

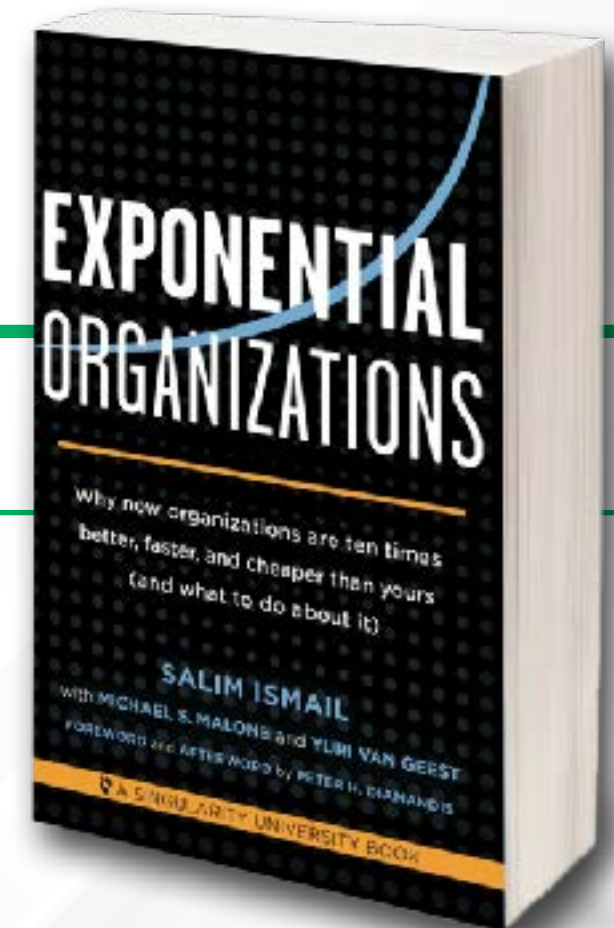
EXPONENTIAL DISRUPTION

Information Layers



New
Breakthroughs

Digitize
Disrupt
Demonetize
Democratize



@salimismail



// Founder & Chairman

OpenExO, ExO Works, Fastrack Institute

// Board member

X Prize Foundation

// General Venture Partner

Rokk3r Fuel ExO

// Founding Executive Director

Singularity University

// Vice President

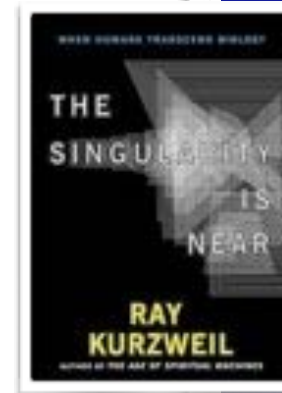
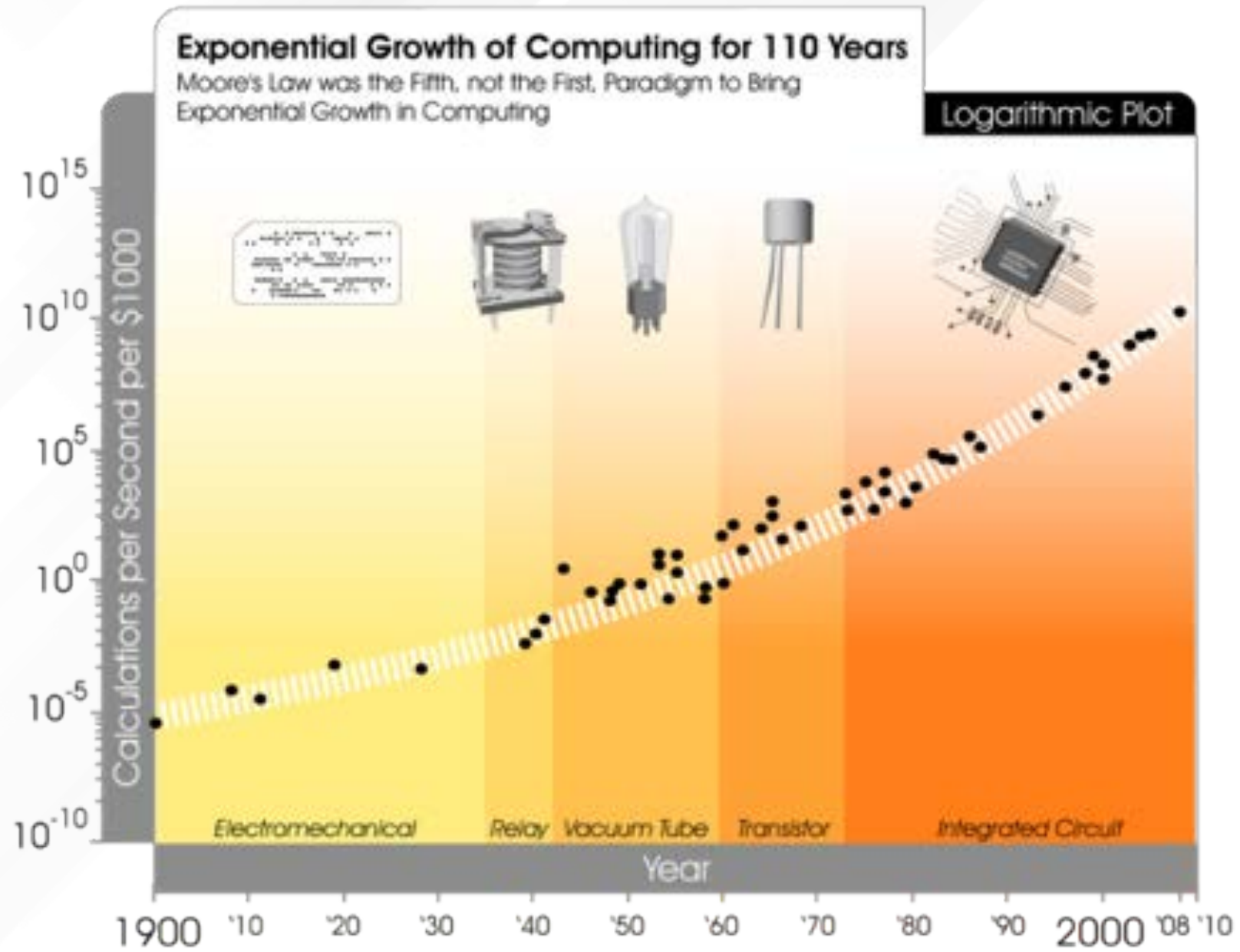
Yahoo







Moore's Law

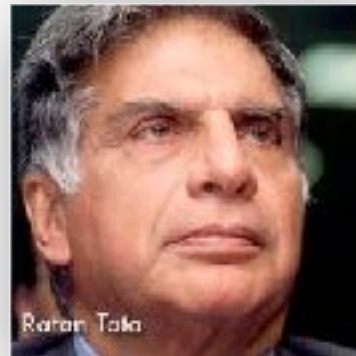


X Prize Board of Trustees & Benefactors



Larry Page

LARRY PAGE,
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Ratan Tata

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Tata Group



Craig Venter

**DR. CRAIG
VENTER,**
Genetic Pioneer



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Astronaut & CEO



JAMES CAMERON
Filmmaker and
explorer



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DEAN KAMEN,
CEO, DEKA
Research



Ray Kurzweil

RAY KURZWEIL
Inventor &
Futurist



Elon Musk

ELON MUSK
CEO, Tesla & SpaceX



SALIM ISMAIL
OpenExO



Wendy Schmidt

WENDY SCHMIDT
Schmidt Family
Fndtn

**WATER
ABUNDANCE**

XPRIZE®

POWERED BY



**Australia
Aid**



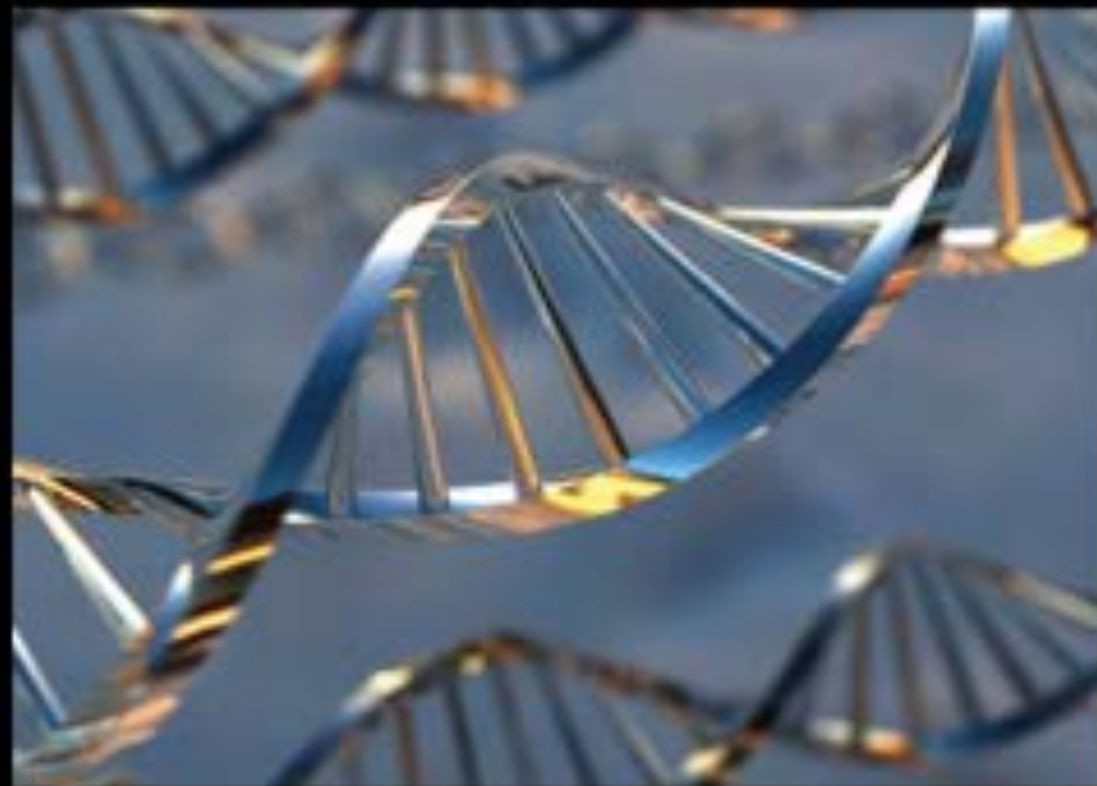
SKYSOURCE
SKYWATER
ALLIANCE

ENERGIZED
BY
SPL

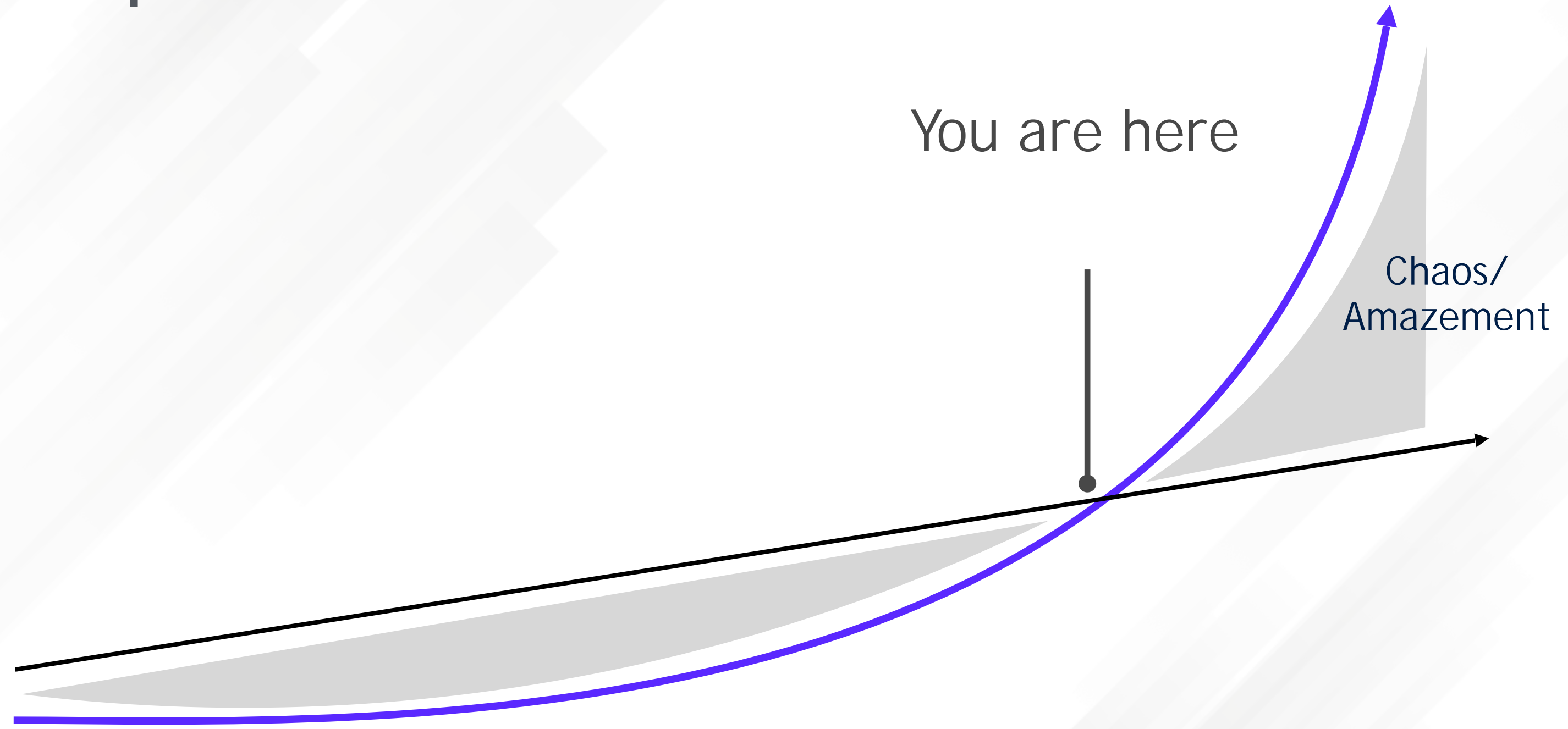


Accelerating Technologies

AI
Robotics
Biotech
Nanotech
Medicine
Neuroscience
Energy
Computing



Deception of linear vs exponential



Industries by Information Enablement



DISRUPTION



Information-Only Products

**Physical Products with
Information-based Revenue**

**Physical Products That
Are Information-Enabled**

Information Layers



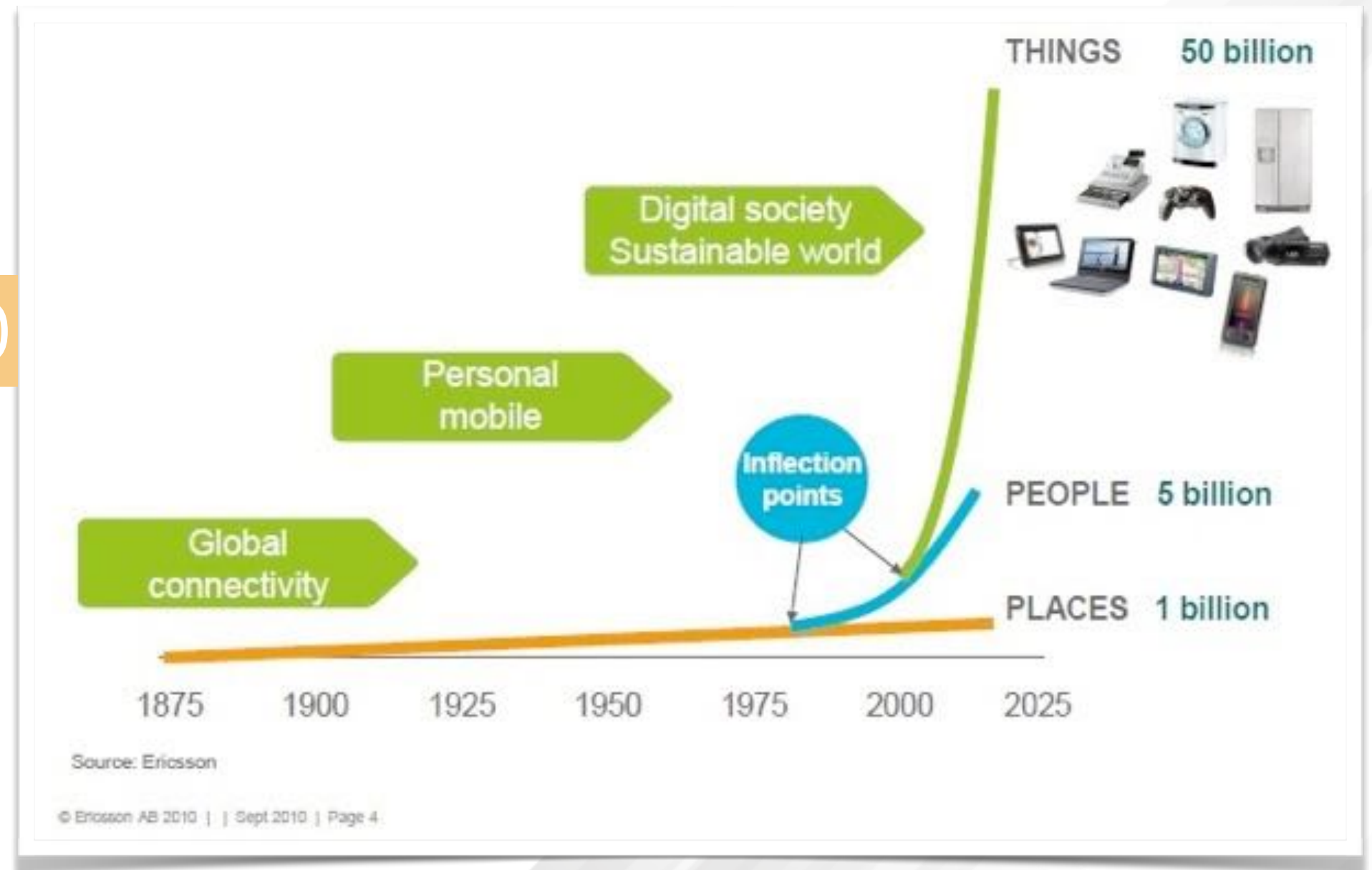
Digitize
Disrupt
Demonetize
Democratize

New
Breakthroughs

Internet of Things

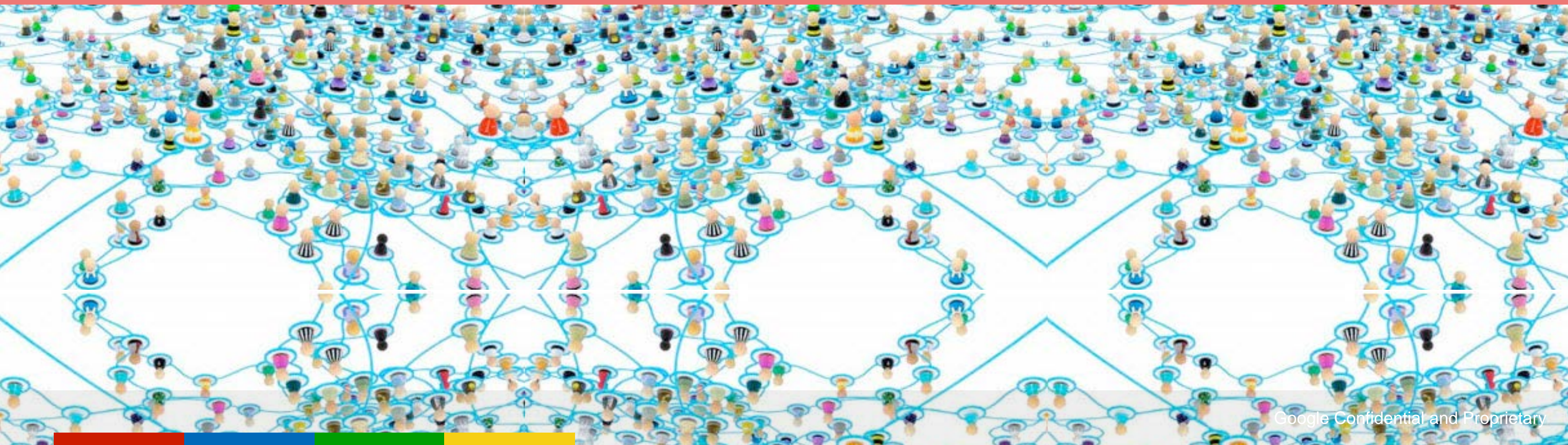
50B devices by 2020

50B devices by 2020



M2M communication will be
> 50%
of data traffic by 2030

1 trillion
connected devices
using low bandwidth



Beyond Verbal

- 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

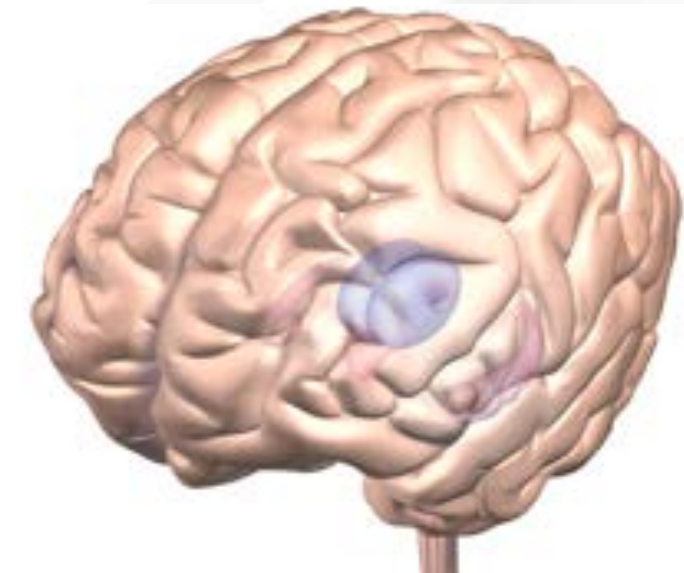
Your mood in 20 seconds. Just press a button and talk.

Intrigued by emotions?

