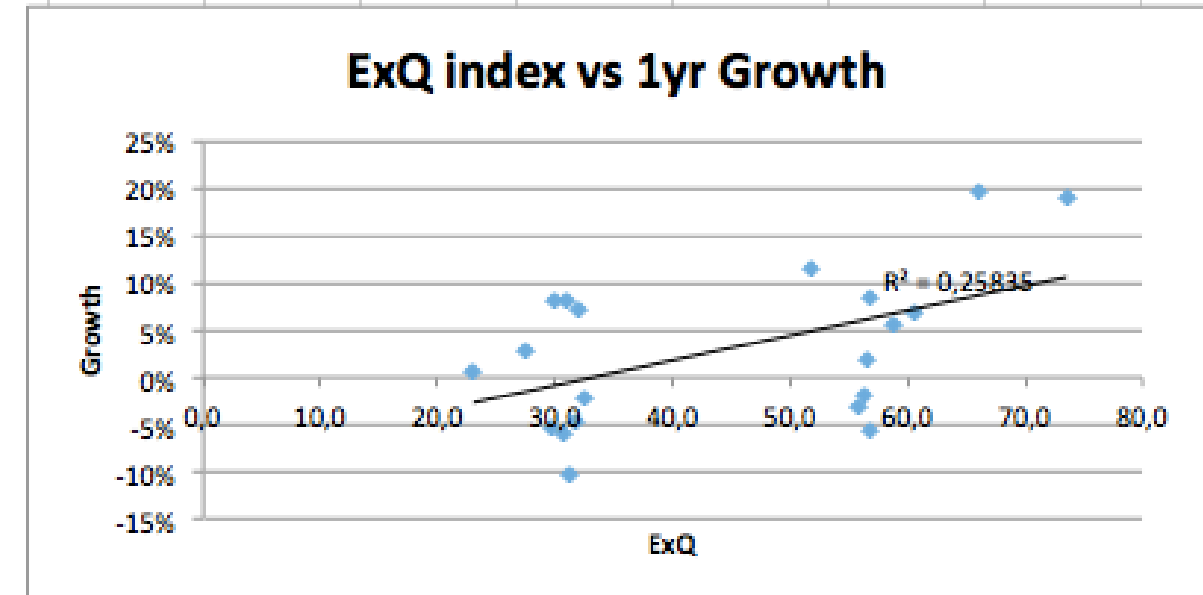
Hult Business School

“ExQ Score correlates to stock performance”

HULT International Business School

1 yr Growth						
	Mean	Median	Min	Max	Top quartil	Bottom quartile
TOP 10	6%	6%	-6%	20%	11%	-1%
BOTTOM 1	0%	-1%	-10%	8%	6%	-5%

3 yr Growth						
	Mean	Median	Min	Max	Top quartil	Bottom quartile
TOP 10	28%	17%	-13%	85%	58%	3%
BOTTOM 1	8%	16%	-51%	36%	26%	-2%



2 year trailing returns

Top 10

F100 Company	ExQ
Google	72.9
Amazon	66.2
Apple	62.6
International Business Machines (IBM)	61.0
Verizon Communications	58.8
General Electric	56.6
Microsoft	55.9
Cisco Systems, Inc.	55.8
The Walt Disney Company	54.8
Oracle Corporation	54.0