[Moodies Emotions Analytics Support](#)

What's New in Version 1.4

Improved user experience
Bug fixes



My Mood/Attitude



Duration
00 : 13



belief

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



Information Layers



Digitize
Disrupt
Demonetize
Democratize

New
Breakthroughs

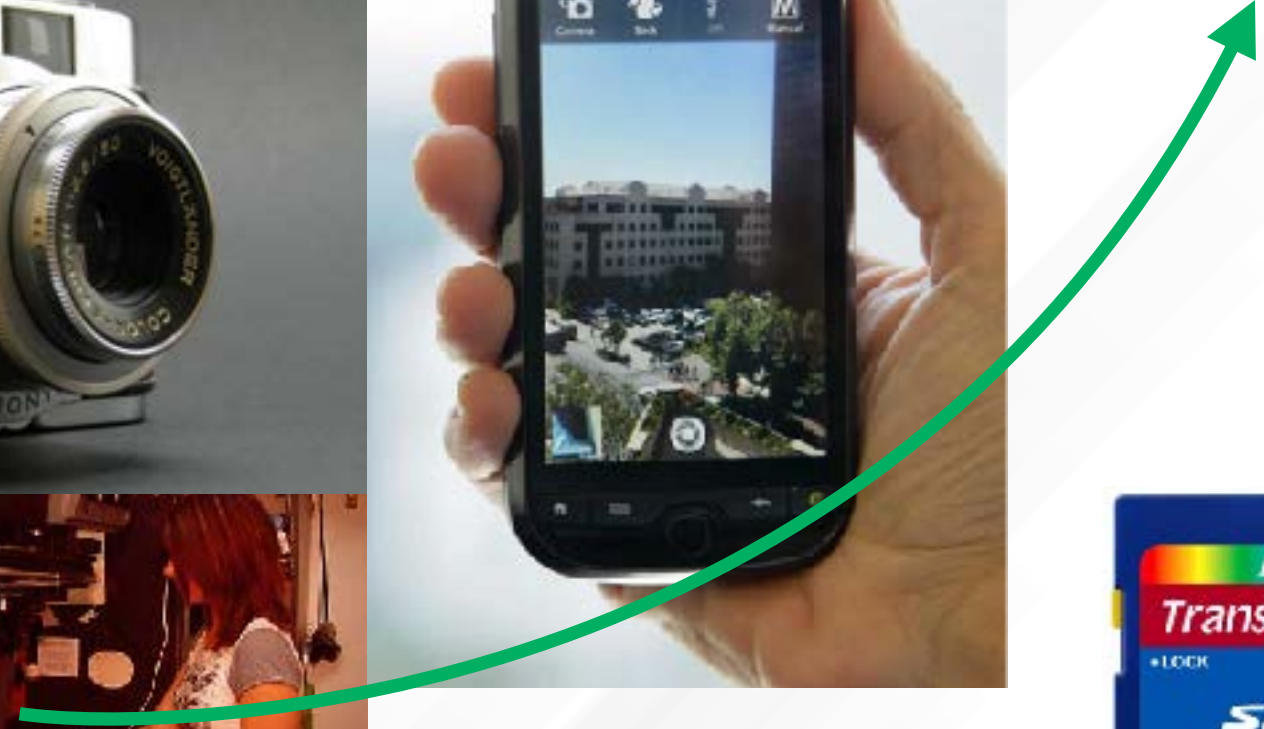
Why information » exponential

// marginal cost >> zero

// domain explodes

// problem space shifts

>scarcity to abundance



Accelerating Technologies

AI
Robotics
Biotech
Nanotech
Medicine
Neuroscience
Energy
Computing



Cost of Light

Our World
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.

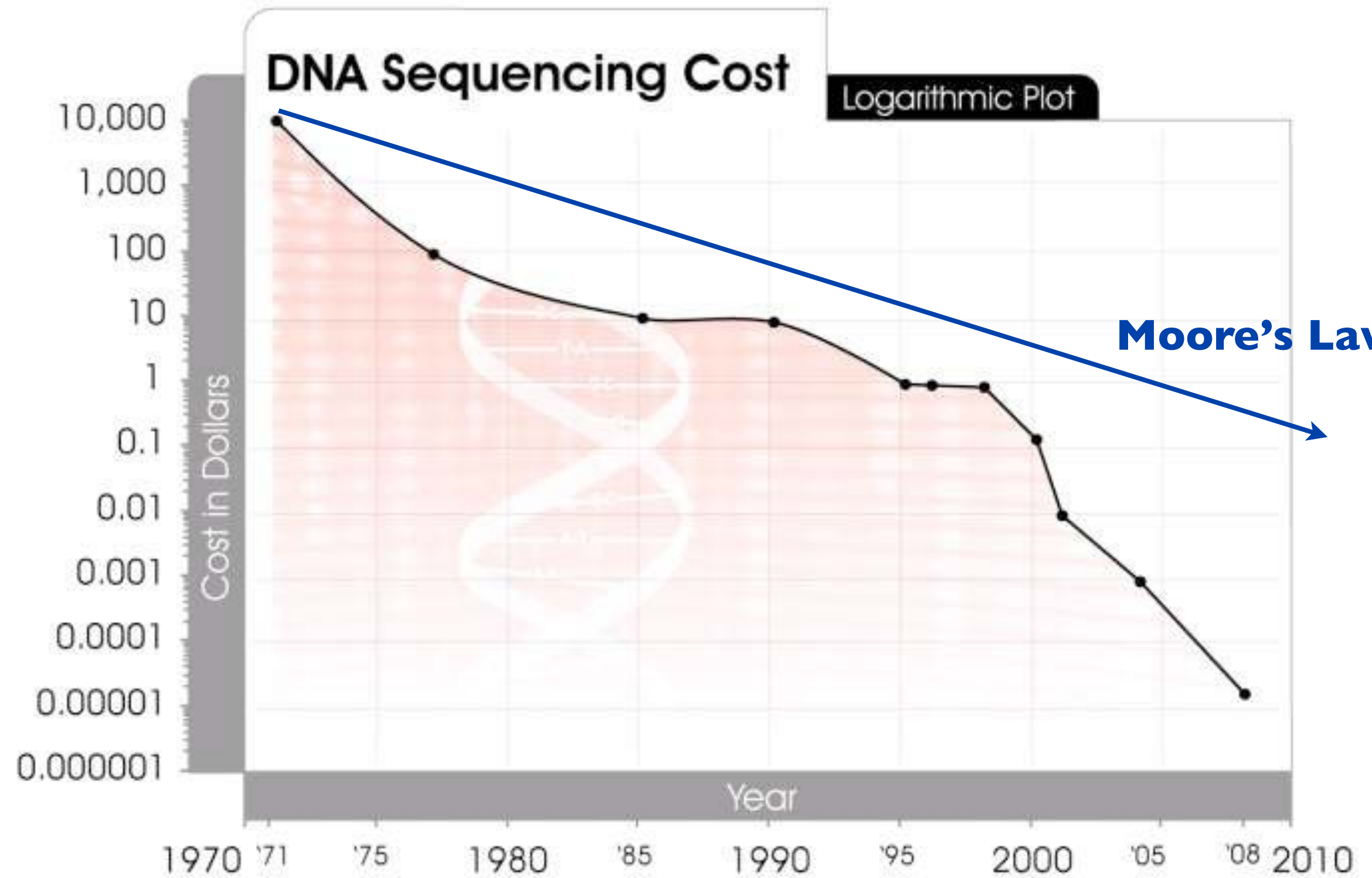


Data source: Fouquier and Pearson (2012) – The long run demand for lighting: elasticities and rebound effects in different phases of economic development. *Economics of Energy and Environmental Policy*, v 1, pp 83-100

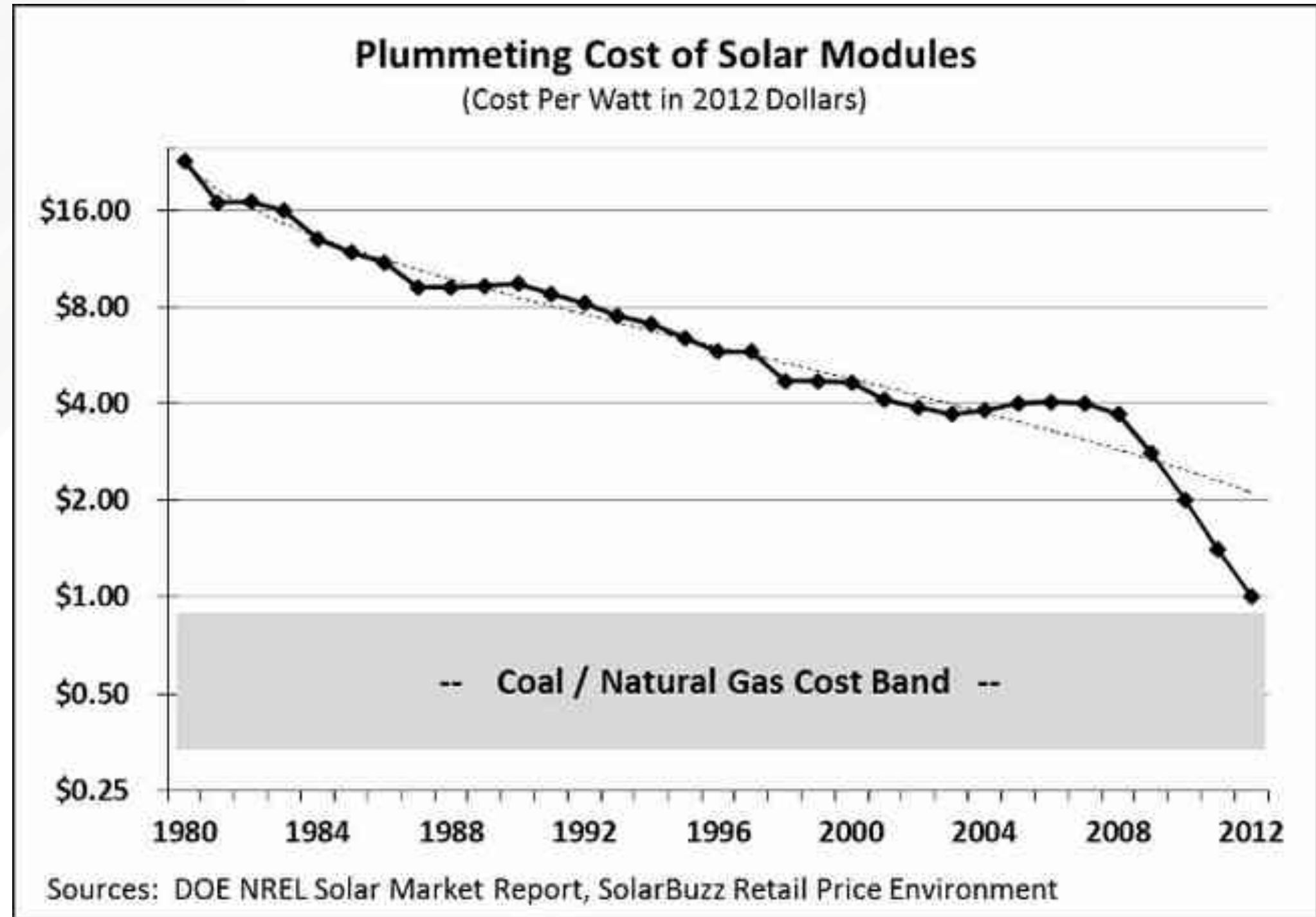
The interactive data visualisation is available at [OurWorldinData.org](https://ourworldindata.org). There you find the raw data and more visualisations on this topic.

Licensed under CC-BY-NC by the author Max Roser.

Reading / Sequencing DNA



Cost of Solar Modules



AI & Robotics



Dan Barry, MD

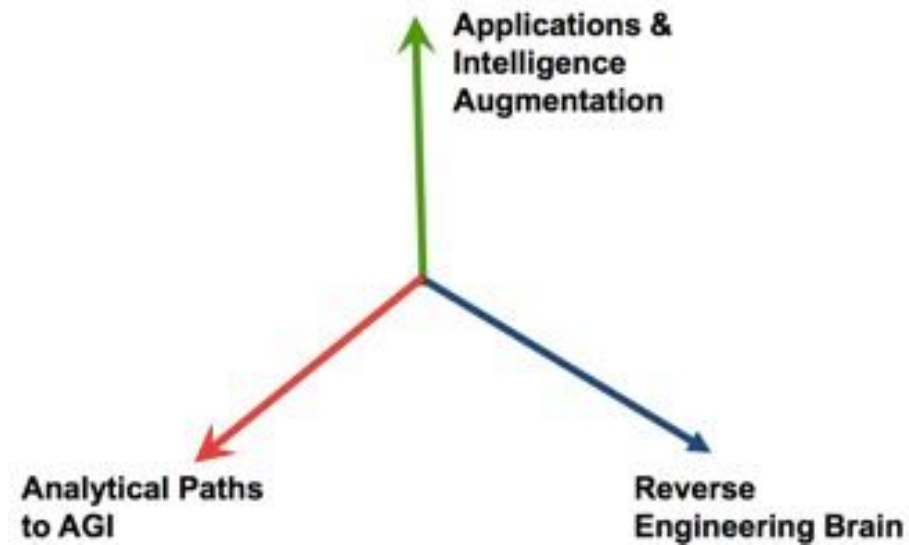
(Space, AI, Robotics)
NASA Astronaut



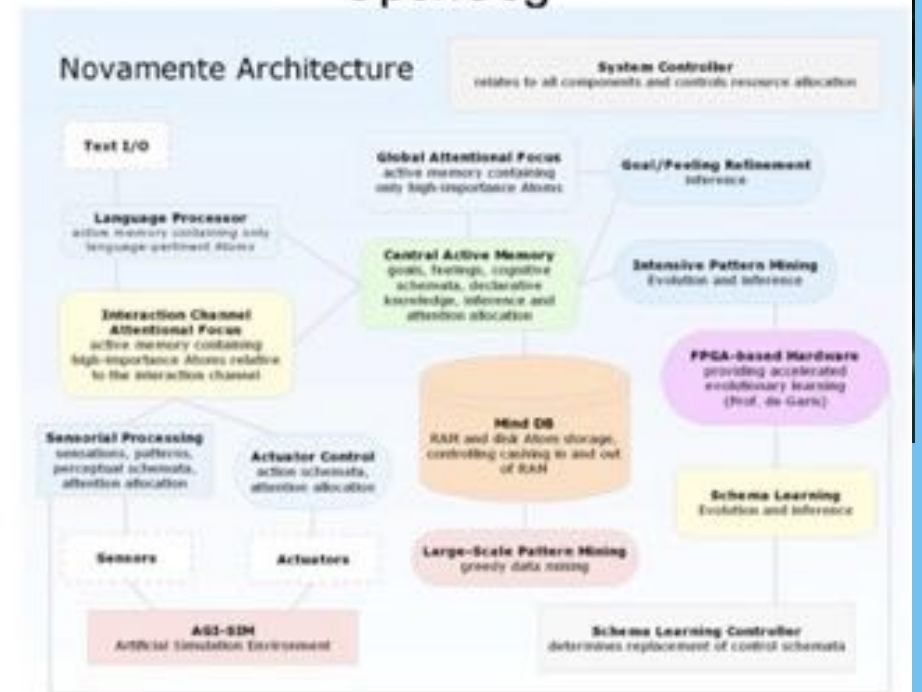
Neil Jacobstein

(AI, Robotics)
AI CEO, Visiting
Scholar
Stanford

AI Development Vectors



OpenCog



http://opencog.org/wiki/The_Open_Cognition_Project

Last upgrade - 50k years

Ancient architecture

Torrents of data

Hardwired biases

Limited bandwidth

Technological amplification

Change accelerating

Global problems

Navigation requirements increasing



Biases & heuristics in human cognition

Anchoring bias – fixating on 1st impressions

Status quo bias – failure to consider alternatives to what is

Sunk-cost bias – protecting earlier bad choices

Confirming-evidence bias – selective data collection

Framing bias – posing the wrong question

Overconfidence bias – failure to challenge assumptions

Saliency bias – focus on dramatic events vs whole picture

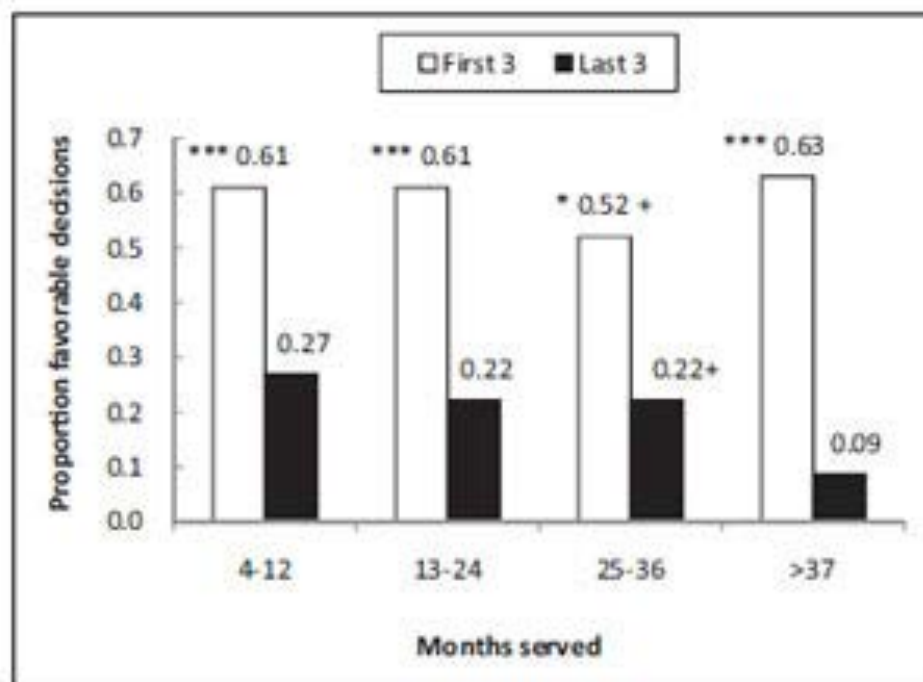
Base-rate bias – neglecting relevant baseline information

Pattern invention bias – imposing patterns on events

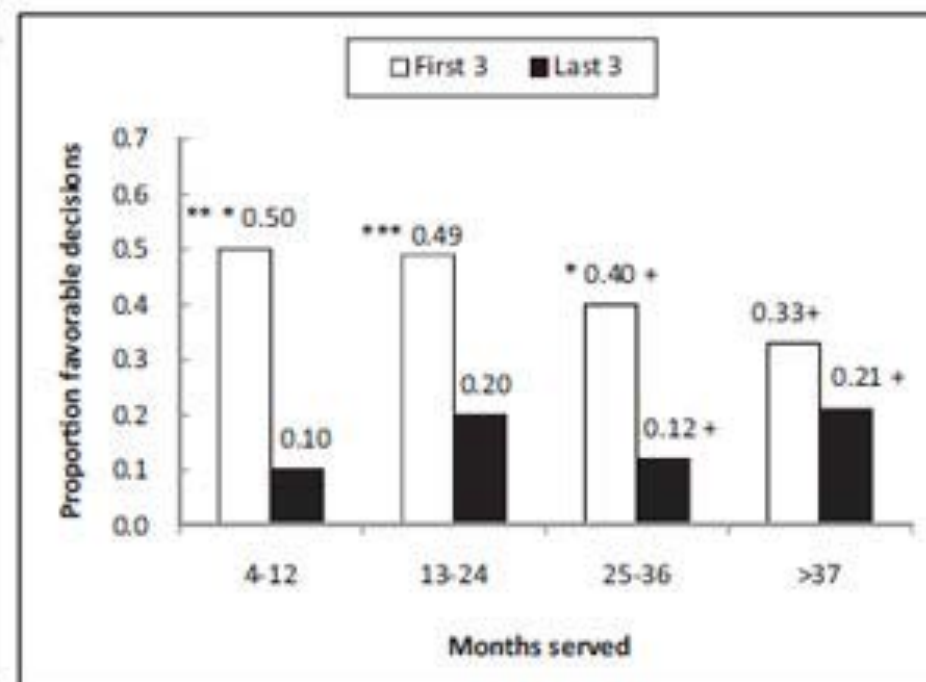
Prudence bias – slanting probabilities & estimates



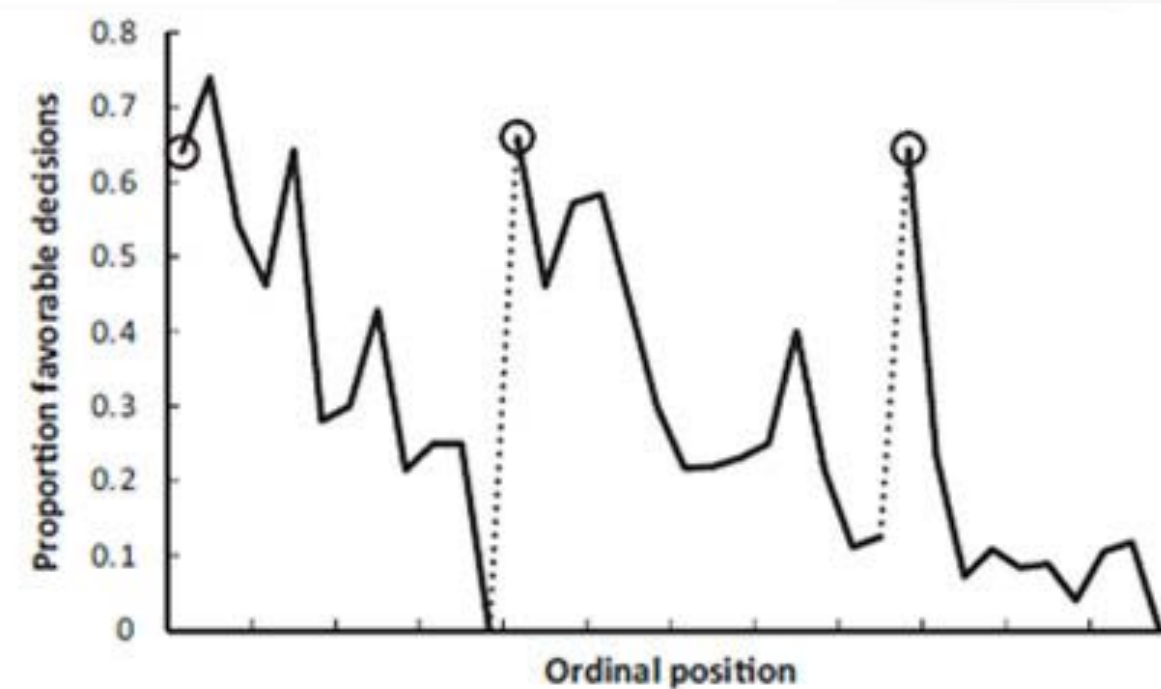
Shai Danziger - 1,112 parole hearings



No previous incarcerations



Some previous incarcerations



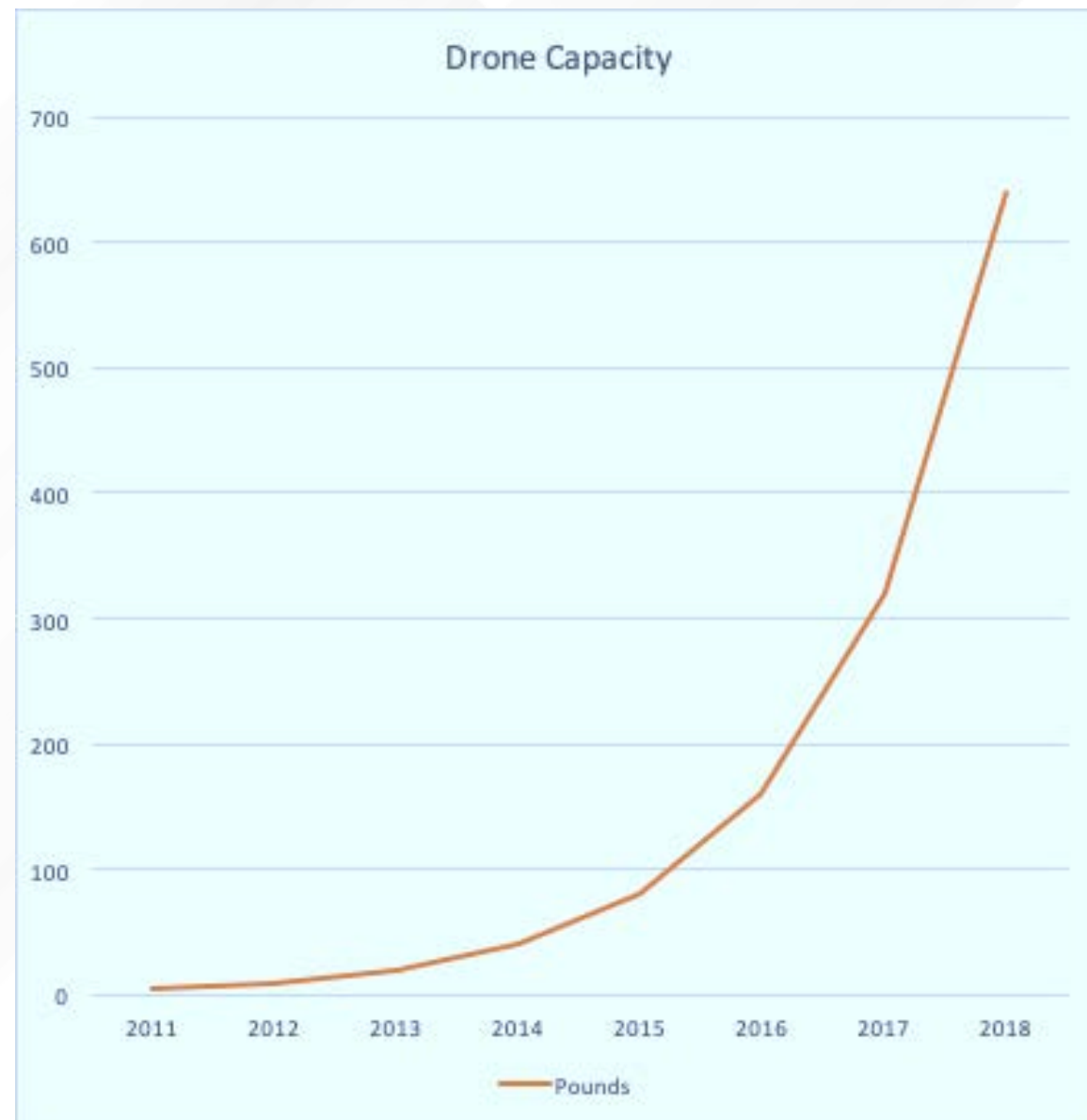


Was \$ 700



Today \$ 20

Drones Since 2012



ALEX DAVIES TRANSPORTATION 01.14.18 07:00 AM

BOEING'S EXPERIMENTAL CARGO DRONE IS A HEAVY LIFTER



A team of 50 engineers spent three months building what looks like a car-sized Erector Set, fitted with eight spinning blades (each six feet from tip to tip), and weighing in at an auspicious

00:20.821



Vertical Farming (Aerofarms)

80k sq feet, feeds 80k ppl

(not cheap... YET)

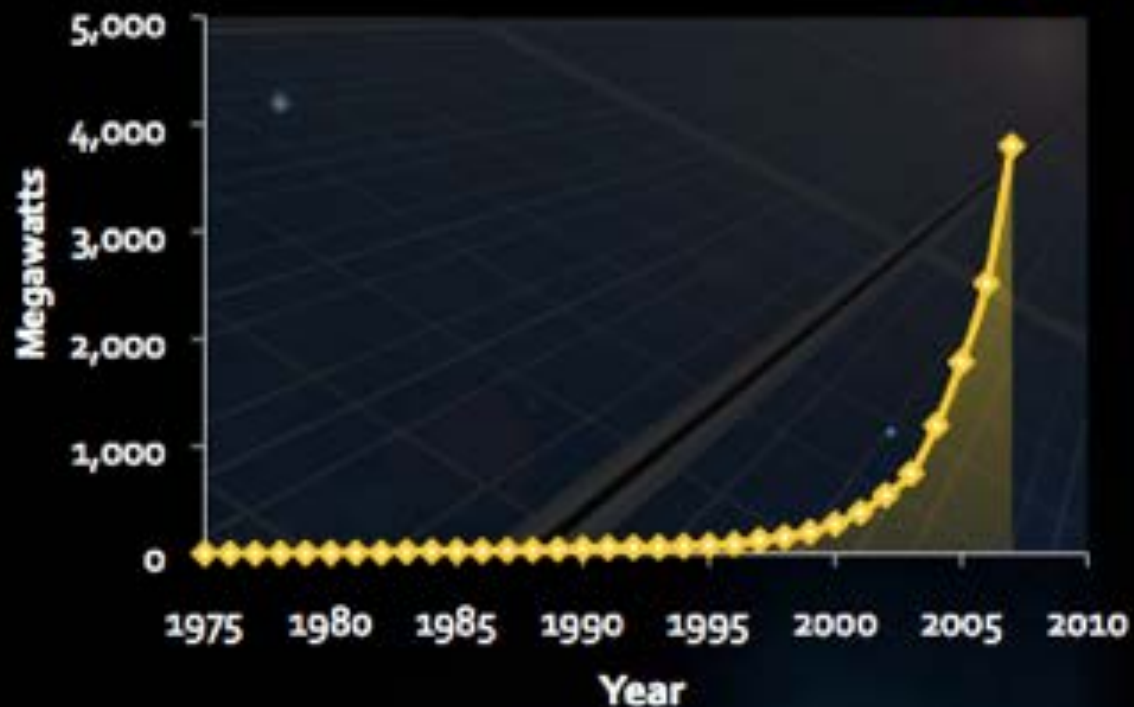




Solar

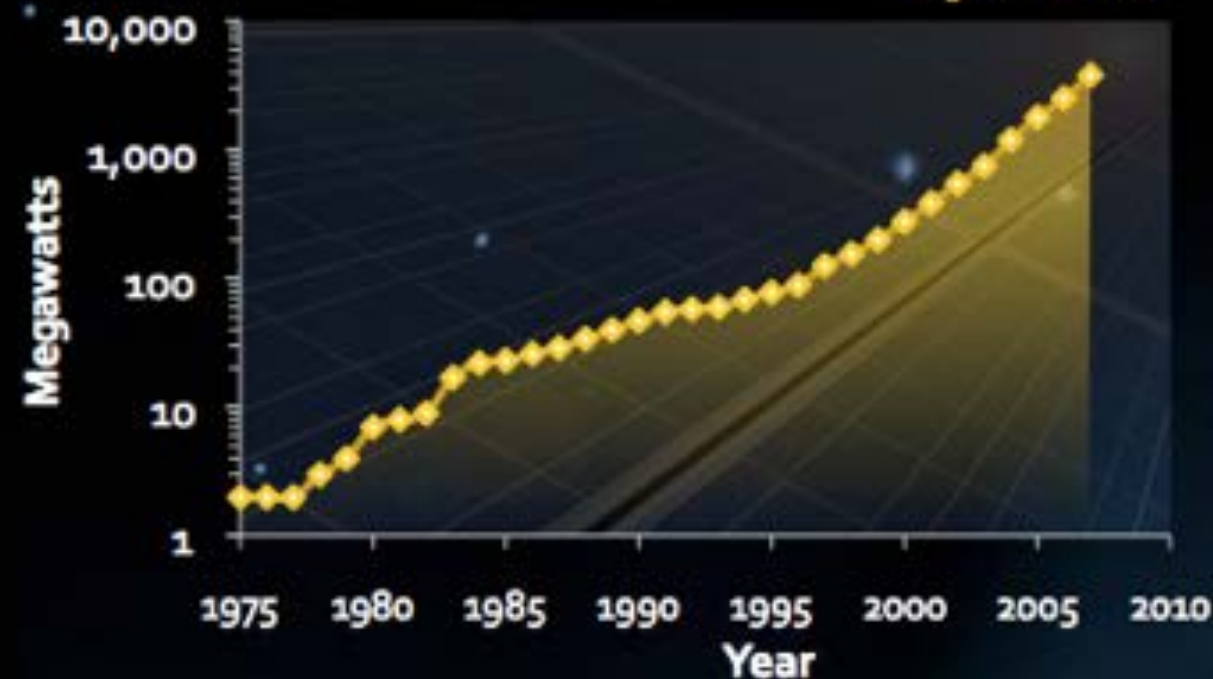
World Annual Photovoltaic Production

Linear Plot



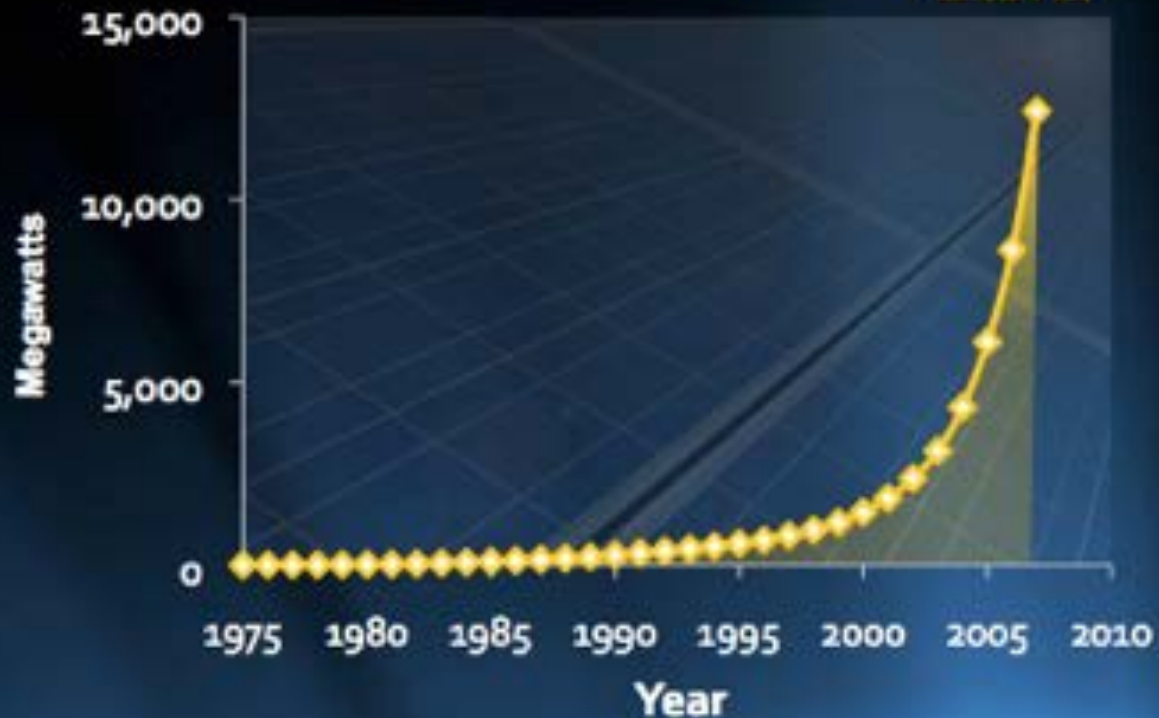
World Annual Photovoltaic Production

Logarithmic Plot



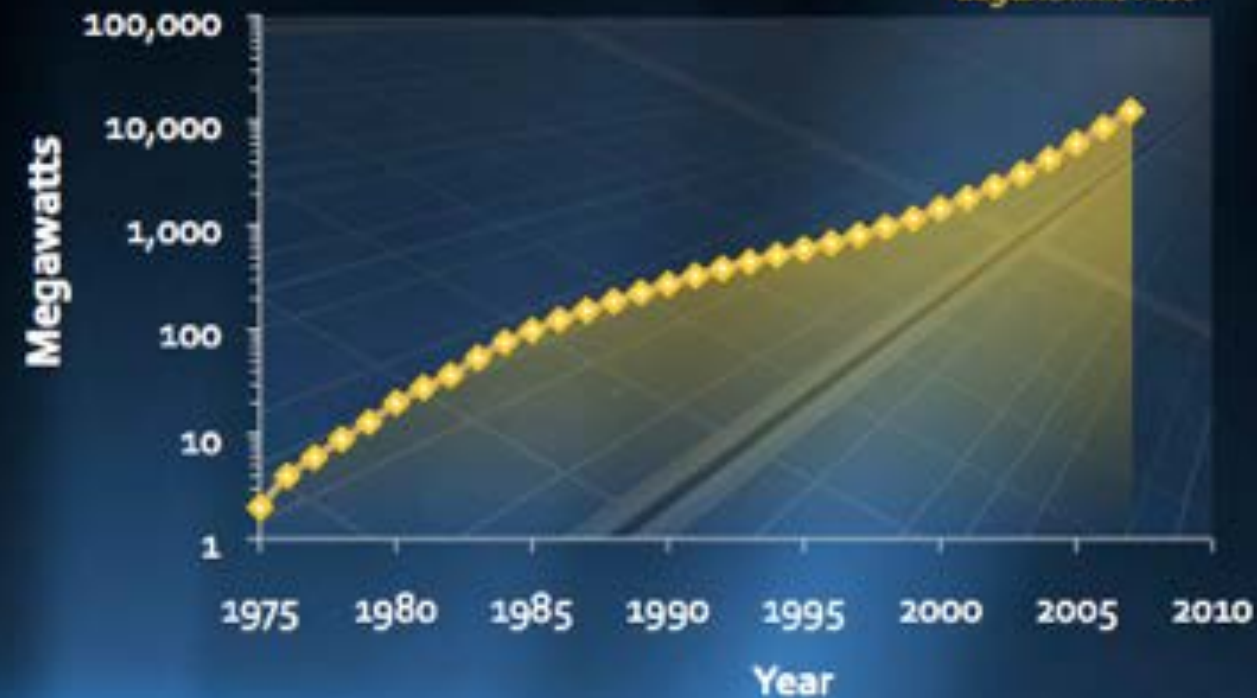
World Cumulative Photovoltaic Production

Linear Plot



World Cumulative Photovoltaic Production

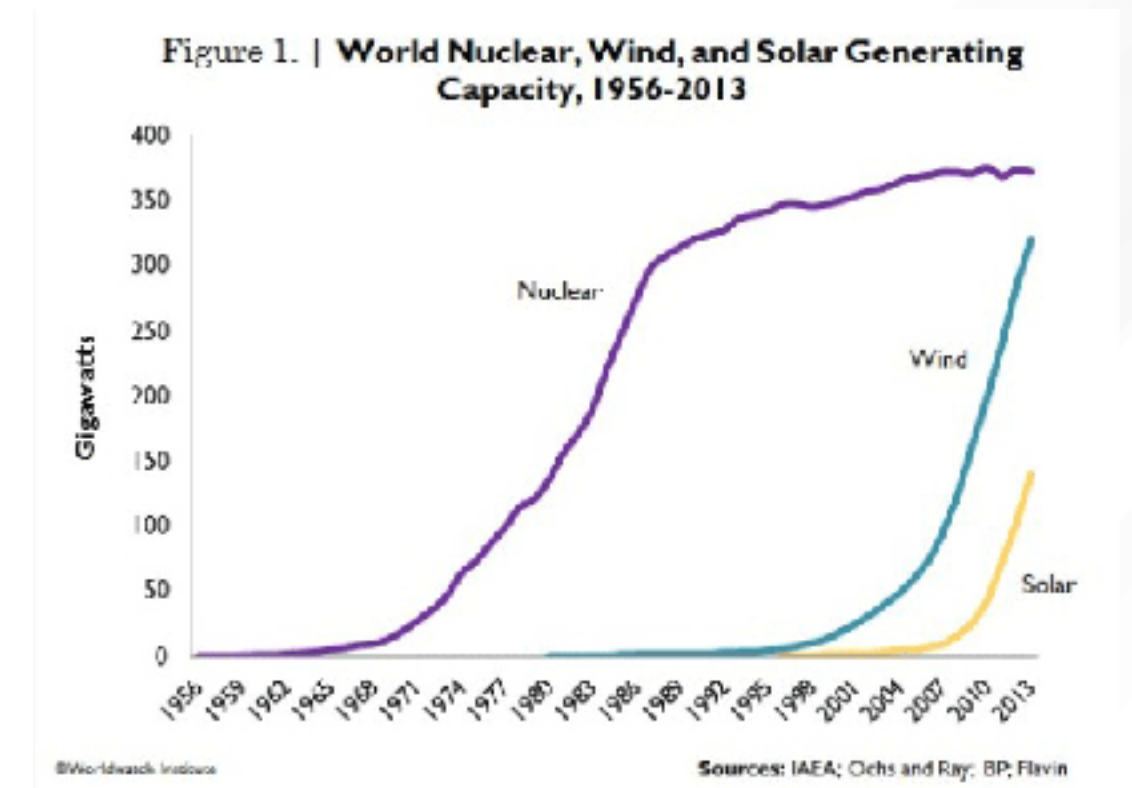
Logarithmic Plot



Relative cost of solar...

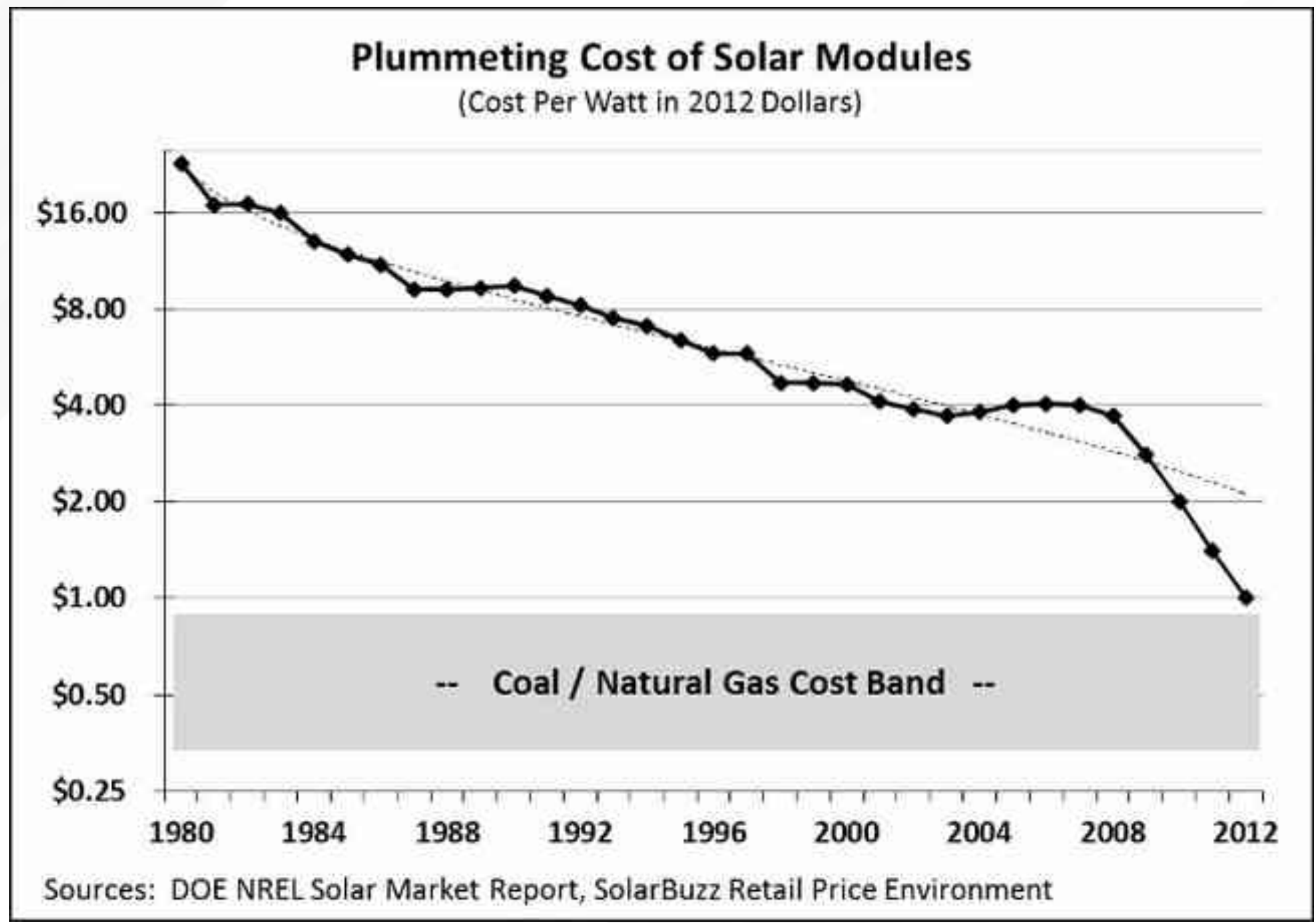
	1970-2013	1970-2020
Petroleum	5355x	16065x
Nuclear	1540x	4620x
Natural Gas	2275x	6825x
Coal	900x	2700x

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



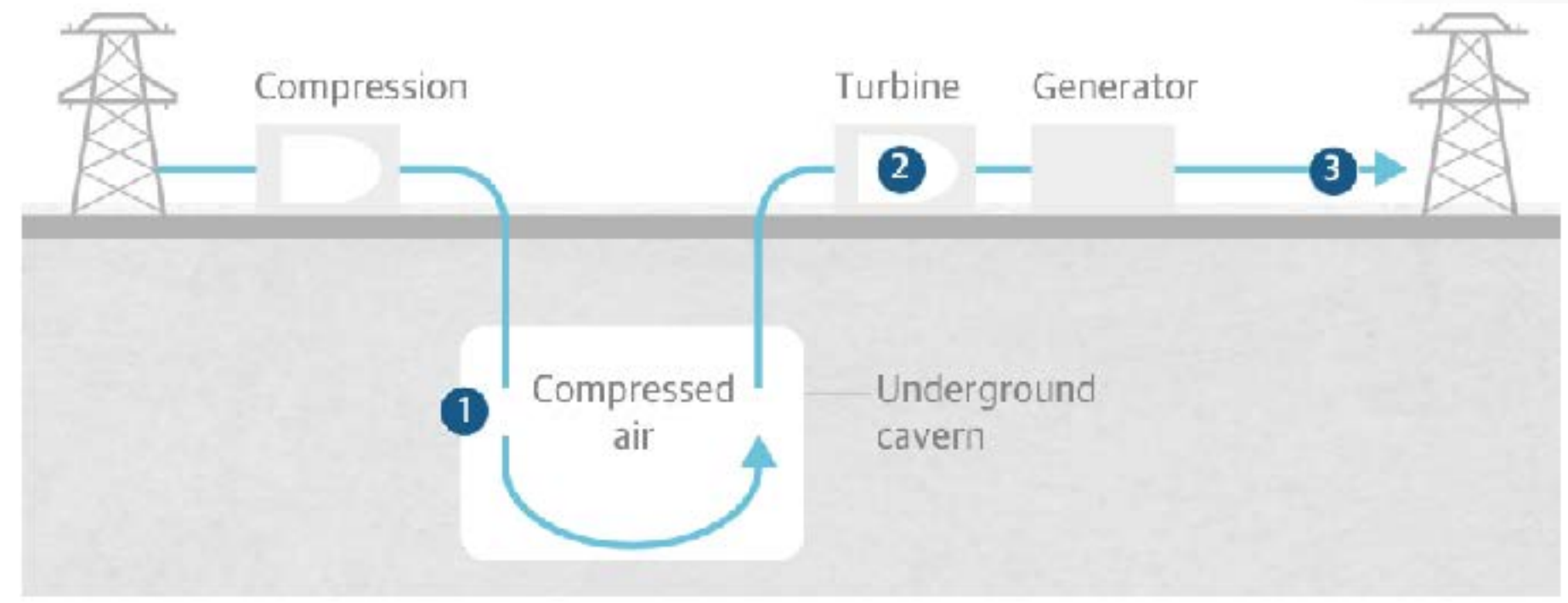
MINISTRY OF INNOVATION —

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.