+26.7%

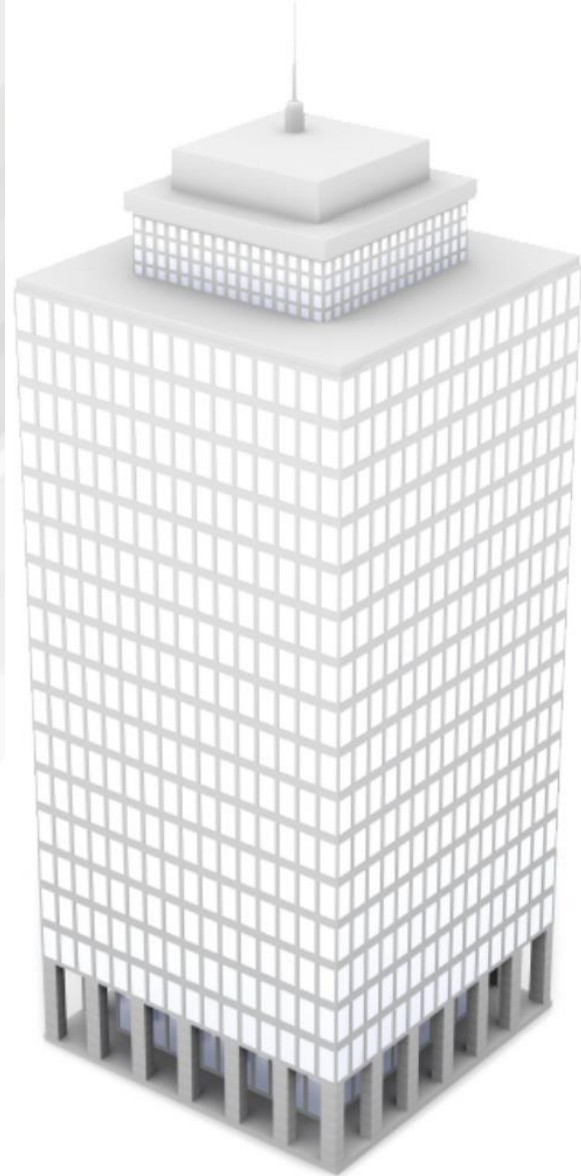
Bottom 10

F100 Company	ExQ
Costco Wholesale	32.0
Philip Morris International Inc.	31.6
Hess Corporation	31.3
HCA Holdings, Inc.	31.0
Phillips 66	30.7
Tesoro Corporation	30.0
Valero Energy	29.8
Plains GP Holdings, L.P.	27.5
Energy Transfer Equity, L.P.	26.5
Enterprise Products Partners L.P.	23.0

-1.7%

S&P +9.9%

Advice to large companies



Transform Leadership

- Education
- Board Management
- Diversity
- Leadership Skills

ExO
Lite

Disrupt [x]

- Edge ExOs
- Black Ops
- Model Google [x]

Partner, Invest,
Acquire ExOs

- Partner with
 - Incubators
 - Accelerators
 - Hackerspaces

Advice to large companies

- Transform leadership (mindset, education)
- Inspire ExOs at edges (via chg mkrs)
- Invest/Partner with adjacent ExOs
- Leverage or expose data
- Hire a 'Black Ops' team
- Set up a Google[X] equivalent

Education from
outside sources

Board
Management

Implement
Diversity

Leadership
Skills

Advice to large companies

- Transform leadership (mindset, education)
- Inspire ExOs at edges (via chg mkrs)
- Invest/Partner with adjacent ExOs
- Leverage or expose data
- Hire a 'Black Ops' team
- Set up a Google[X] equivalent



Success Criteria

> *Become a platform*



Anecdotes..