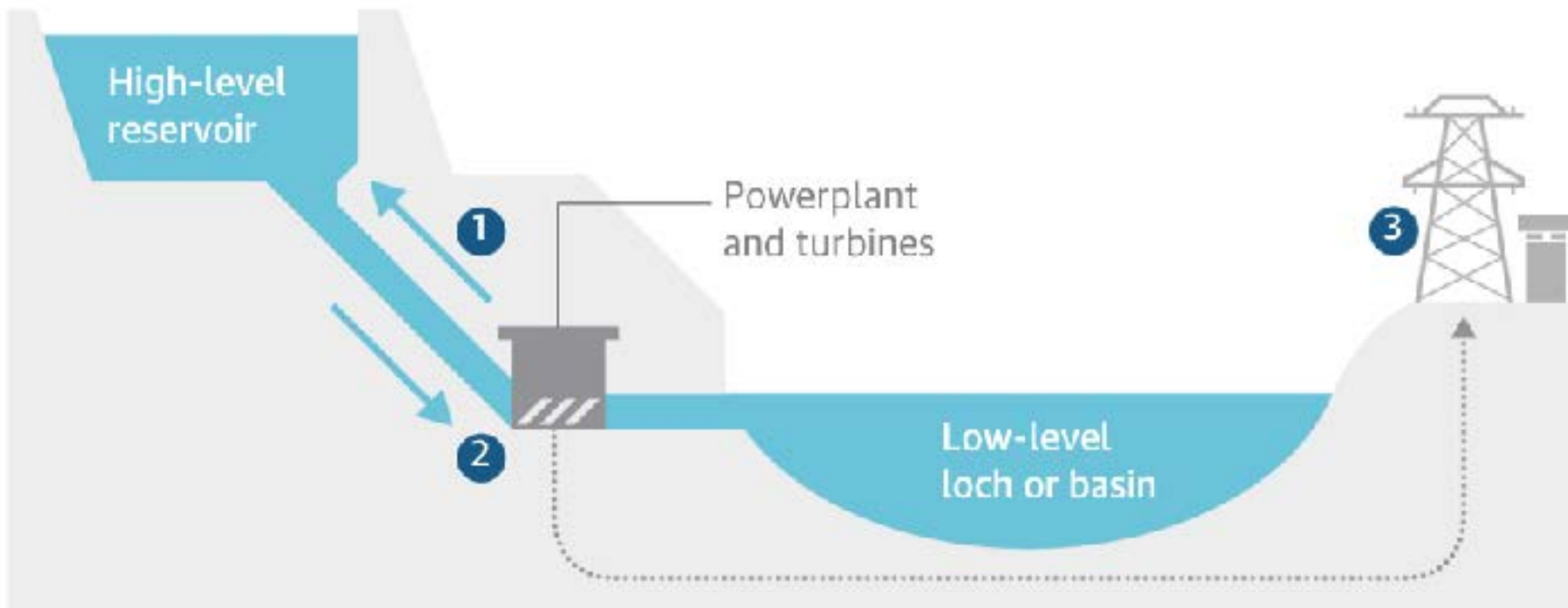
MEGAN GEUSS - 4/10/2017, 9:35 PM

Breakthroughs in Storage



Guardian graphic

Source: Renewable Energy Association



Guardian graphic

Source: Renewable Energy Association

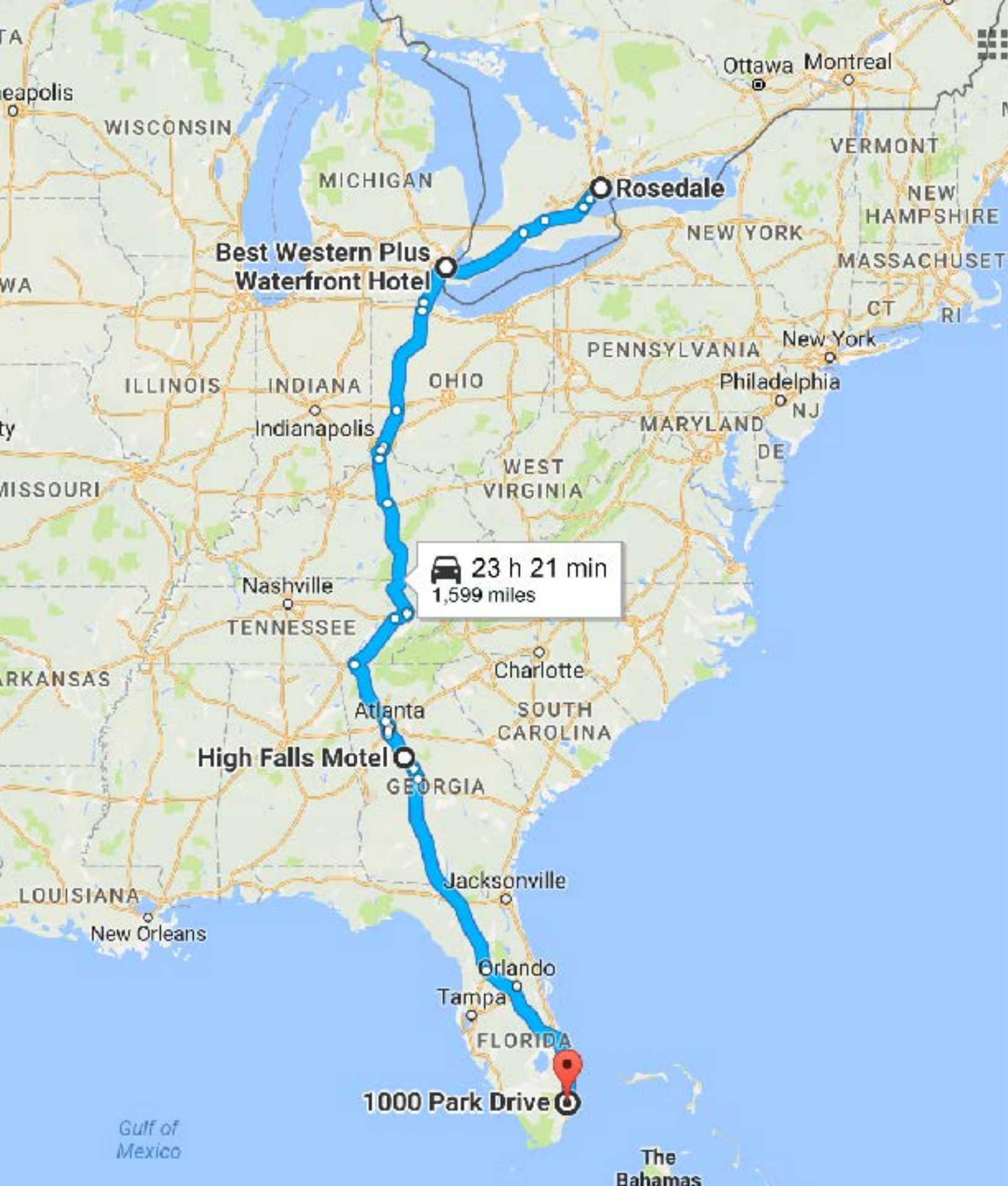
Home or Utility



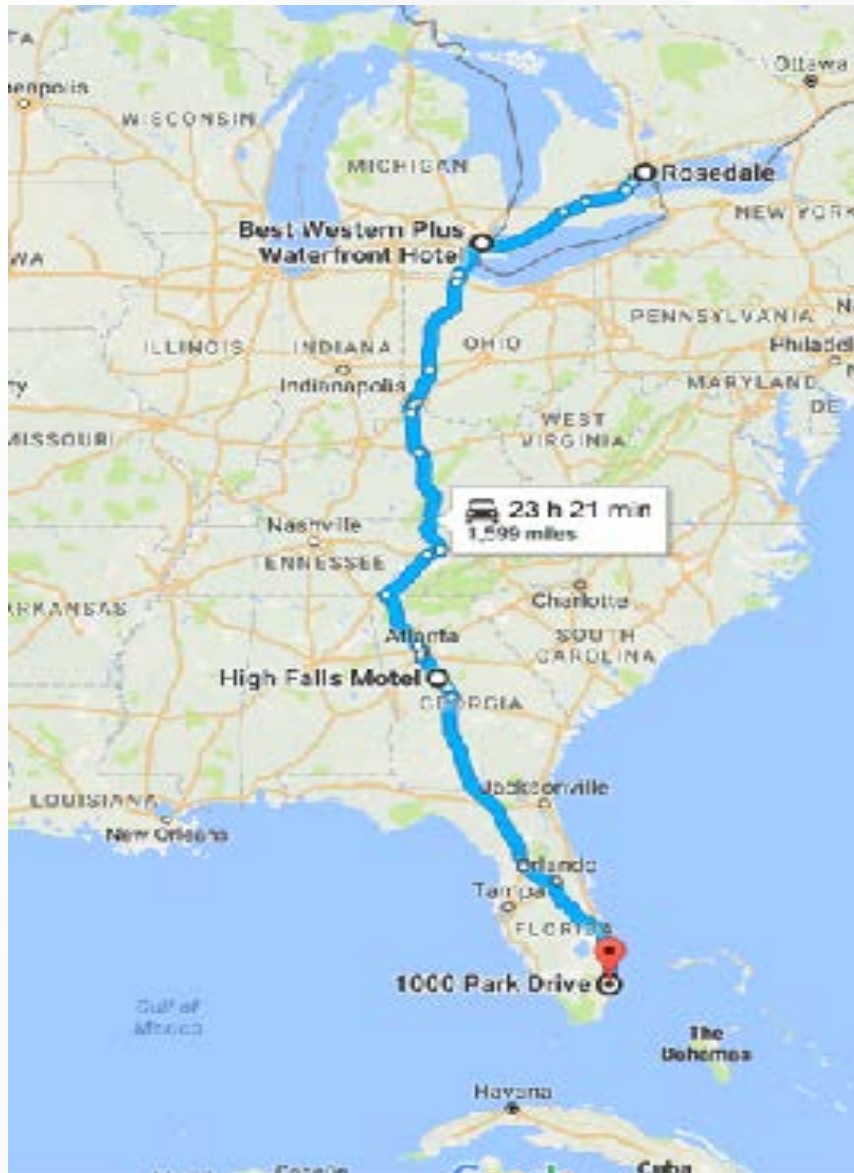
Road Trip

Solar + sensors + robotics + mobile + batteries

34 hrs, 11 stops, ~35% self driving

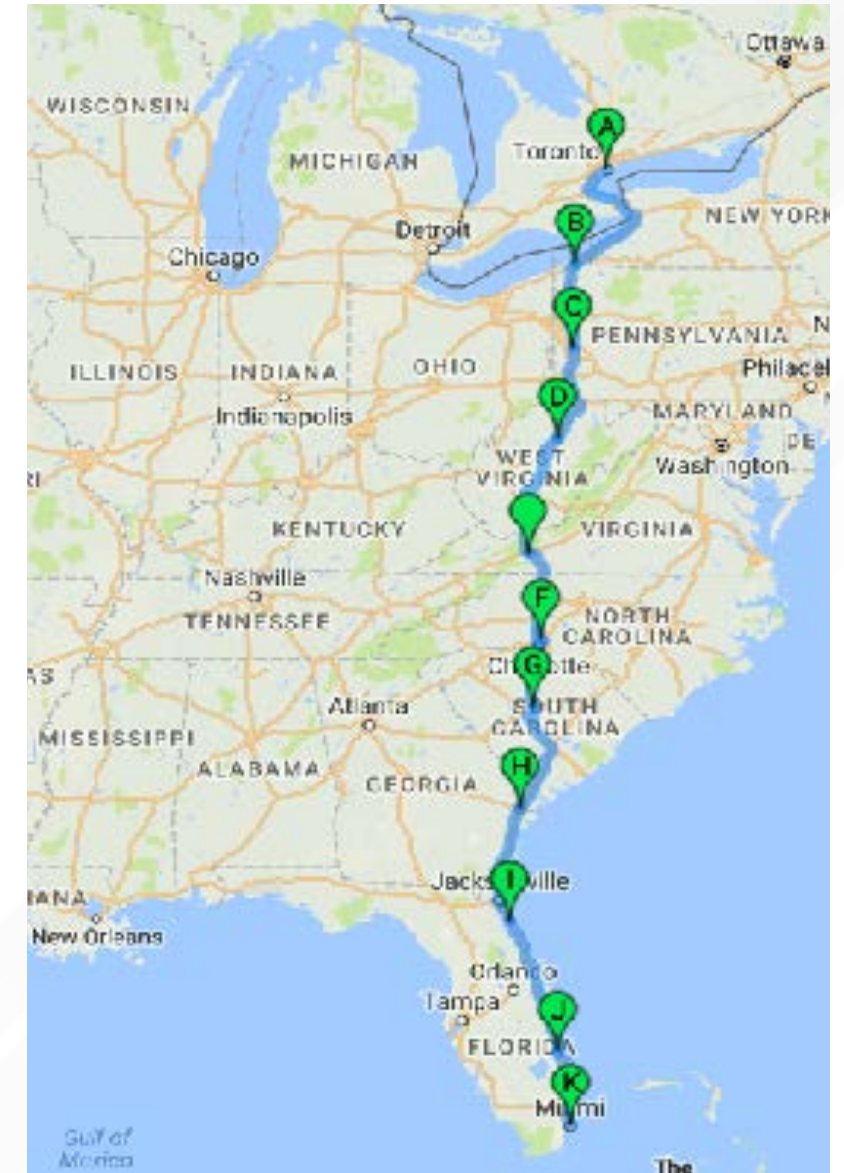


Tesla Trips



Jul 2016

	Jul 2016	Dec 2017
Total Time	36 hrs	29 hrs
Driving time	23 hrs	21 hrs
Num Stops	11	9
% Self Driving	35%	80%



Dec 2017

Information Layers

Accelerating Technologies

AI
Robotics
Biotech
Nanotech
Medicine
Neuroscience
Energy
Computing

Singularity University

Digitize
Disrupt
Demonetize
Democratize

New
Breakthroughs

INSTITUTIONAL DISRUPTION

- Marriage
- Democracy
- Capitalism
- Education
- Religions



Stock Markets

Criminal Justice

Healthcare

UN

WorldBank

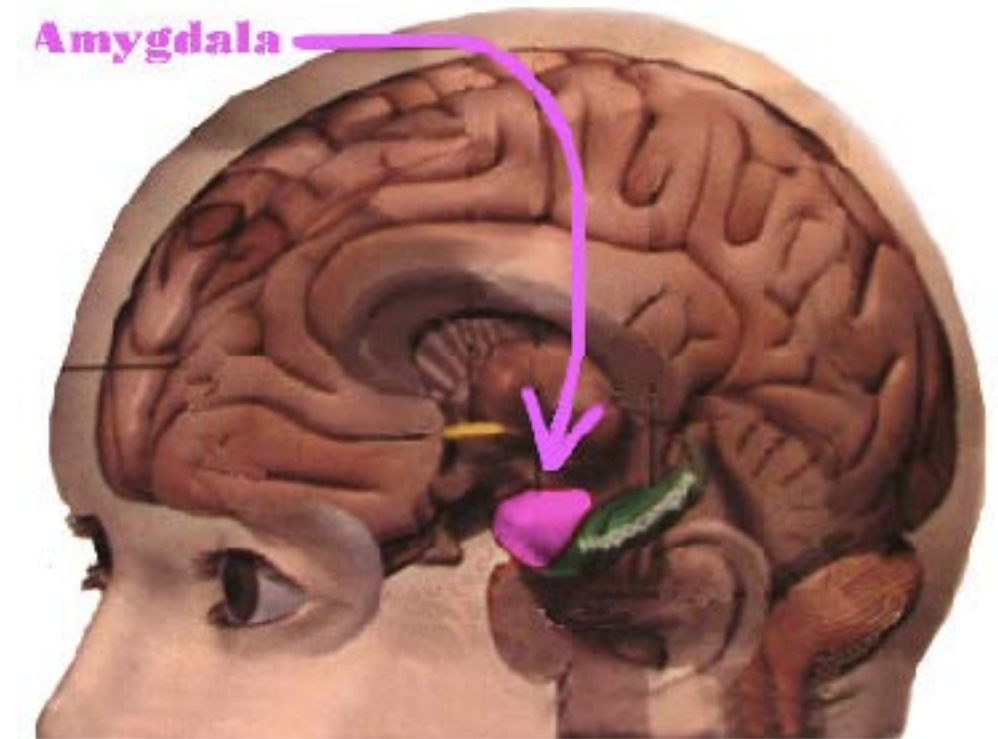
WHO

Voting Systems

Monetary System

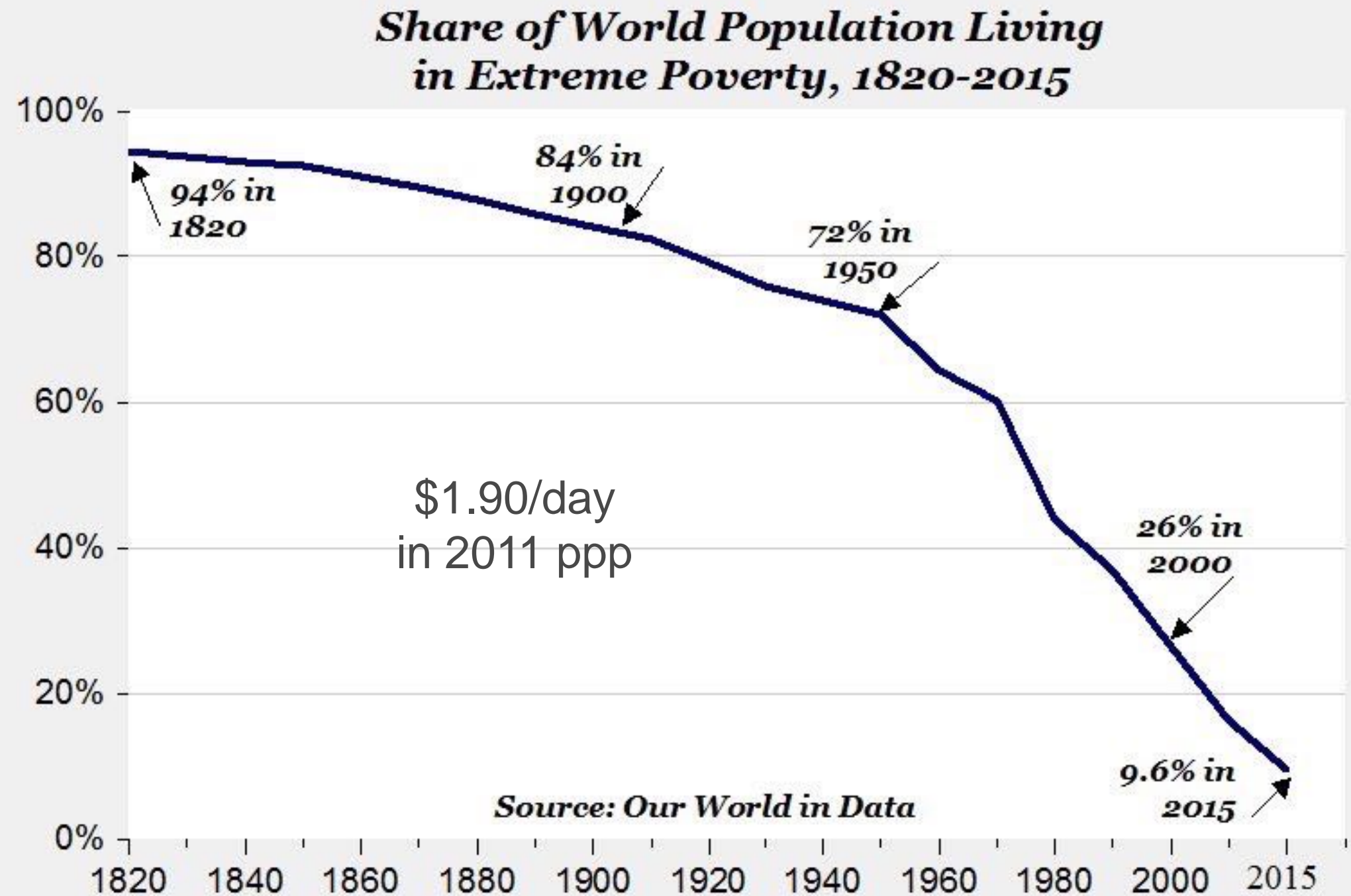
1. Anything that is in the world when you're born is normal and ordinary and is just a natural part of the way the world works.
2. Anything that's invented between when you're fifteen and thirty-five is new and exciting and revolutionary and you can probably get a career in it.
3. Anything invented after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

Douglas Adams



Population Living in Extreme Poverty

1820: 94%
2017: 9.4%

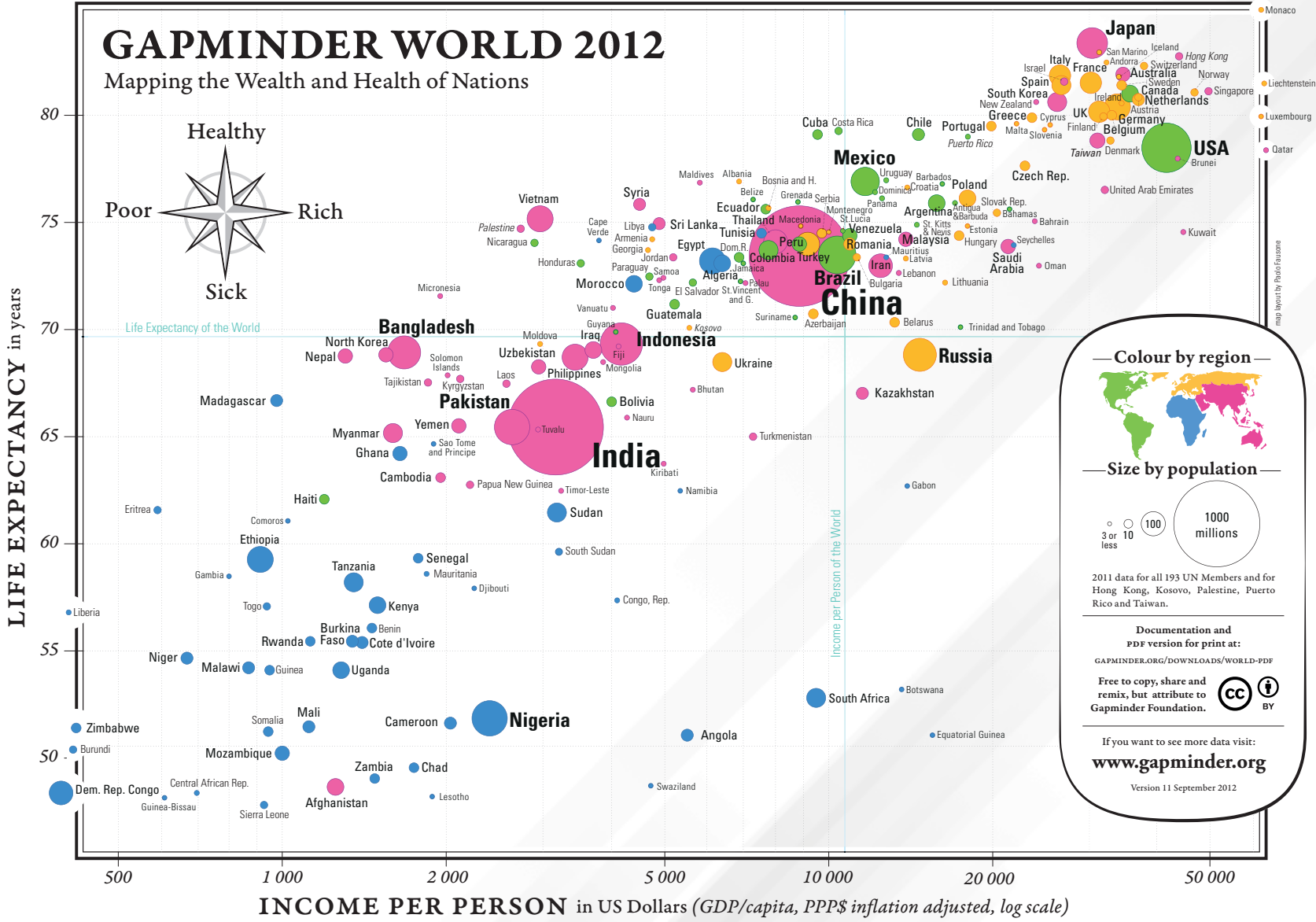


Abundance through Technology



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

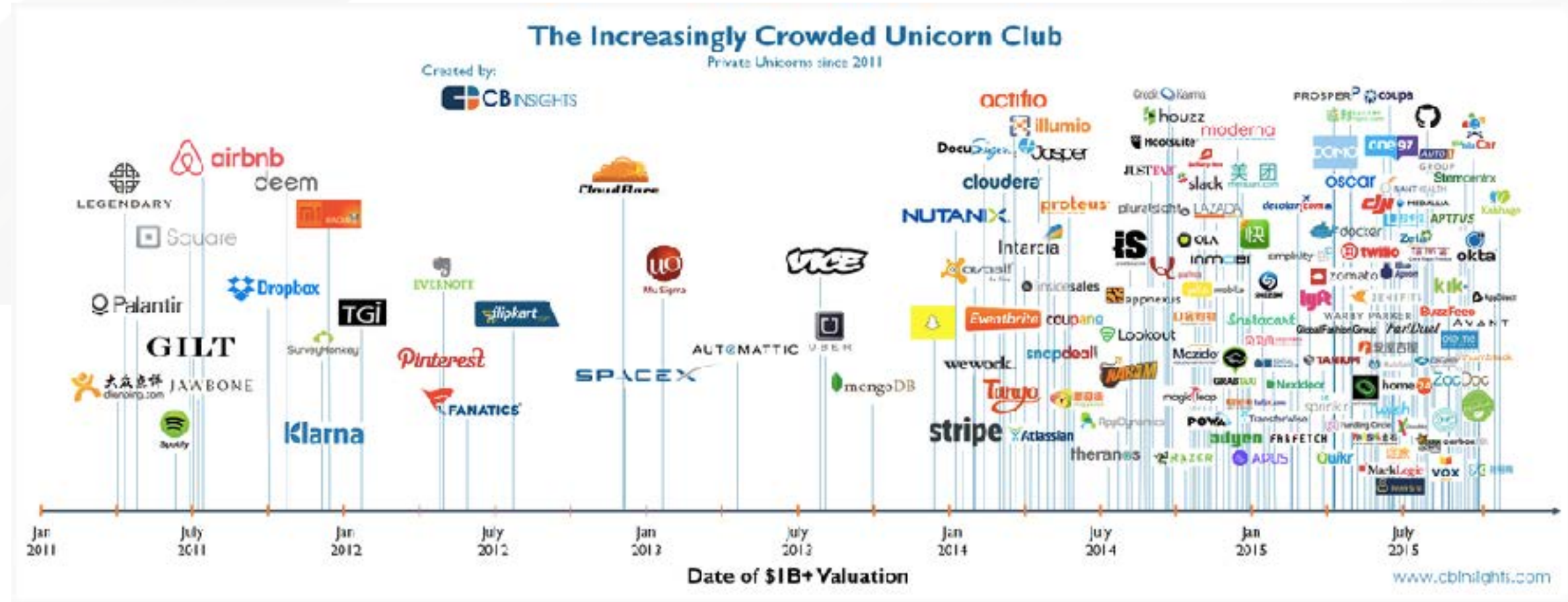
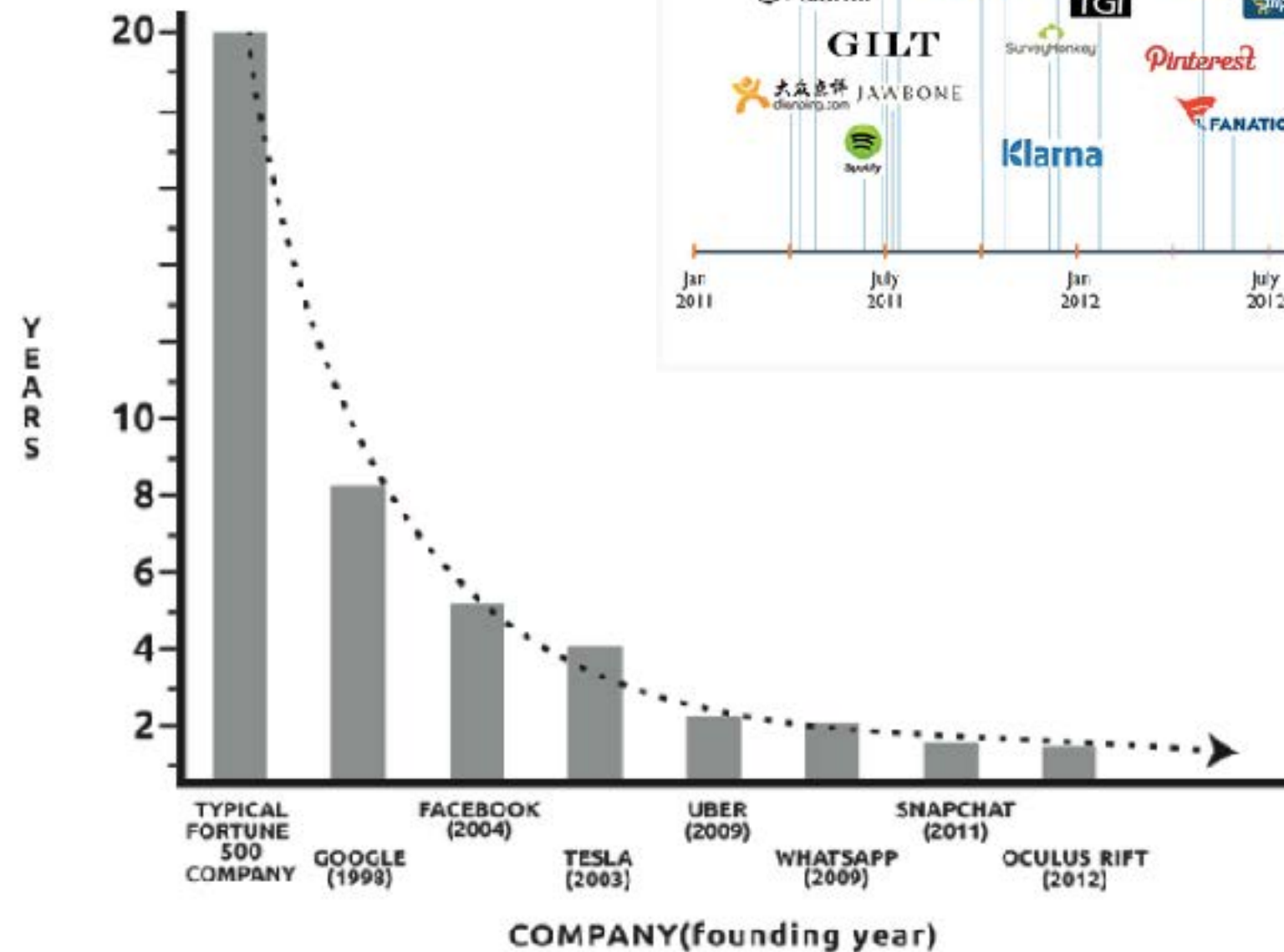
Information Layers



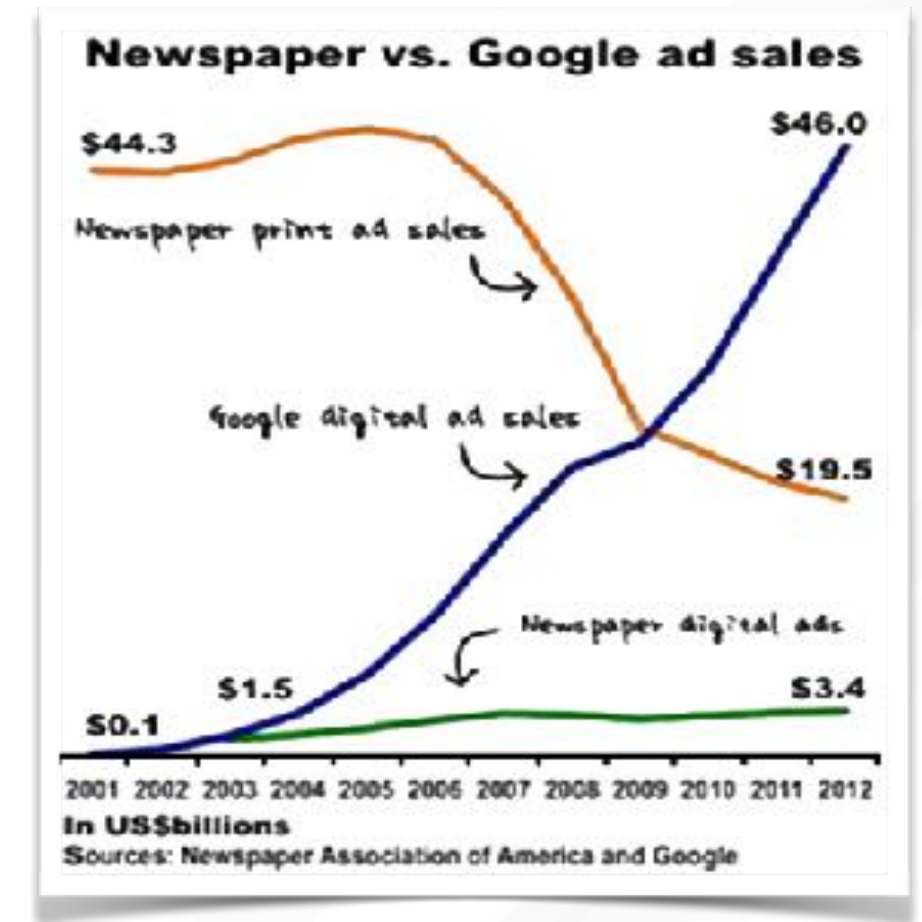
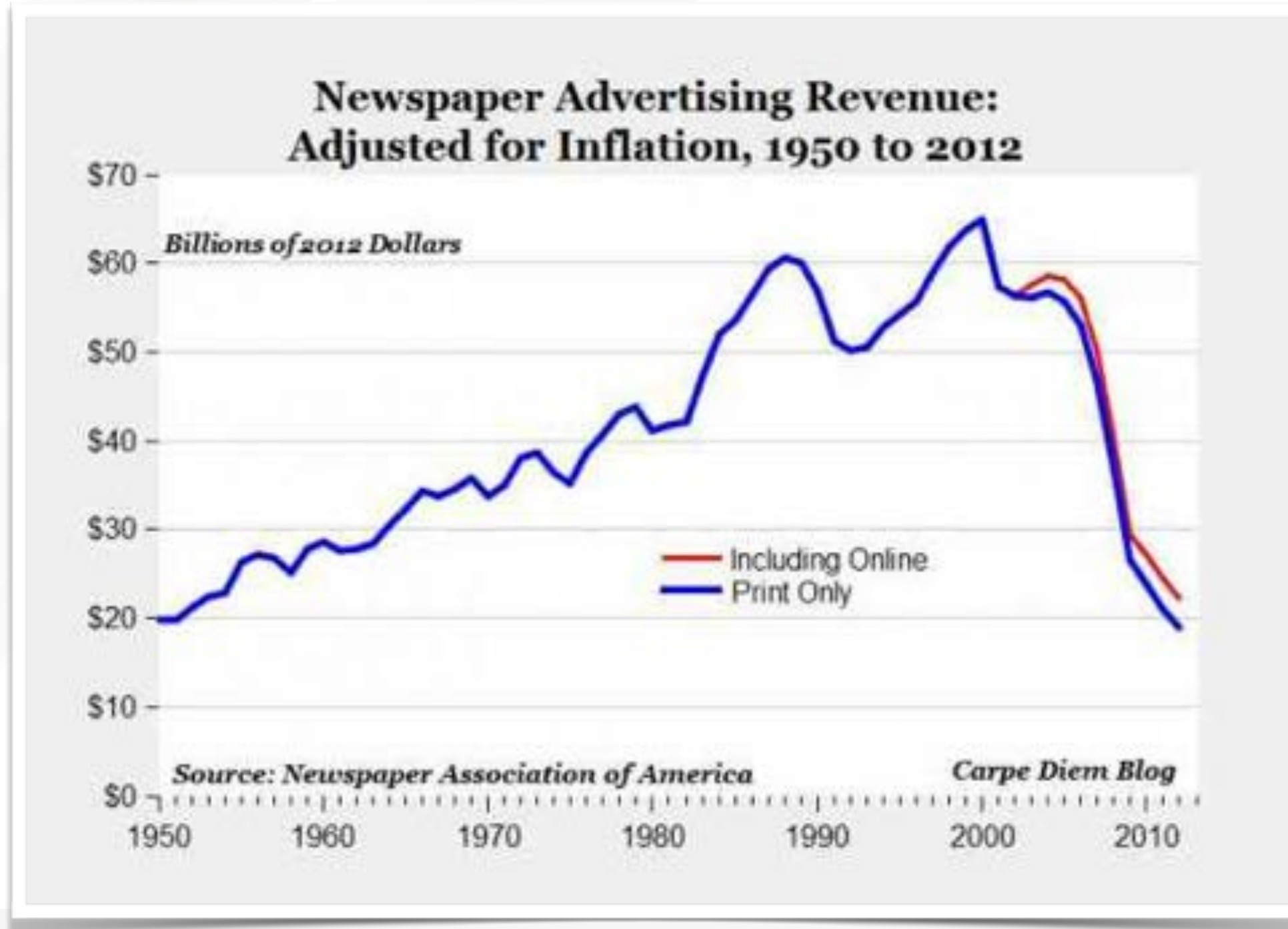
Digitize
Disrupt
Demonetize
Democratize