amazon.com®

Walmart 

 BuildDirect™



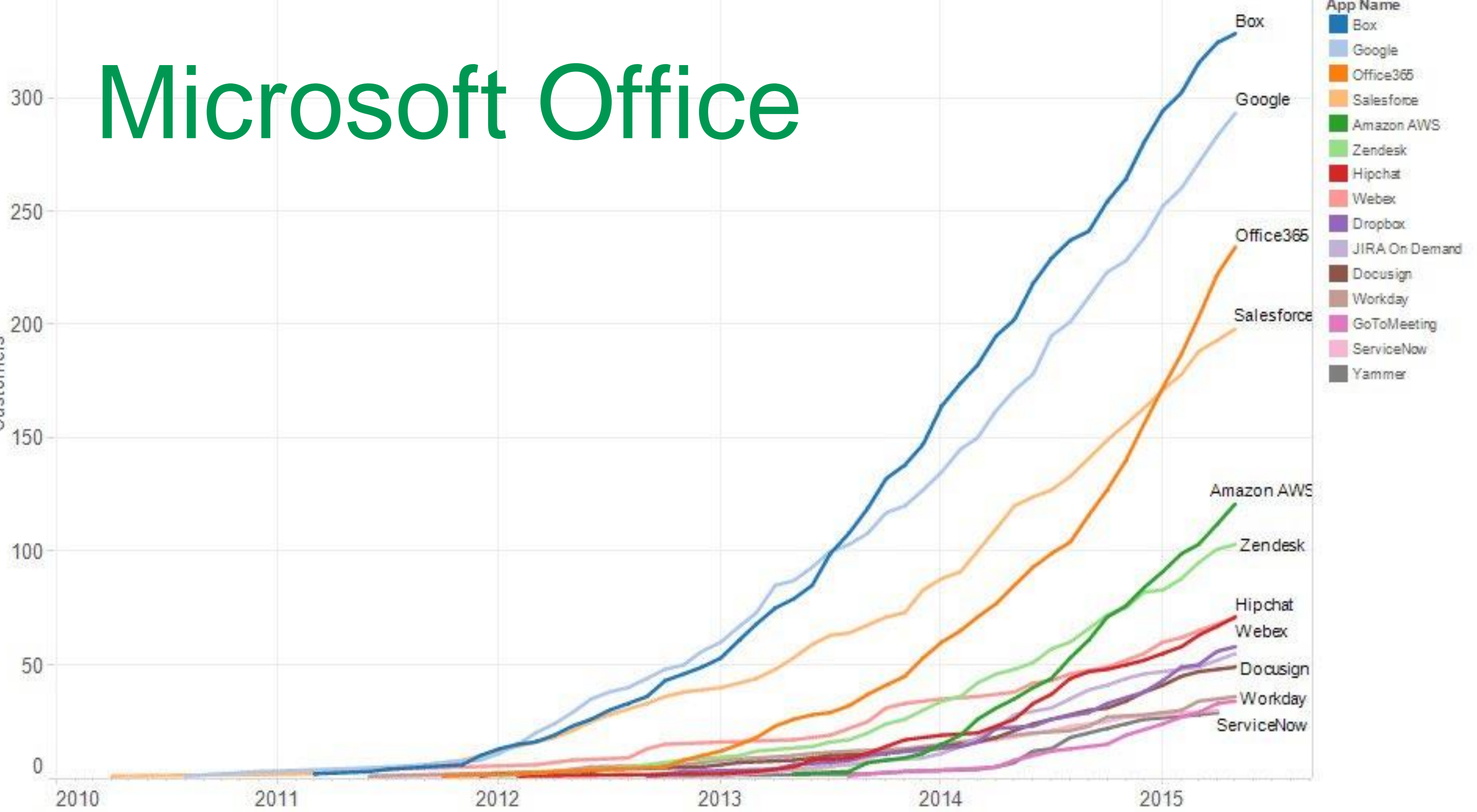
NESPRESSO®



RWE



Microsoft Office



49 Financial - from zero

2016

// 51 Advisors

// \$ 3.3m revenues

// 8 Leaders

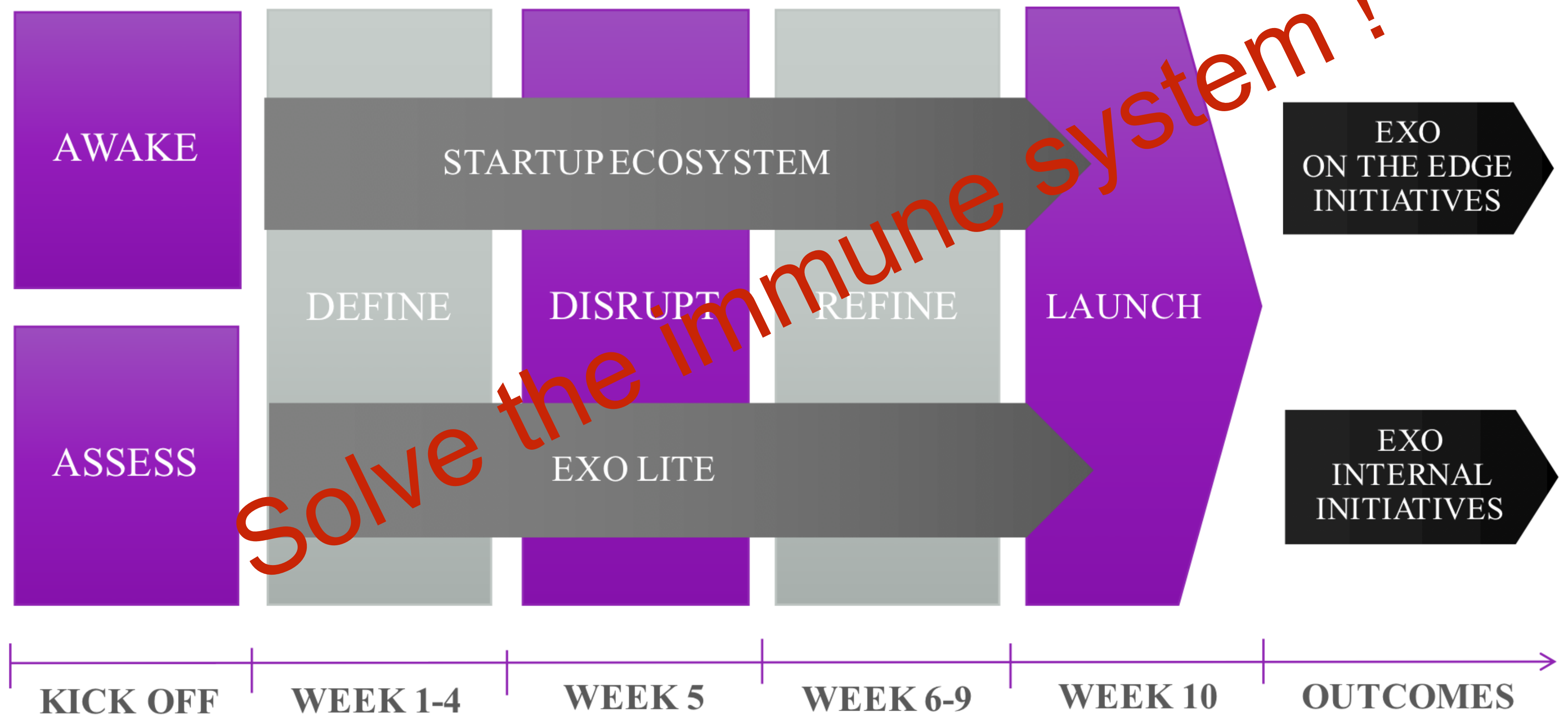
// 2 offices



The GrowRoom



ExO Sprint



Solve the immune system!

Discussion Topics

Jobs

Environment

Healthcare

Industry

Education



Soylent



Try Soylent. It's actually good for you

that has enough of every essential nutrient the human body needs, is incredibly

quite tasty.



hope it will make being healthy easier, cheaper, and accessible to more people

up for the road but will / or Follow Us on Twitter for more. Present Mo

Sign up to be a Tester

Discussion Board How to


Soylent



Soylent Life Fight Hunger Support On KICKSTARTER



Soylent 1.4

↑ ↓ [-] **dalebewan**  36 points 2 days ago
 What are your personal feelings about the many soylent copies/clones/variants out there? Clearly you wouldn't have been so open about the whole thing if you were against them, but I'd like a more nuanced answer if possible.
[permalink](#)

↑ ↓ [-] **Charlton_Question** [S] 101 points 2 days ago
 Soylent is more than a product. It is a movement. I think we're on the same side. I'm not greedy. I j

High Oleic Sunflower Oil,
 Oat Flour, Isomaltulose,
 Mineral Blend [Potassium (as
 Gluconate), Calcium (as
 Gluconate), Choline Bitartrate,
 Vitamin B12 (as Methylcobalamin), Vitamin B6 (as Pyridoxine Hydrochloride), Vitamin B5 (as Panthothenic Sulfate), Vitamin E (as d-Alpha-Tocopheryl Acetate), Vitamin C (as Ascorbic Acid), Vitamin B1 (as Thiamine Hydrochloride), Vitamin B2 (as Riboflavin), Vitamin B3 (as Nicotinamide), Vitamin B4 (as Adenine), Vitamin B7 (as Biotin), Vitamin B9 (as Folic Acid), Vitamin A (as Retinyl