New
Breakthroughs

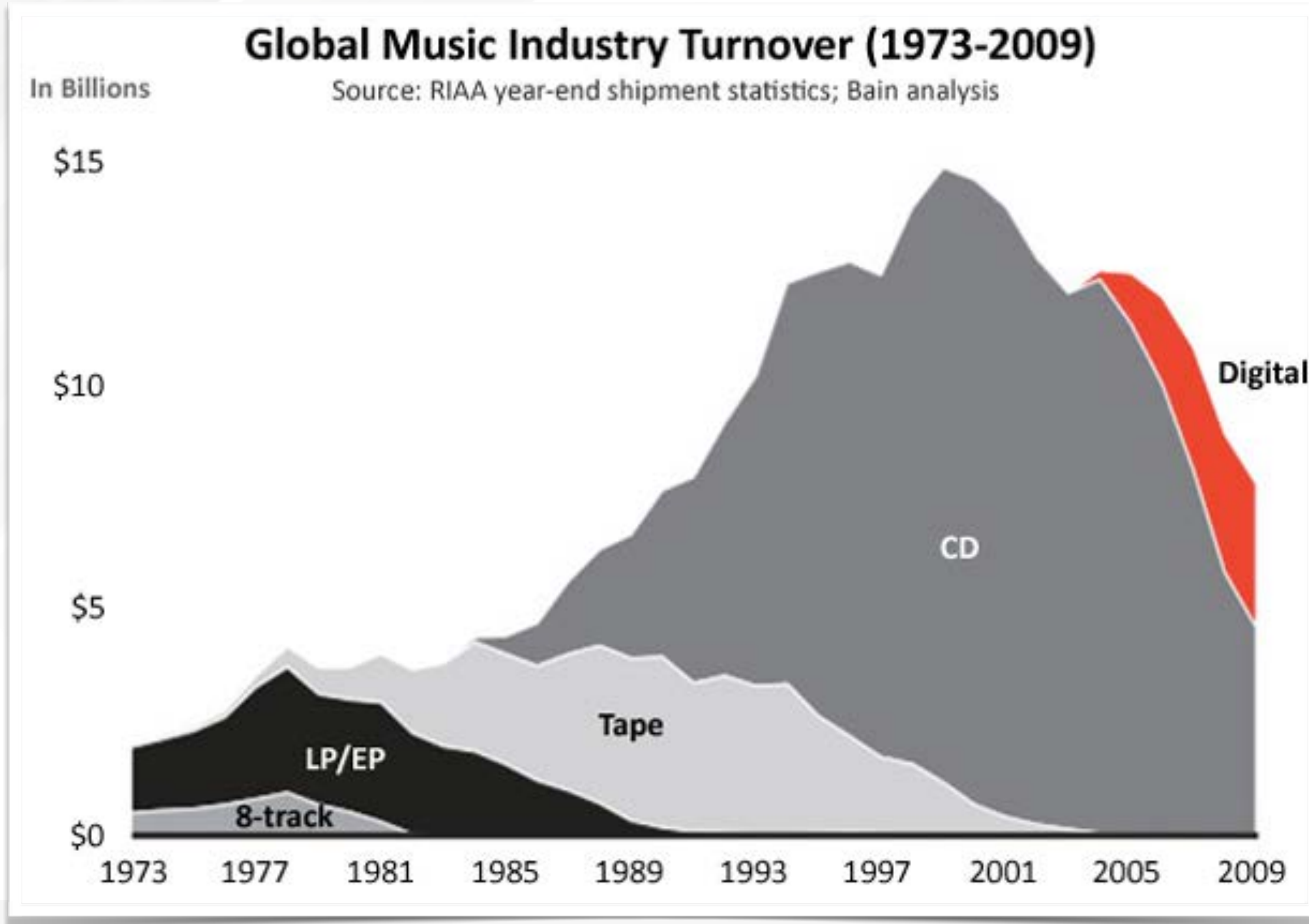
Market cap to a billion



Newspapers

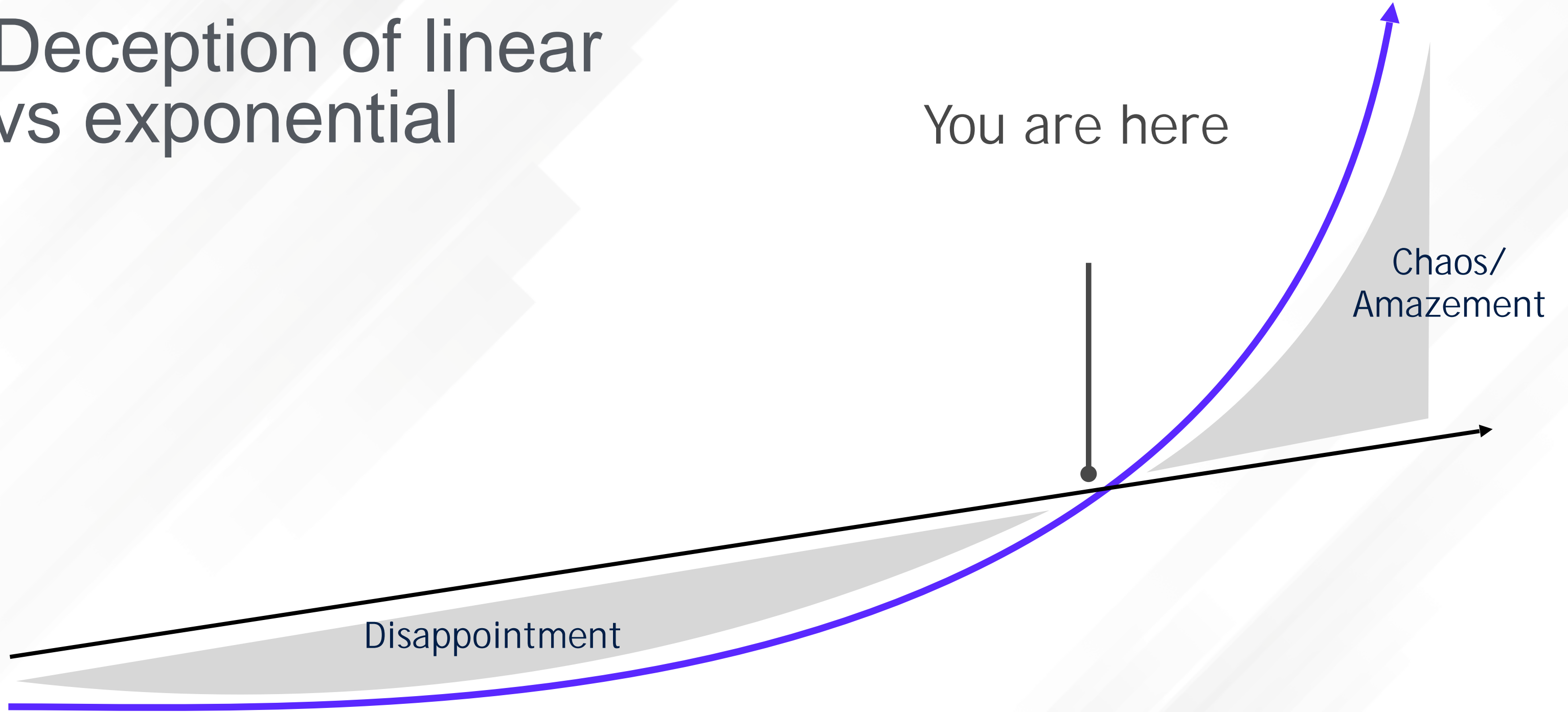


Music



Deception of linear vs exponential

You are here



Cost of Lidar

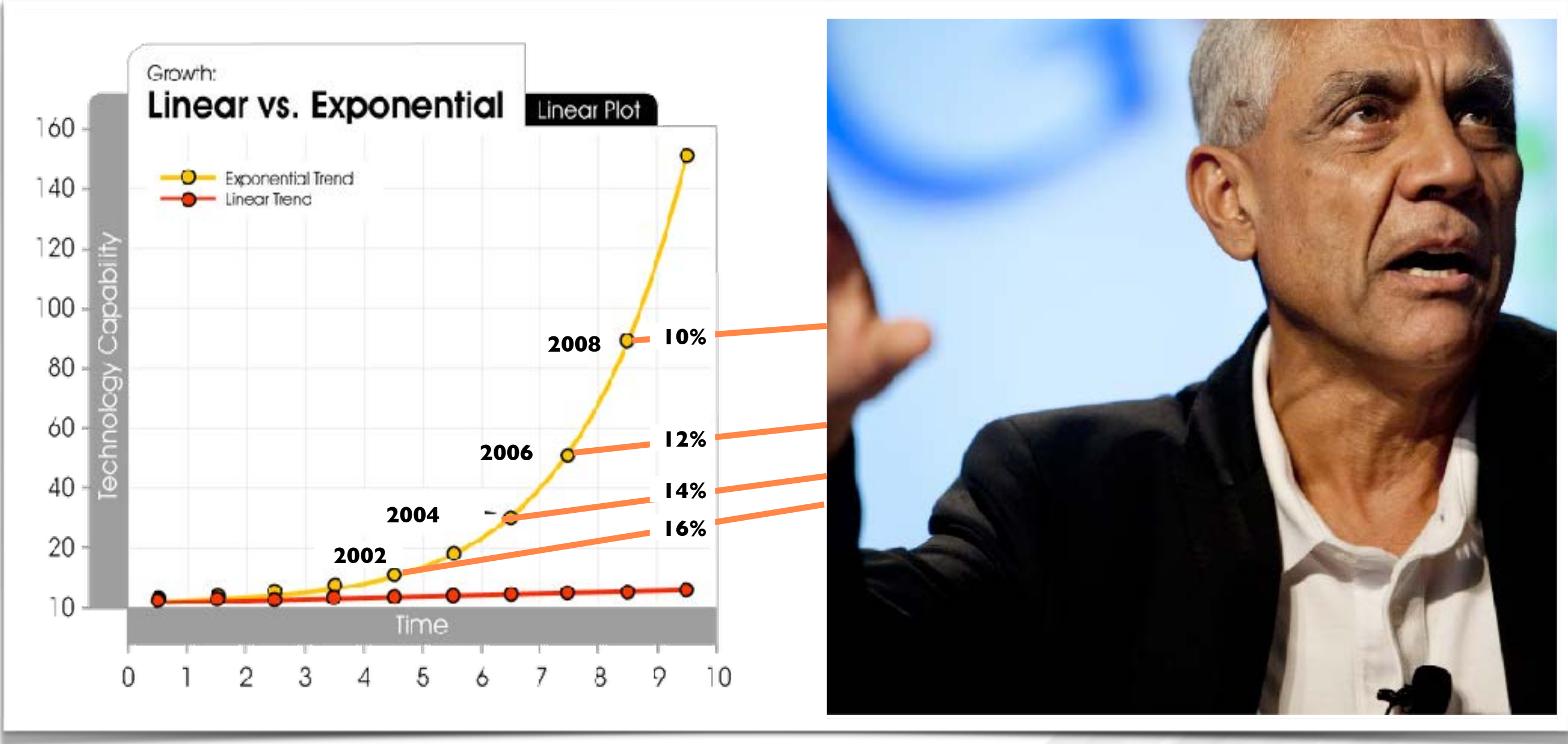
2012: \$75,000

2017: \$50

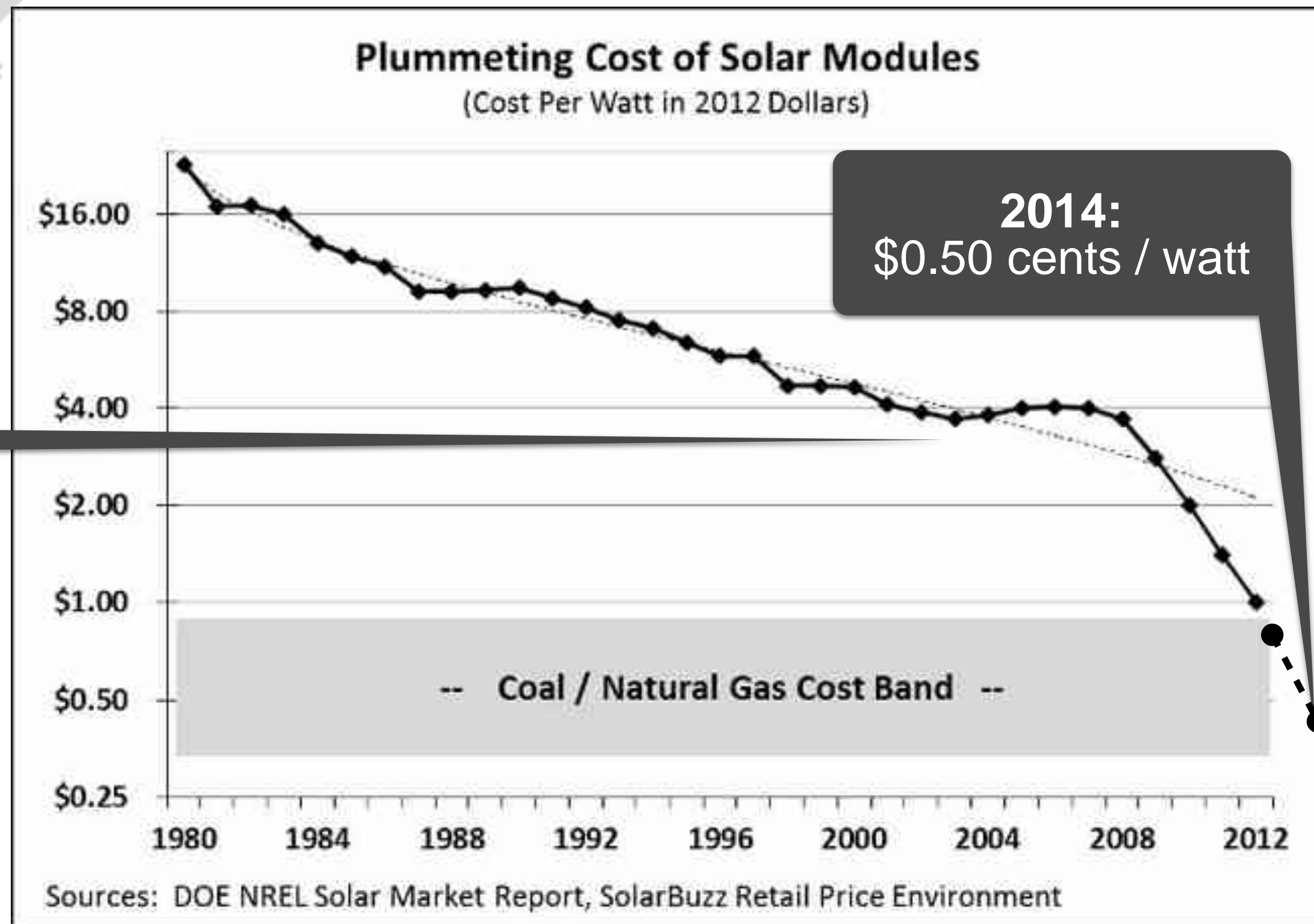
2020: \$10



Vinod Khosla // The rise of mobile phones



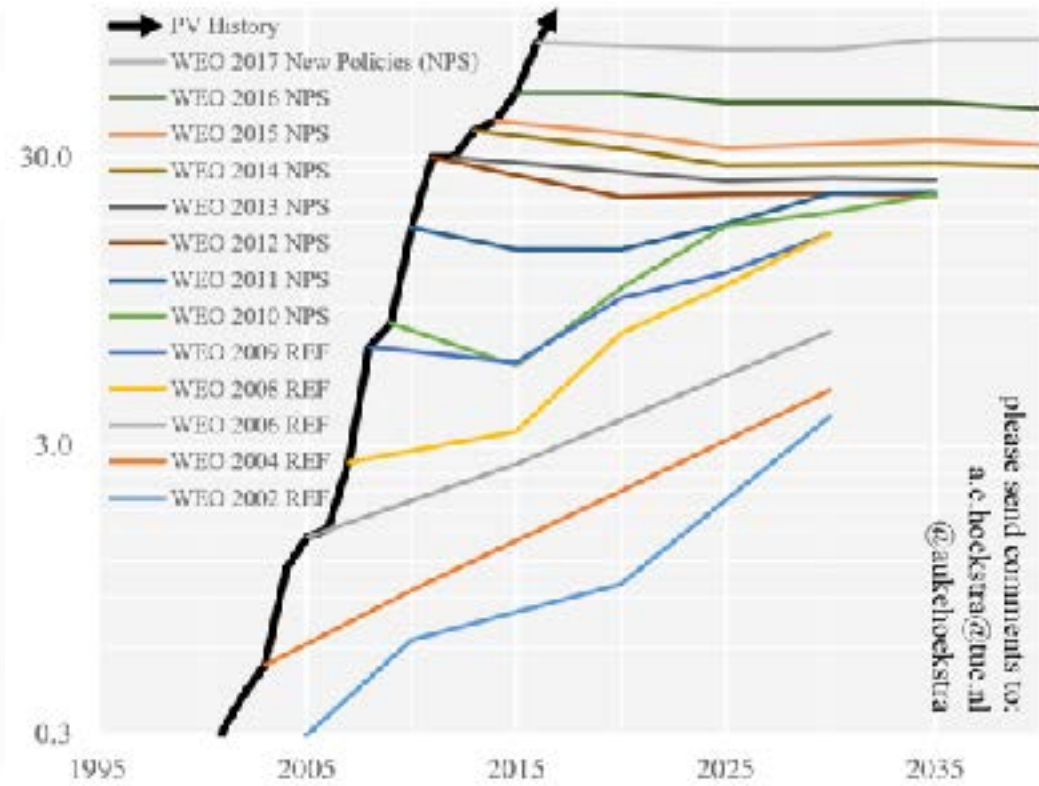
Top Solar Expert:
cost of all components
(polycrystalline silicon
ingots, protective glass &
silver in wiring) will never
drop below \$1/watt.



“Getting below \$1 has exceeded my expectations”

OECD - WEO

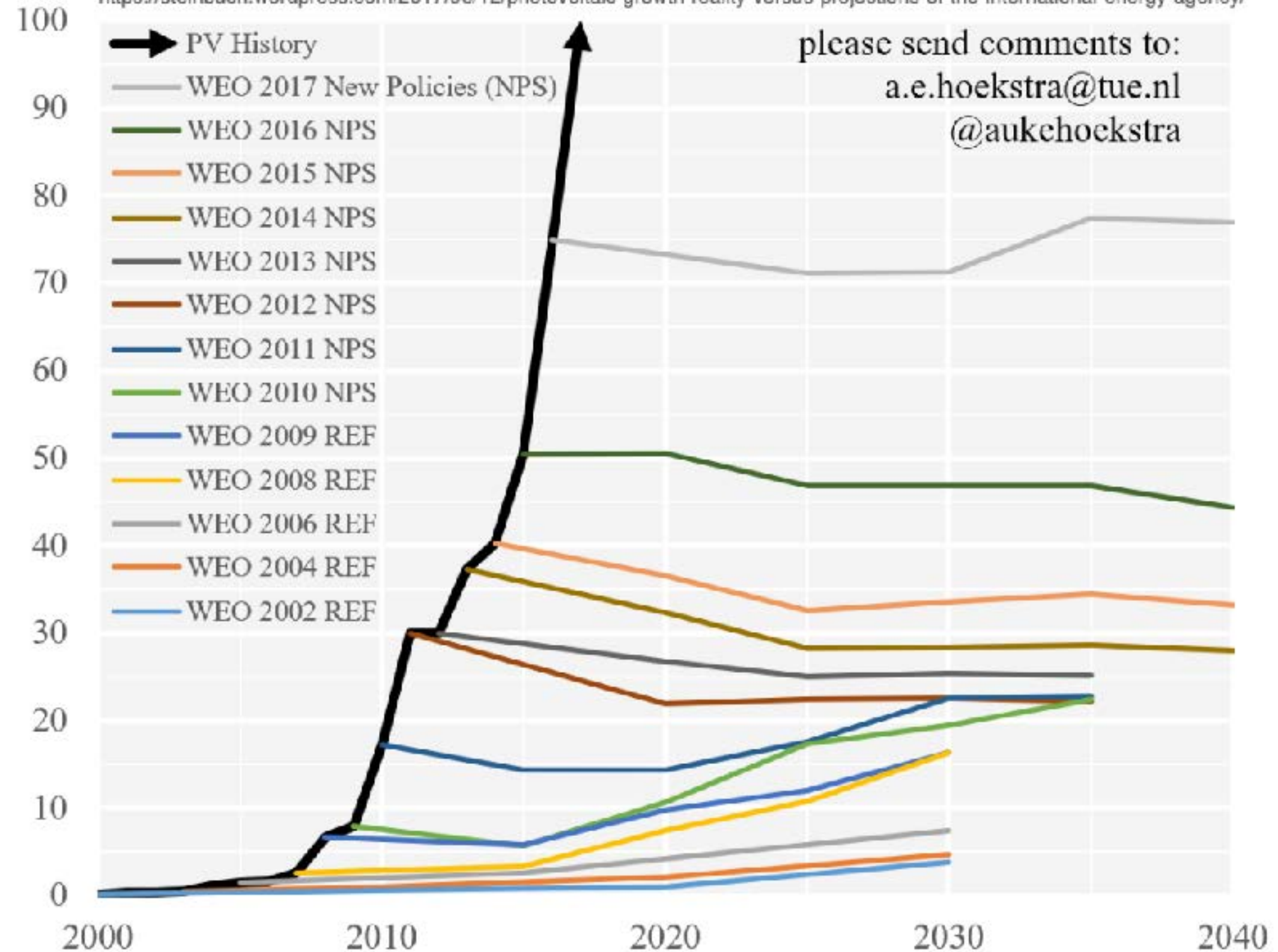
Annual PV additions: historic data vs IEA WEO predictions
In GW of added capacity per year - source International Energy Agency - World Energy Outlook.



Annual PV additions: historic data vs IEA WEO predictions

In GW of added capacity per year - source International Energy Agency - World Energy Outlook

<https://steinbuch.wordpress.com/2017/06/12/photovoltaic-growth-reality-versus-projections-of-the-international-energy-agency/>



The shaving battle



Gillette[®]

2005: \$ 57bn (70%)



Unilever



DOLLAR SHAVE CLUB
SHAVE TIME. SHAVE MONEY.

2016: \$1bn (15%)

Car Wash - Buenos Aires



Information Layers



Digitize
Disrupt
Demonetize
Democratize

New
Breakthroughs

Open Everything



**Domain is
Digitized**

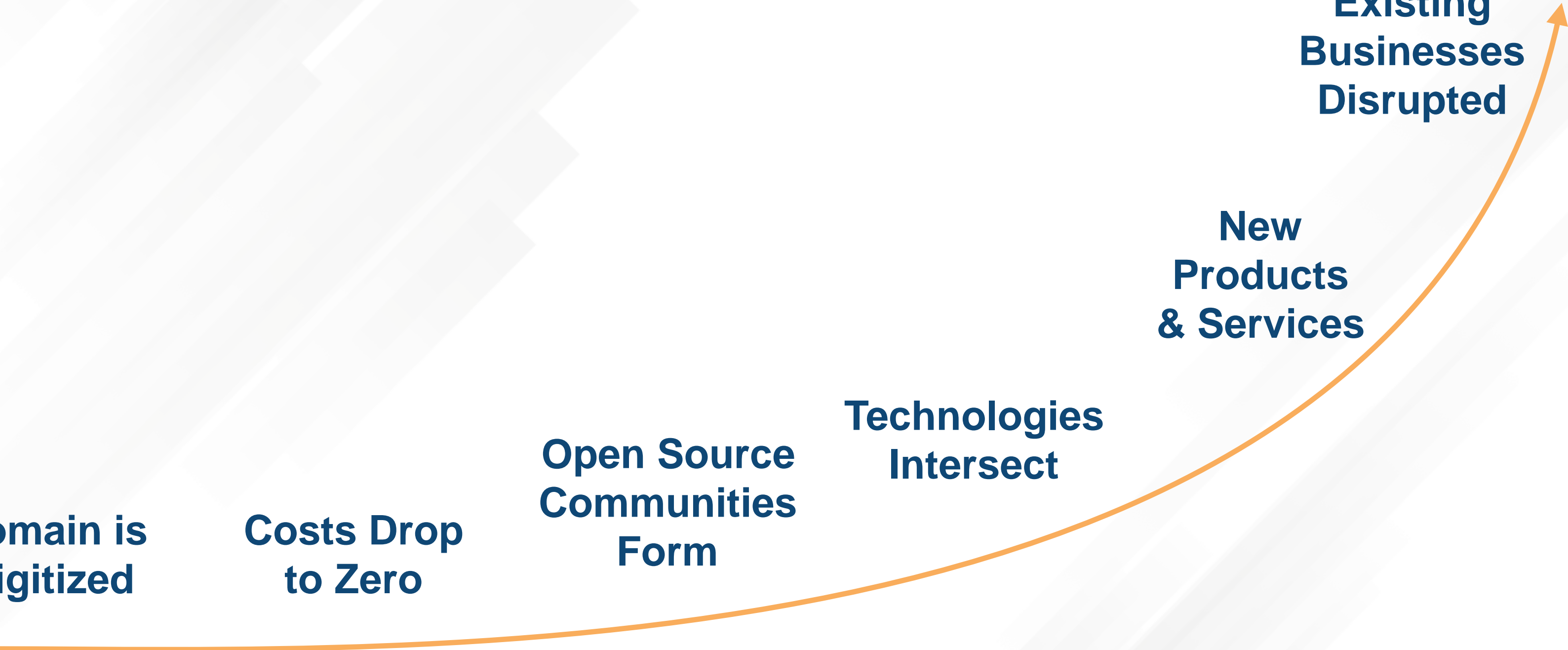
**Costs Drop
to Zero**

**Open Source
Communities
Form**

**Technologies
Intersect**

**New
Products
& Services**

**Existing
Businesses
Disrupted**





Vietnamese farmers make solar powered boat



Hyperloop



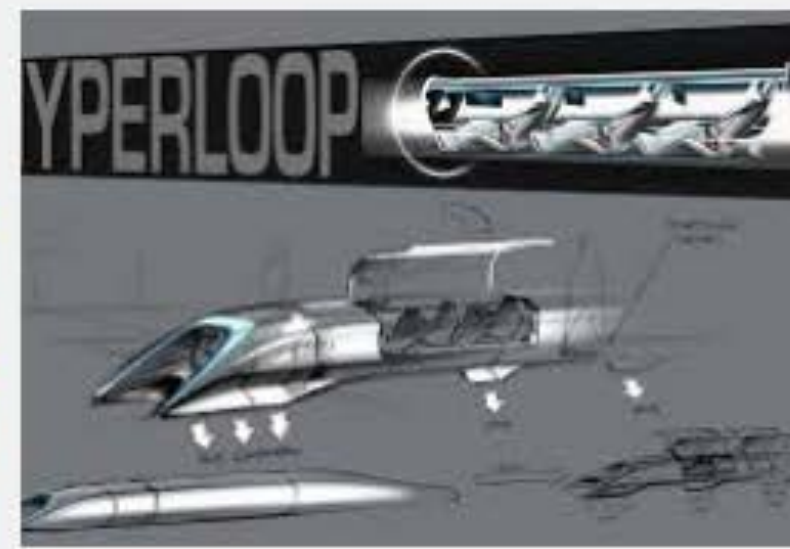
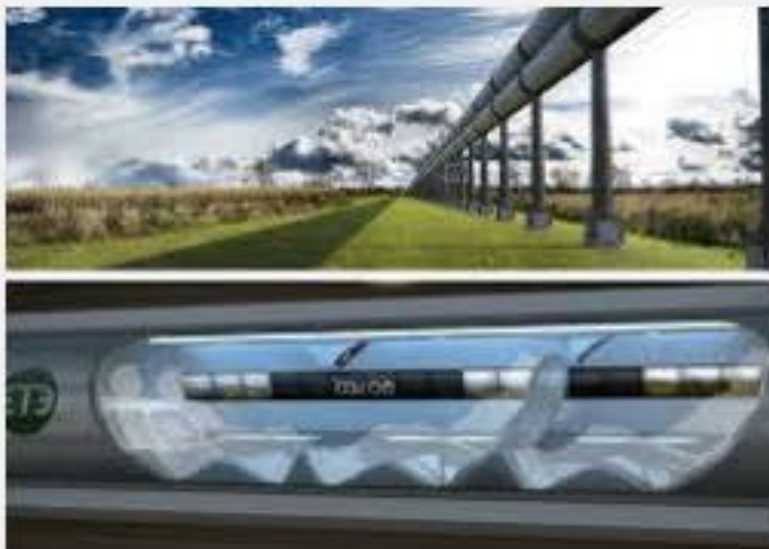
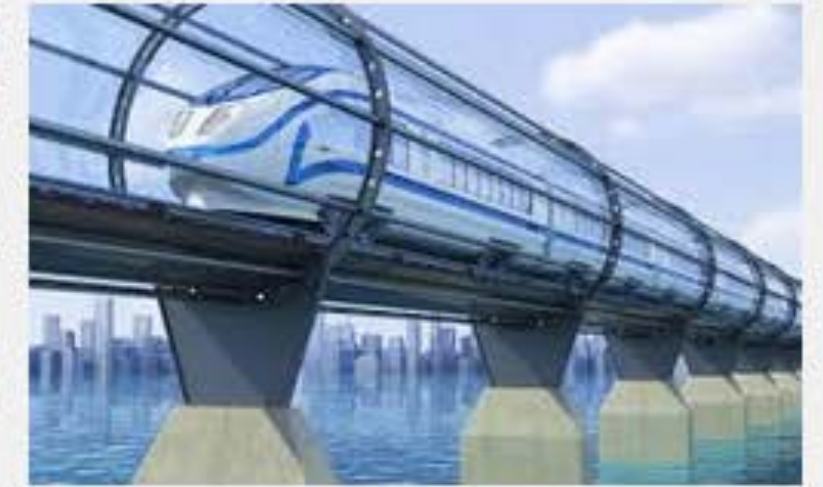
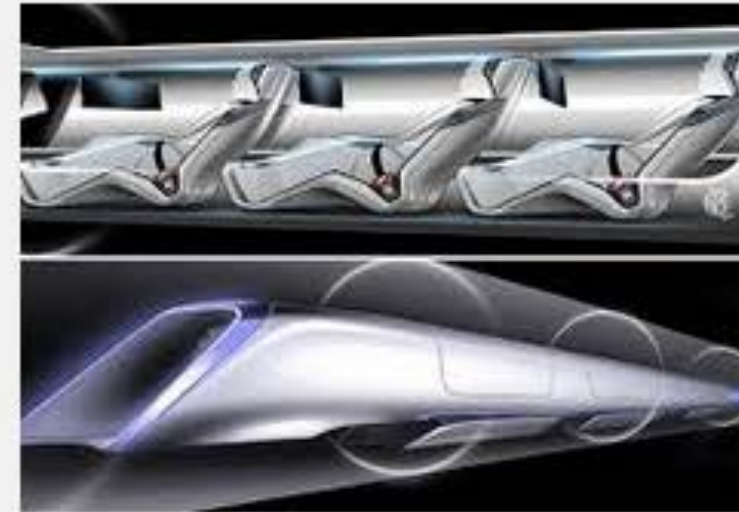
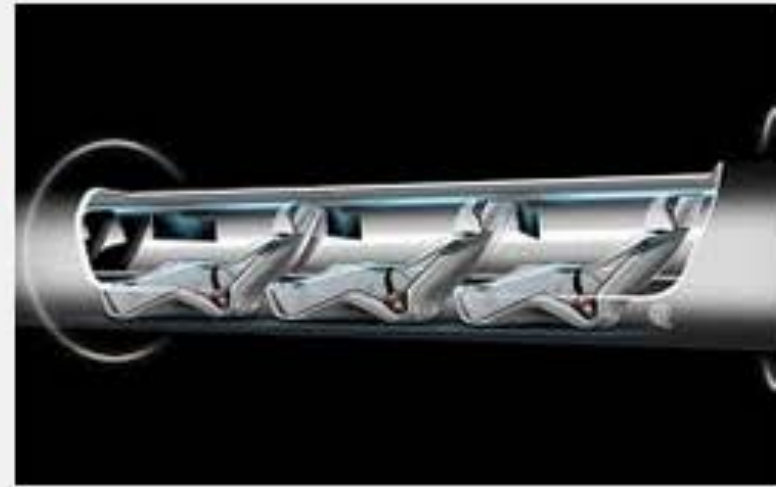
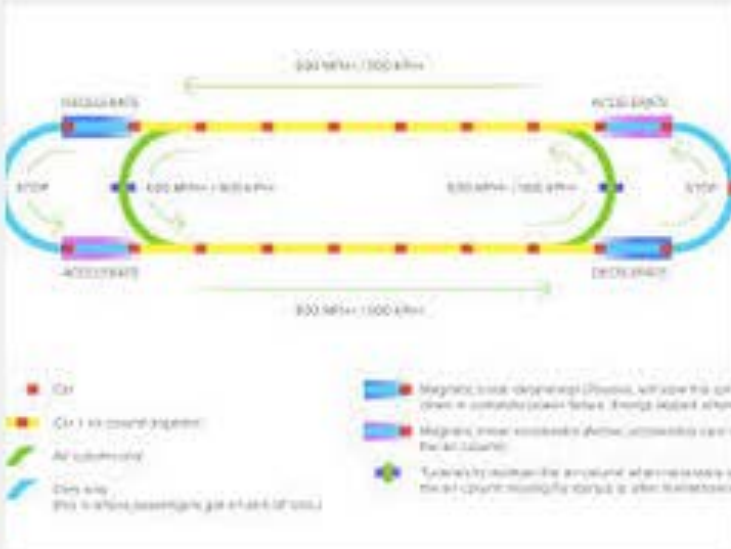
Tesla



Concept



Map



Bitcoin / Blockchain

Network

Bitcoin Network

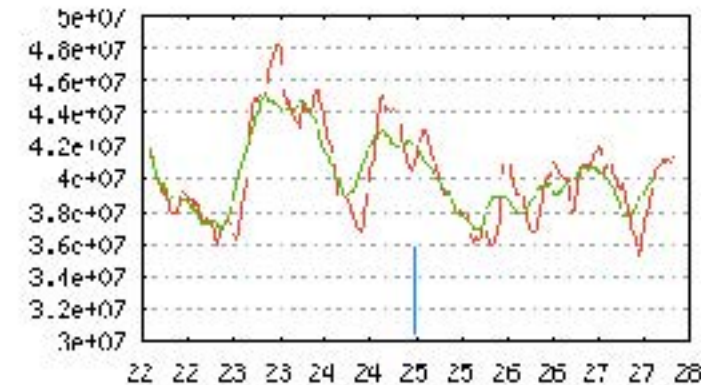
Economy

Total BTC	12,569,550 BTC
Market Cap based on latest prices	6,511,026,900 USD or 5,027,945,696 EUR or 20,526,076,150 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

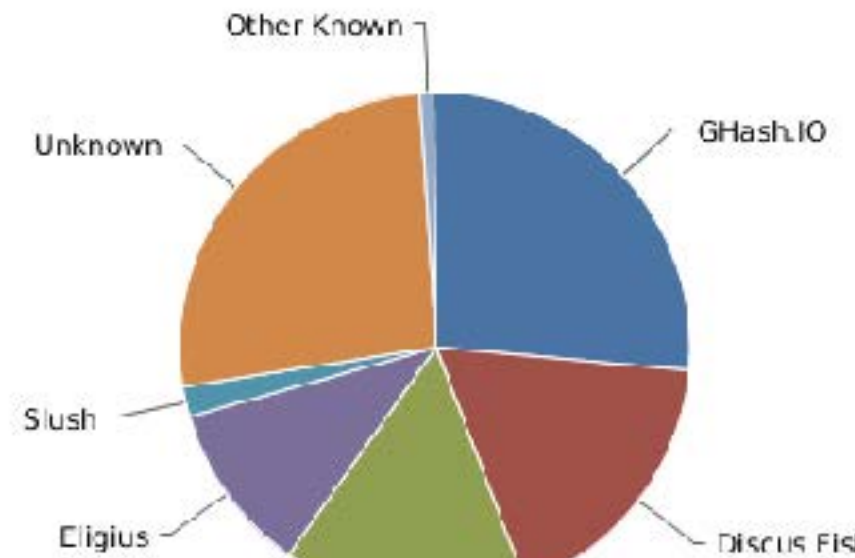
Count	292,781
Blocks last 24h	163
Blocks avg. per hour	6.79
Difficulty	5,006,860,689
Next Difficulty in 1555 blocks	5,246,869,694
Network Hashrate Torahash/s	37558.56
Network Hashrate PetaFLOPS	476993.66

Network Hashrate



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

Hashrate Distribution



Other Known	Unknown	Slush	Eligius	Discus Fish	GHash.IO
-------------	---------	-------	---------	-------------	----------

Financial

Equities

BTC Trading Corp. **CoinBr.com**

Crypto:Stocks | PicoStocks |

Forex

1Broker **Bit4X**

FiOB FIRST NATIONAL INNOVATION BROKERS

kraken **LiteForex**

Contracts

MinerLease

Stocks

EX

Lending

Bit Deposit | **Bitbond.net**

Futures

ICBIT
Bitcoin Exchange

Options

BTClevels
BTC Oracle

Interest

Bit Deposit
coinlenders

Payment Processing

Escrow

BTC-ASIA.com
Secure Bitcoin Escrows

BTCrow

DESCROW.COM

Merchant Solutions / Transfers

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

bitpay

GLIPH | DWOLLA | **Fasterco.in** | **Inputs** | **MTGOX** | **OpenCoin** | **paysius** | **zobit**

Banking & eWallets

BIPS | **betip.** | 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**

Bitroll | **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**

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

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

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

LONDONBITCOINEXCHANGE! | **mercadobitcoin** | **KANAIMO GOLD**

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

Bulk Trades

Bitcoin-24x

bitpay

Local / In-Hand Exchanges

BTCSPOT.COM

bitcoinlocator

LocalBitcoins.com | **Trade Your Bitcoin!**

Gift/Debit Cards

BIPS | **BitCC** | **BTCINSTANT.COM** | **BTCLot Web**

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

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

Precious & Base Metals/Coins

AGORA COMMODITIES | **AMAGMETALS** | **BitcoinCommodities**

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

HOPEA FI | **Sildas Bitcoin** | **SWISS SILVER** | **WISERMETALS**

Real-time Trading

BitBox

Bitcoin Central

Bitcoin HK Exchange

bitcoin.de

Bitcoin-24x

BitMarket.co

bitNZ

BITSTAMP

BTC

BTC.SX

CAMP BX

Crypto-Trade

EX ANTE

FYB-SG

INTER-SANGO

Kapiton

LocalBitcoins.com

MoneypakTrader

MTGOX

THE ROCK

₹Bitco.in

snapswap

UK Bitcoin Market

Vircurex

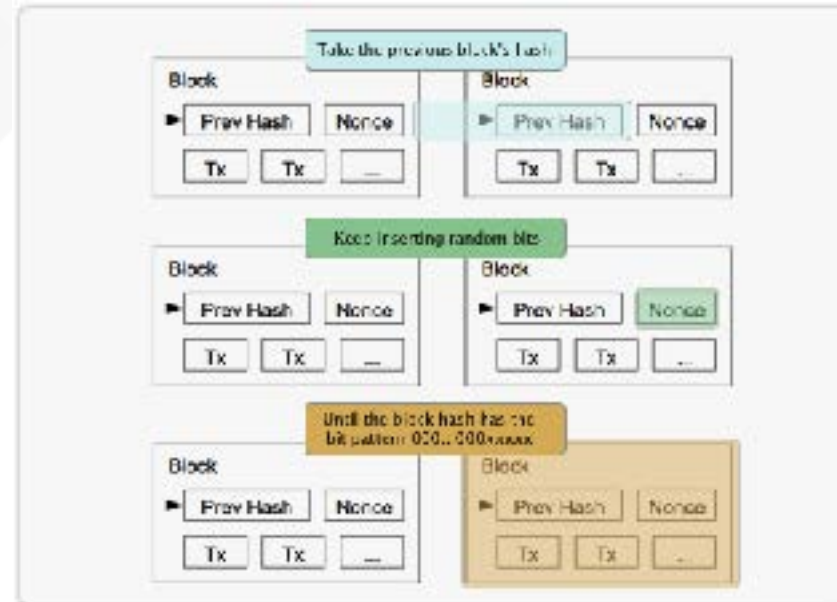
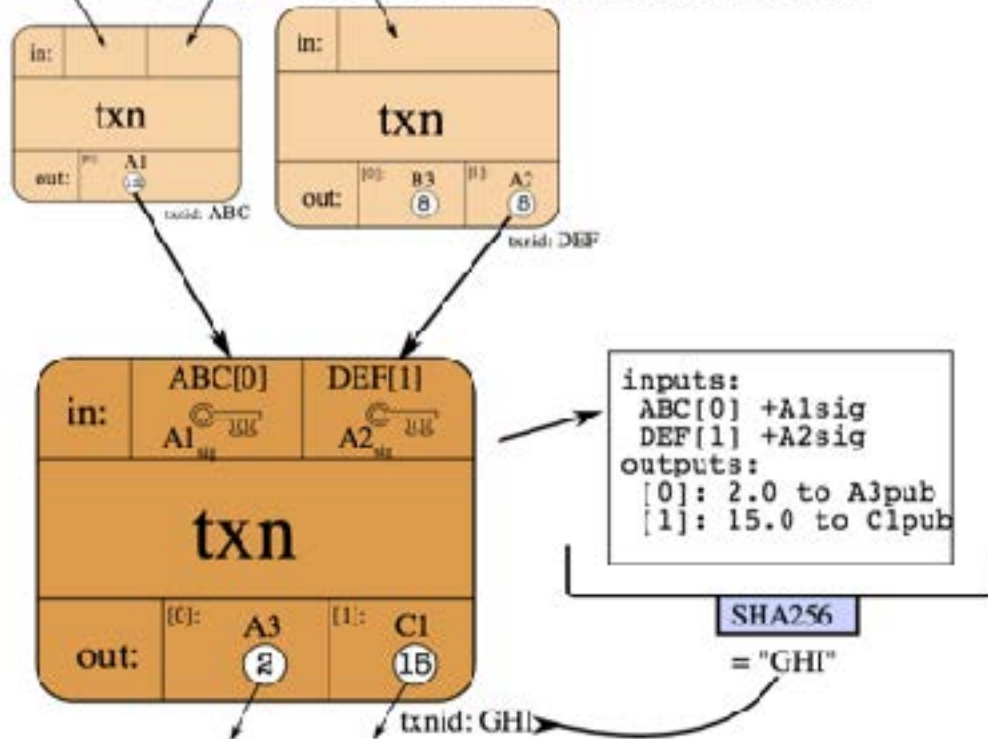
VirtEx

VirWOX

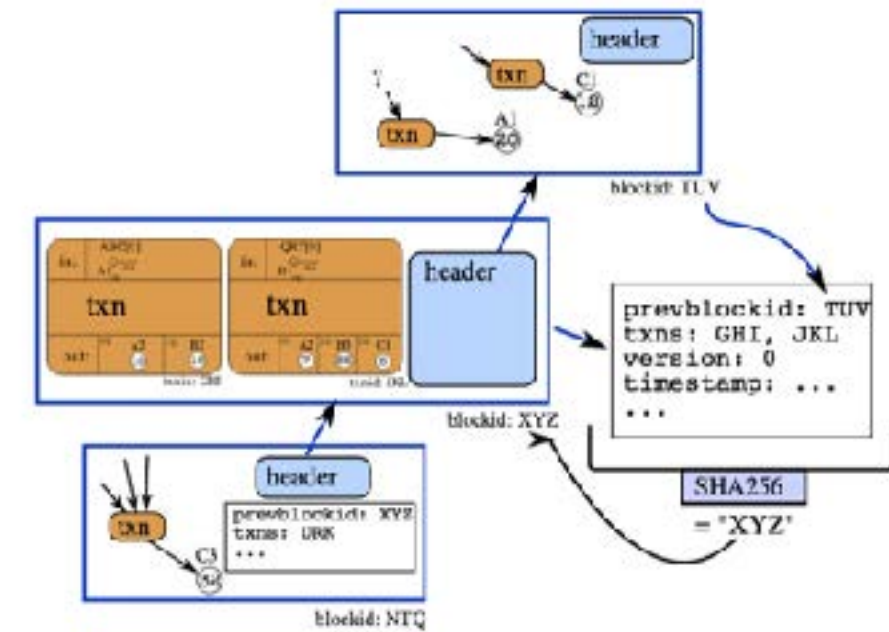
WeExchange

Block Chain

Serialized Transactions



The Block Chain



<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

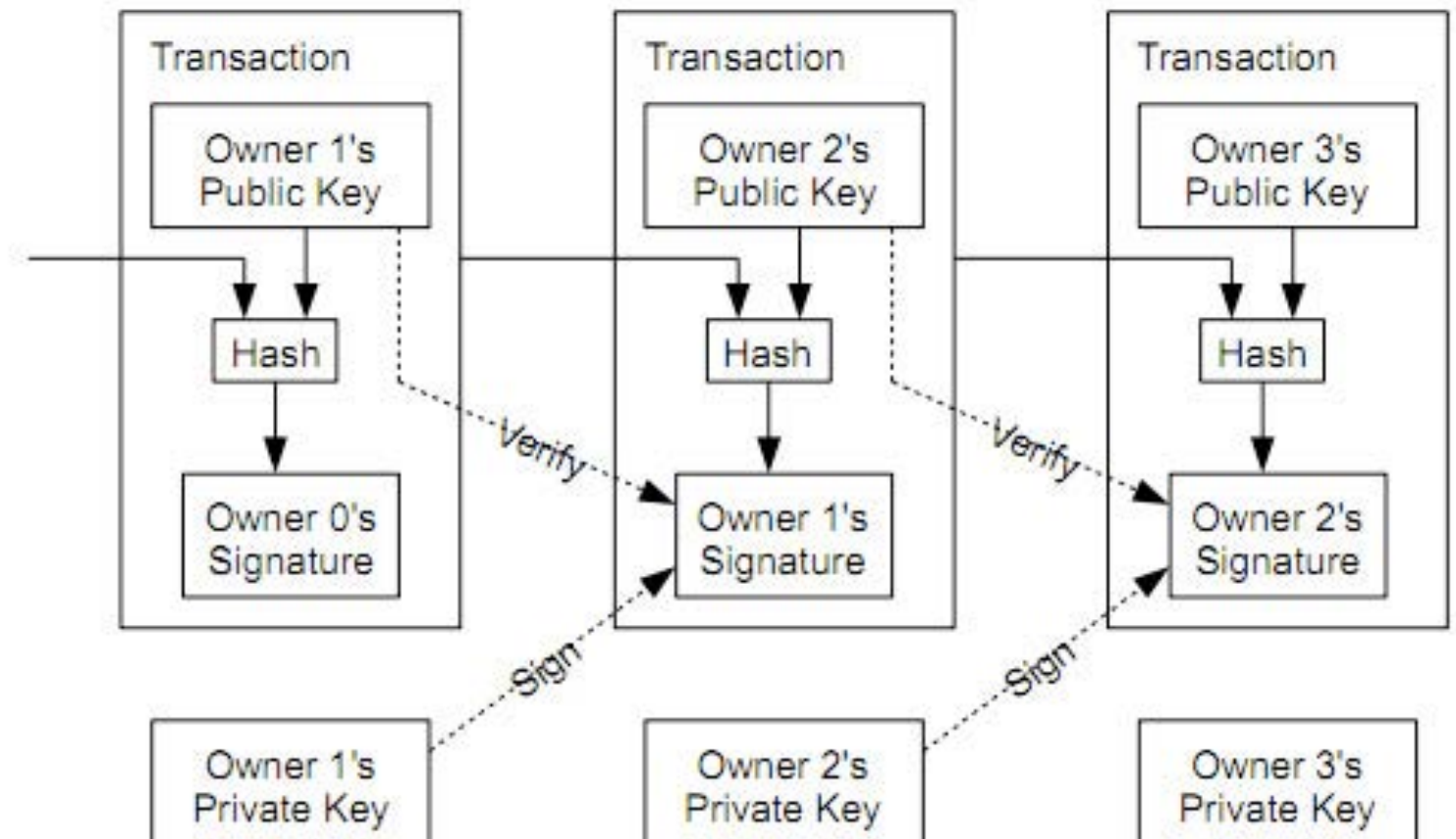
Transaction logs

Voting systems

Registries

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

DACs (Distributed Autonomous Corporations - Ethereum)





How many people are online?

2010
1.2
billion

2015
2.8
billion

2020
>6
billion



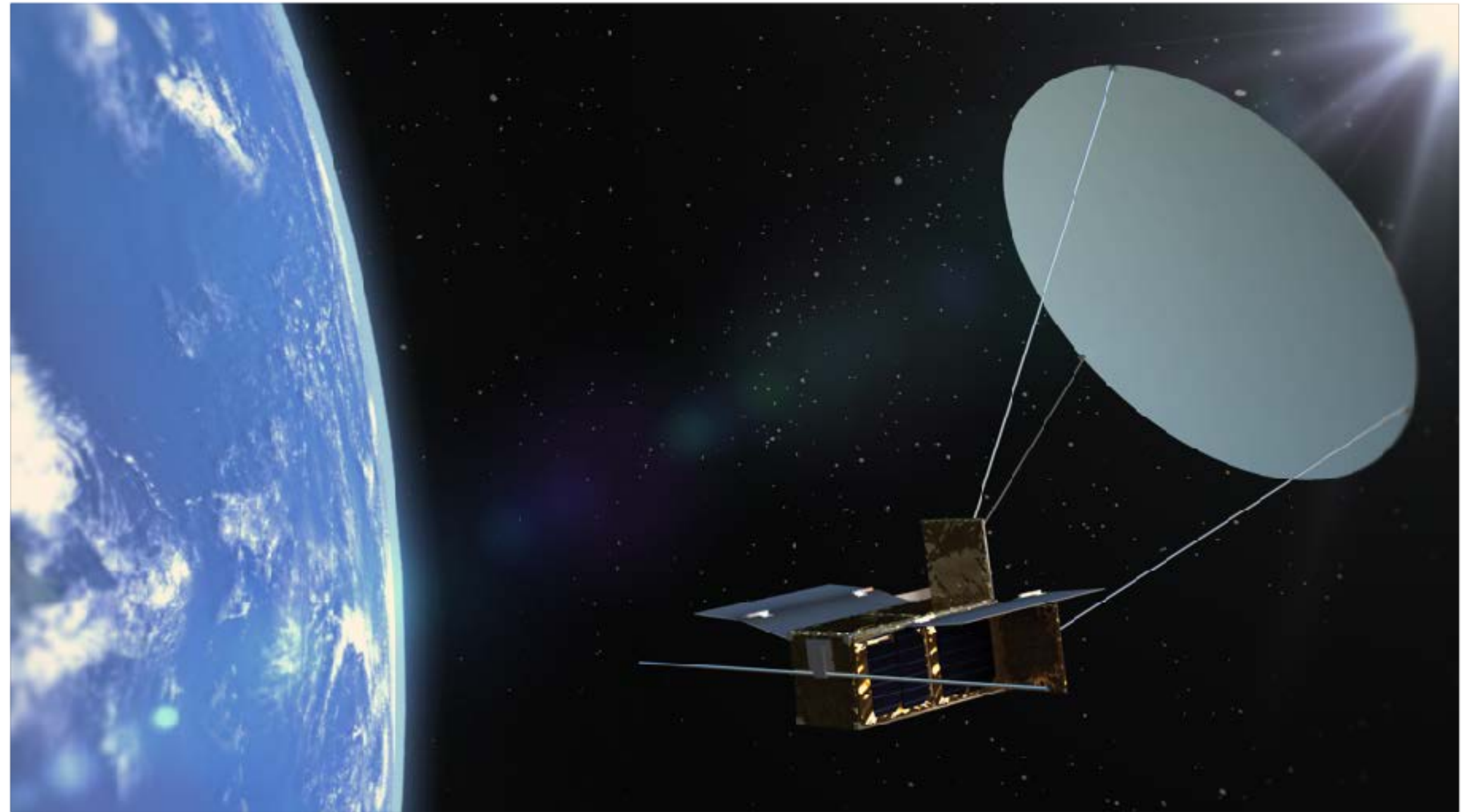
Google Loon



SkyFi

60 nano
satellites

1 gb

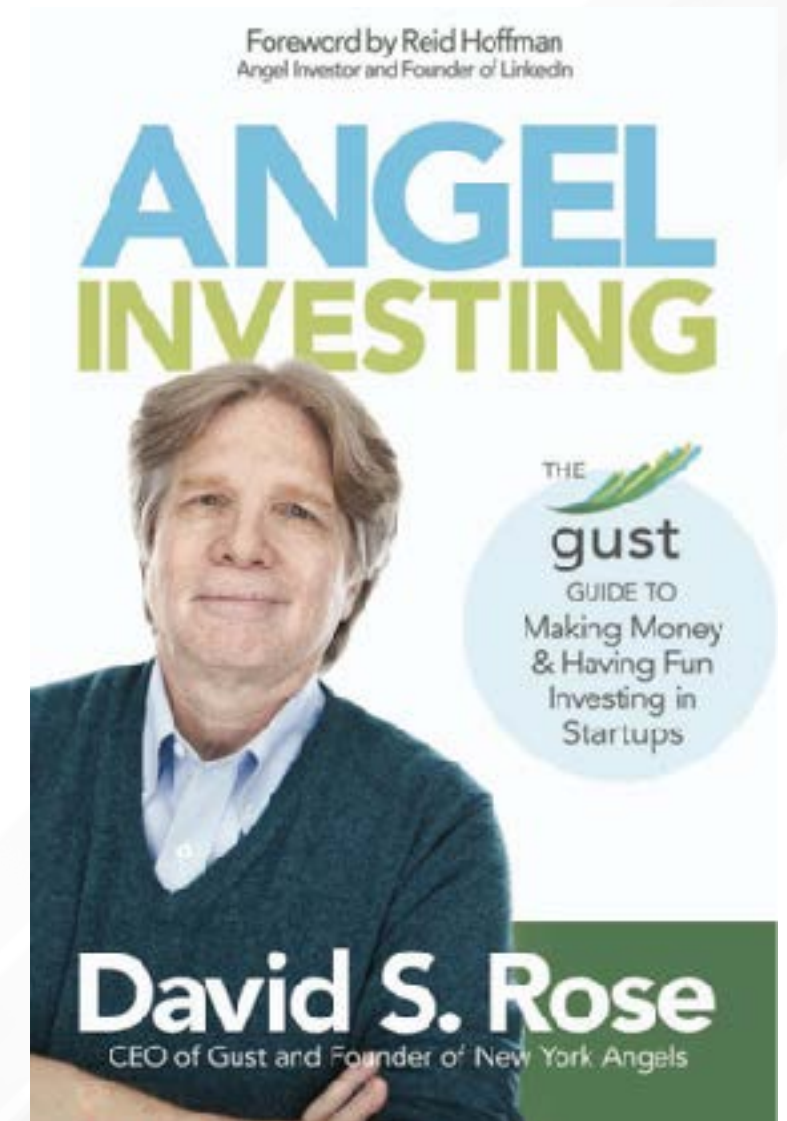


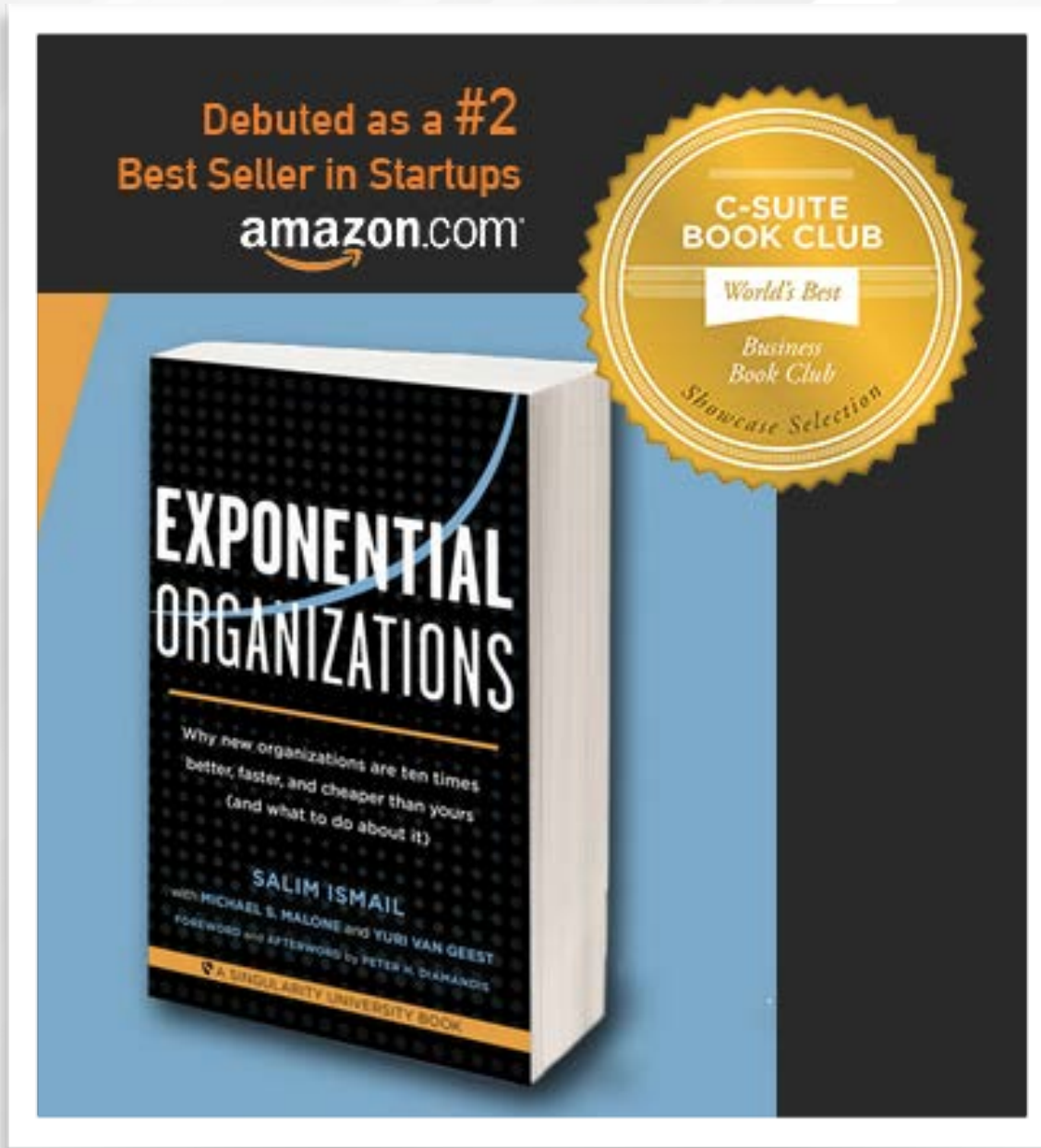


**What's
Next?**

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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LEADERSHIP BUSINESS BOOKS