Palmitate), Vitamin D3 (as Cholecalciferol), Vitamin K2 (as Menaquinone-7), Chromium (as Chromium Picolinate), Iodine (as Potassium Iodide), Selenium (as Selenium L-Selenomethionine), Manganese (as Manganese Glycinate), Zinc (as Zinc Bisglycinate), Magnesium (as Magnesium Oxide), Calcium (as Calcium Hydroxide Phosphate), Sodium (as Sodium Chloride), Potassium (as Potassium Citrate), Fiber (as Cellulose), Lecithin (as Sunflower Lecithin), Algal Oil,

- Carbohydrates (400 g), in the form of oligosaccharides such as maltodextrin
- Protein (50 g), in a powdered form such as rice protein
- Fat (65 g), in the form of olive oil
- Sodium (2.4 g), from table salt
- Potassium (3.5 g), in the form of potassium gluconate
- Chloride (3.4 g), also from table salt
- Fiber (5 g)
- Calcium (1 g), in the form of calcium carbonate
- Iron (18 mg), from an iron chelate
- Phosphorus (1 g), from monosodium phosphate
- Iodine (150 µg)
- Magnesium (400 mg)
- Zinc (15 mg)
- Selenium (70 µg)
- Copper (2 mg)
- Manganese (2 mg)
- Chromium (120 µg)
- Molybdenum (75 µg)
- Vitamin A (5000 IU)

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- Rib
- Nia
- Fol
- Bic
- Pa
- Extras
- Lye
- On
- Gir
- Gir
- Lutein (500 µg)
- alpha-Carotene (140 µg)
- Vanadium (100 µg)



Soylent 2.0

Total Fat	Less than	65g	80g
Saturated Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Potassium		3,500 mg	3,500 mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g
Calories per gram:			
Fat 9 · Carbohydrate 4 · Protein 4			



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Key Questions

// What disruptions will affect your industry?

// How will related industries be affected?

// How are organizations reacting?

// How do you navigate the turbulence?

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