5 Best Business Books

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

Best Business Books NOVEMBER 17, 2015

Rupert Murdoch Says Tribune Publishing, LA Times About to be Sold 7:07 PM EST

Strategy

ExOs... 10x better performance



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



GitHub



NETFLIX

A screenshot of a website titled "Top 100 ExOs". The page has a blue background with a fingerprint-like pattern. The text on the page reads: "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 over their peers. We present below the 100 most scalable organizations in the world, based on the diagnostic survey in our book, 'Exponential Organizations'." At the bottom of the screenshot, it says "1. GitHub".

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 over their peers. We present below the 100 most scalable organizations in the world, based on the diagnostic survey in our book, "Exponential Organizations".

1. GitHub

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

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

the mtp

MTP

=

Massive, Transformative, Purpose

MTP - Massive Transformative Purpose



"Radical breakthroughs for the benefits of humanity"

"Positively impact one billion people"

"Organize the world's information"

"Make invention accessible"

"Ideas worth spreading"

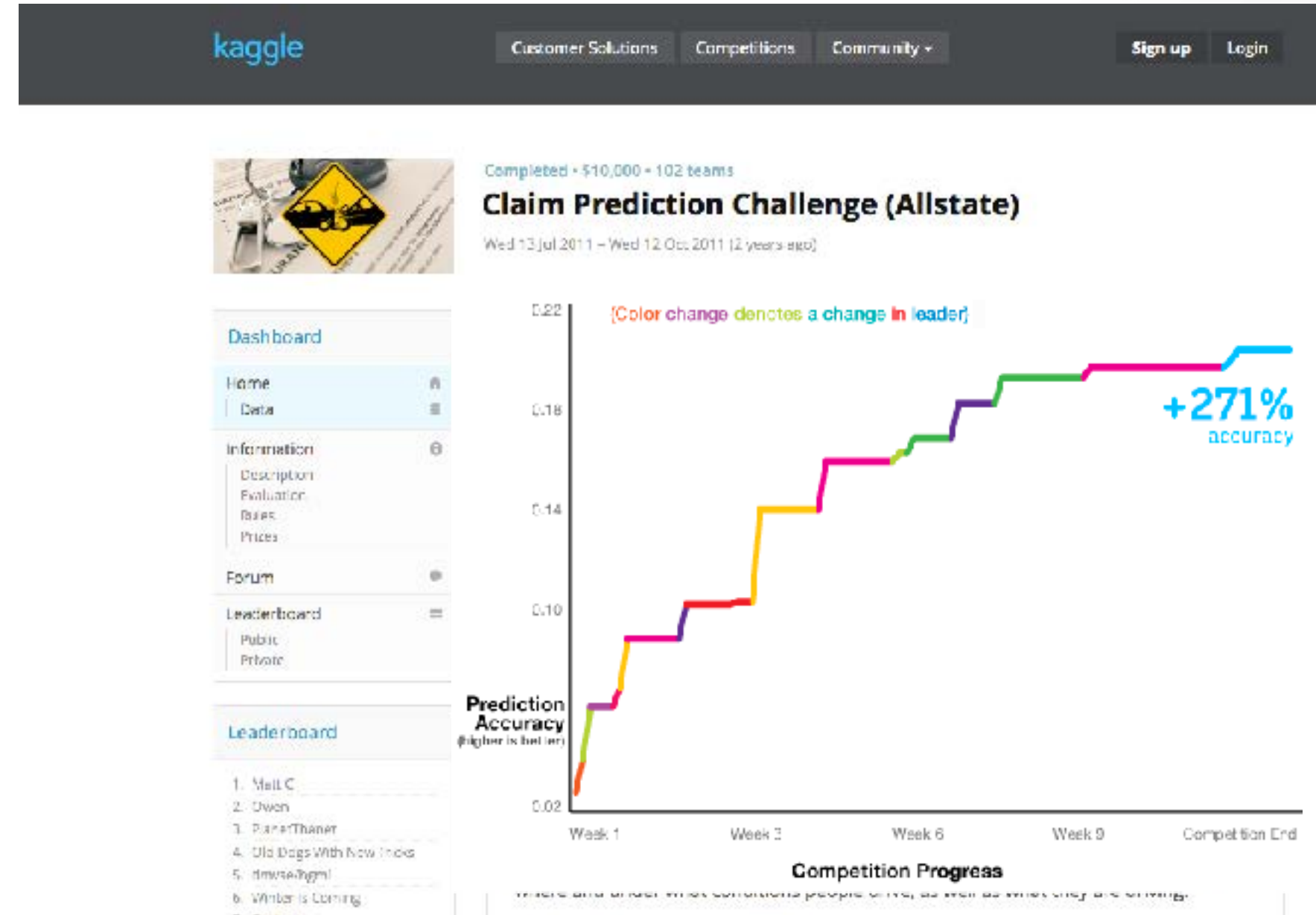
"Open Happiness"

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

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

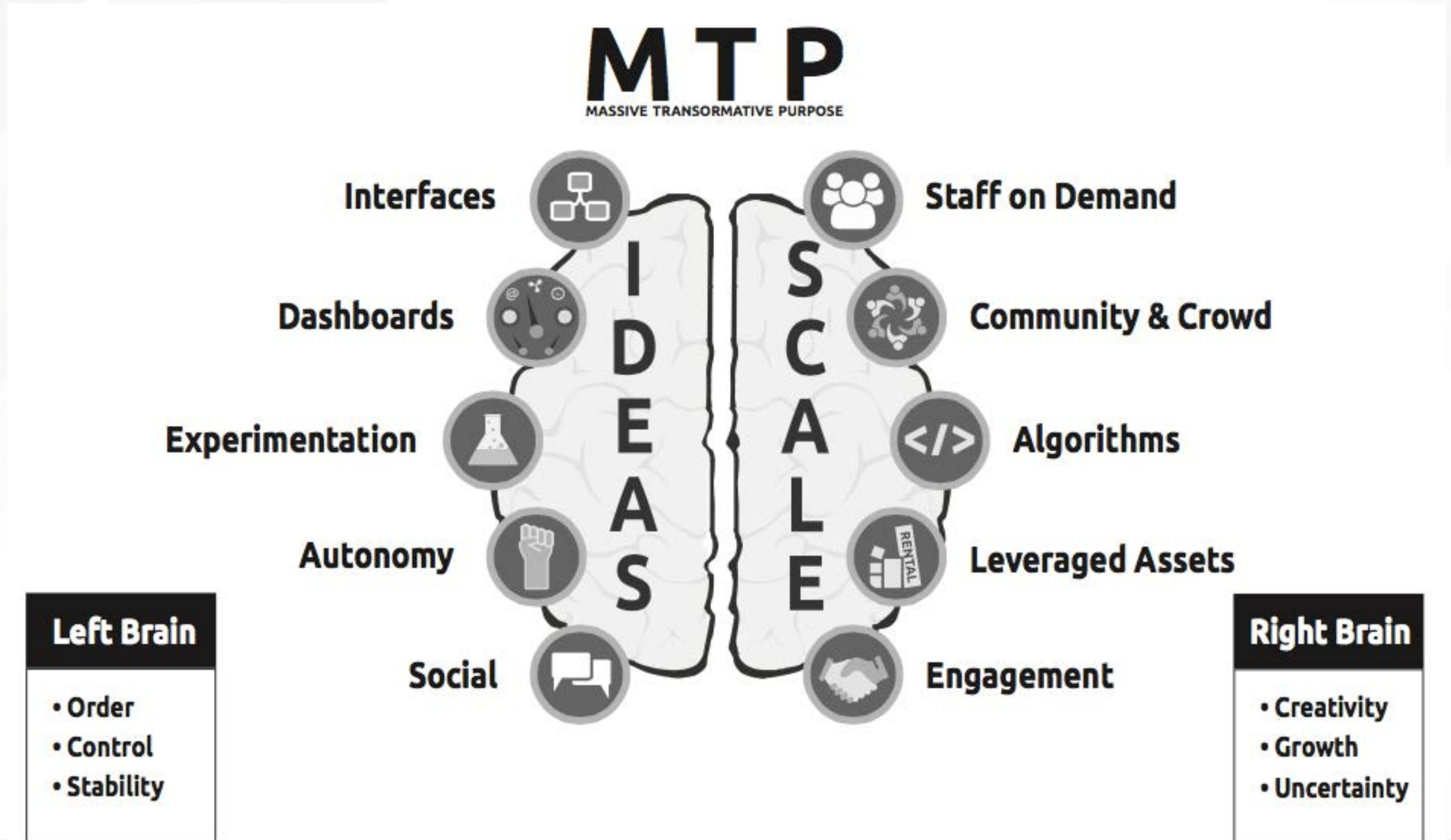


Autonomy - 3x



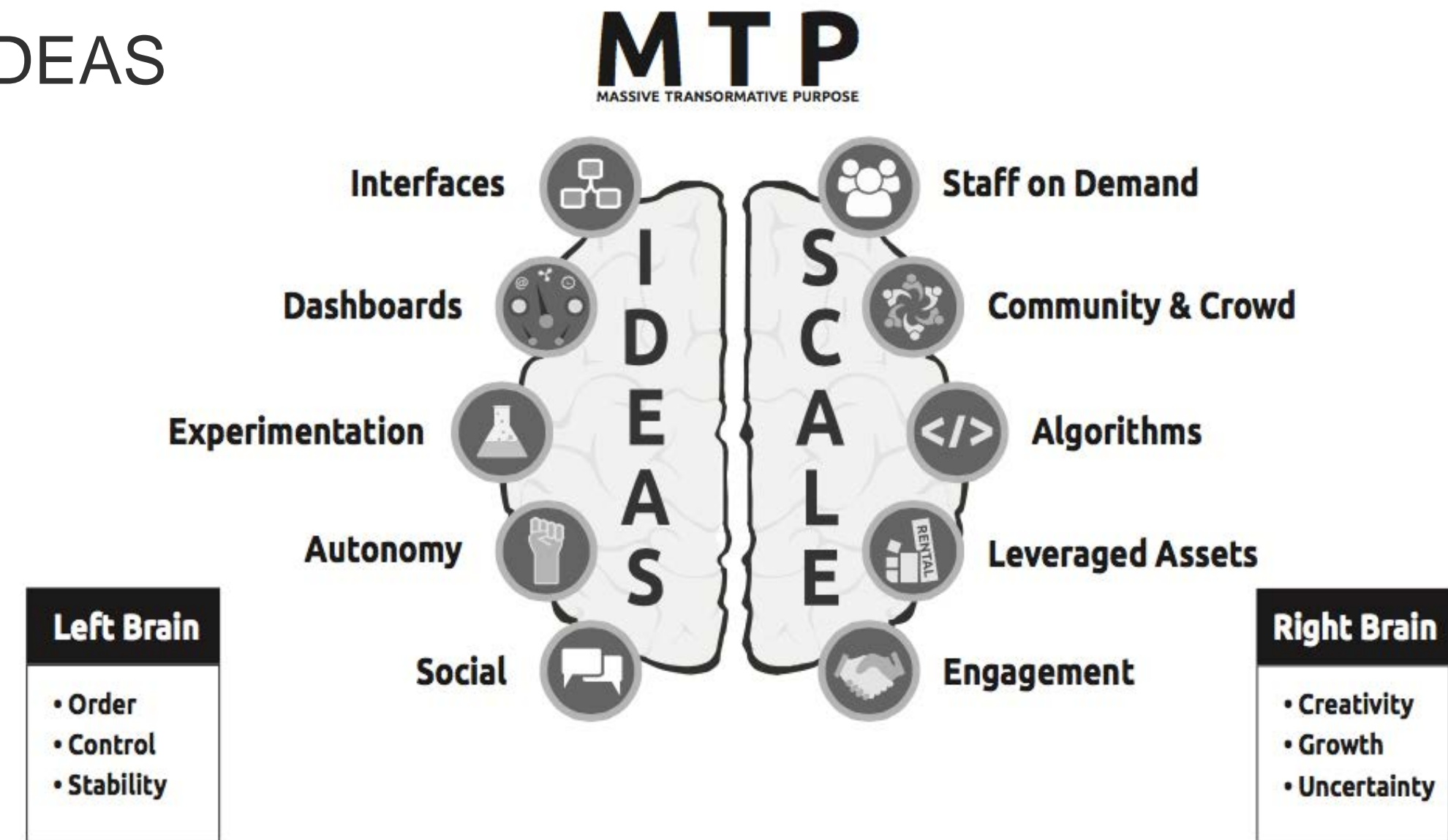


4 out of 10 = ExO



GitHub - 10 out of 10

- Highest rated ExO in Top 100 (76/84)
- Uses all of MTP + SCALE/IDEAS
- Founded 2008
- **Sold \$7.5bn**



Ranking the Fortune 100 by their ExO Score

f100.exponentialorgs.com

Yuri van Geest
Michiel Schuurman
ExO Experts



Exponential Quotient - Sample



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)

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

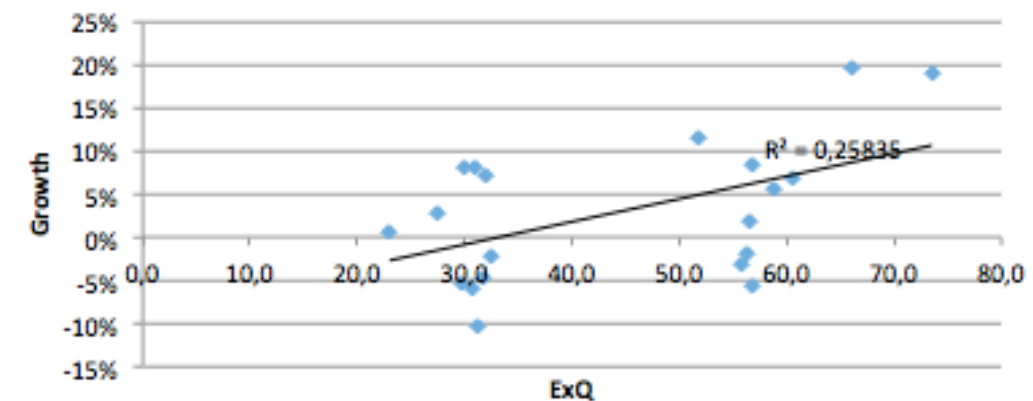
“ ExQ Score correlates to stock performance ”



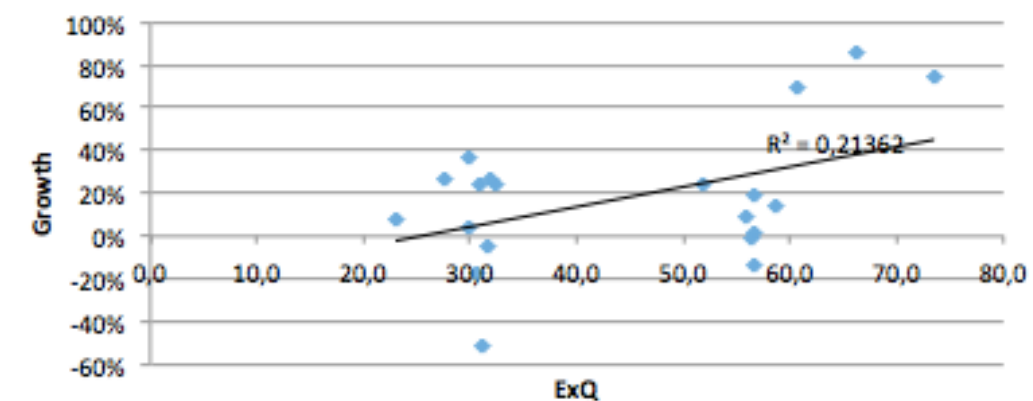
	Mean	Median	Min	Max	Top quartil	Bottom quartile
TOP 10	6%	6%	-6%	20%	11%	-1%
BOTTOM 10	0%	-1%	-10%	8%	6%	-5%

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

ExQ index vs 1yr Growth



ExQ index vs 1yr Growth



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%

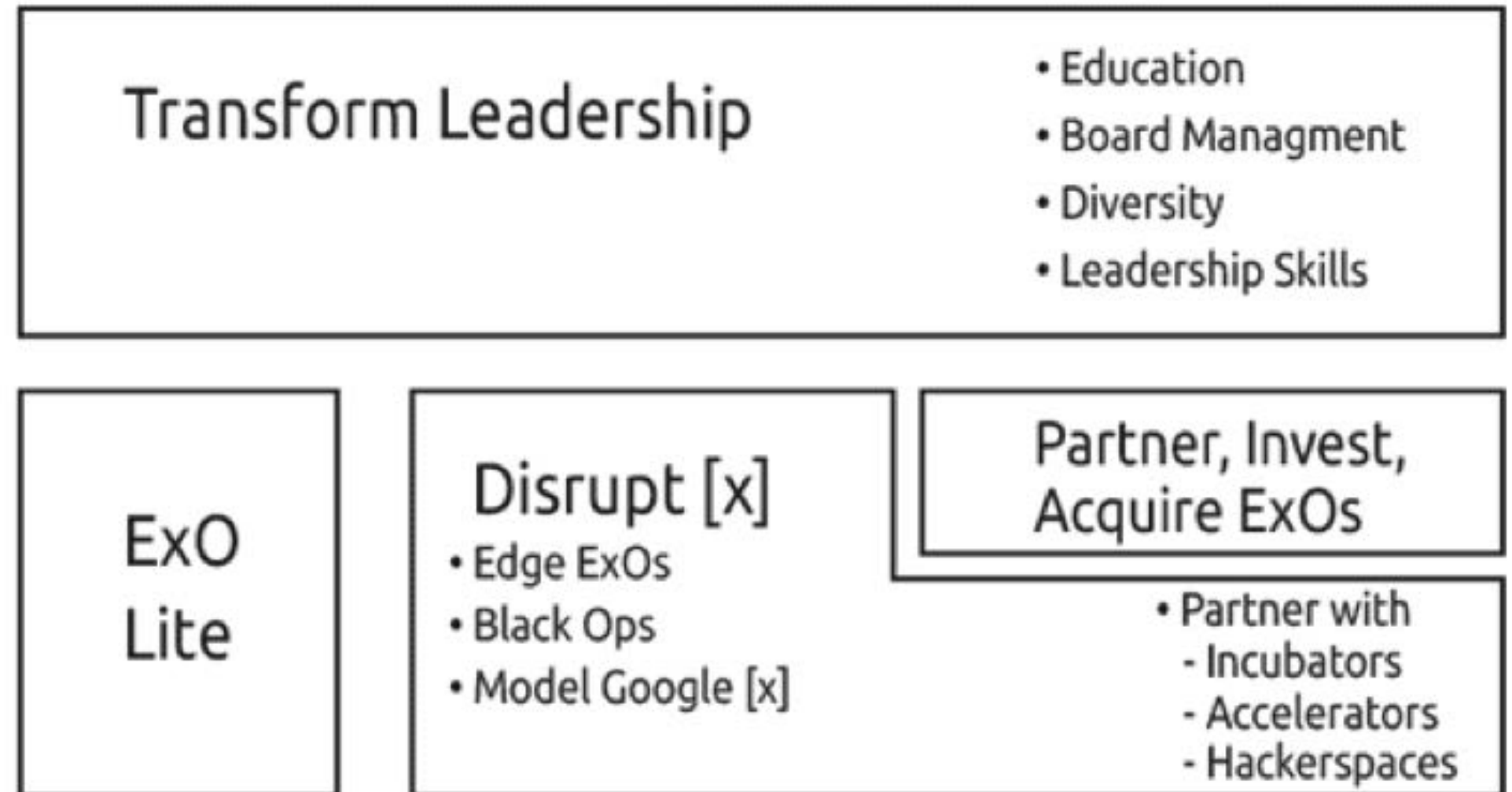
Bottom 10

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



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
- 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

Anecdotes..



The GrowRoom



NEWS

Corona beer owner to pour \$4bn into weed

16 August 2018

f [social icons] Share



PERSONAL PIZZA

Nestlé is using DNA to create personalized diets in Japan

By Chase Purdy · September 1, 2018

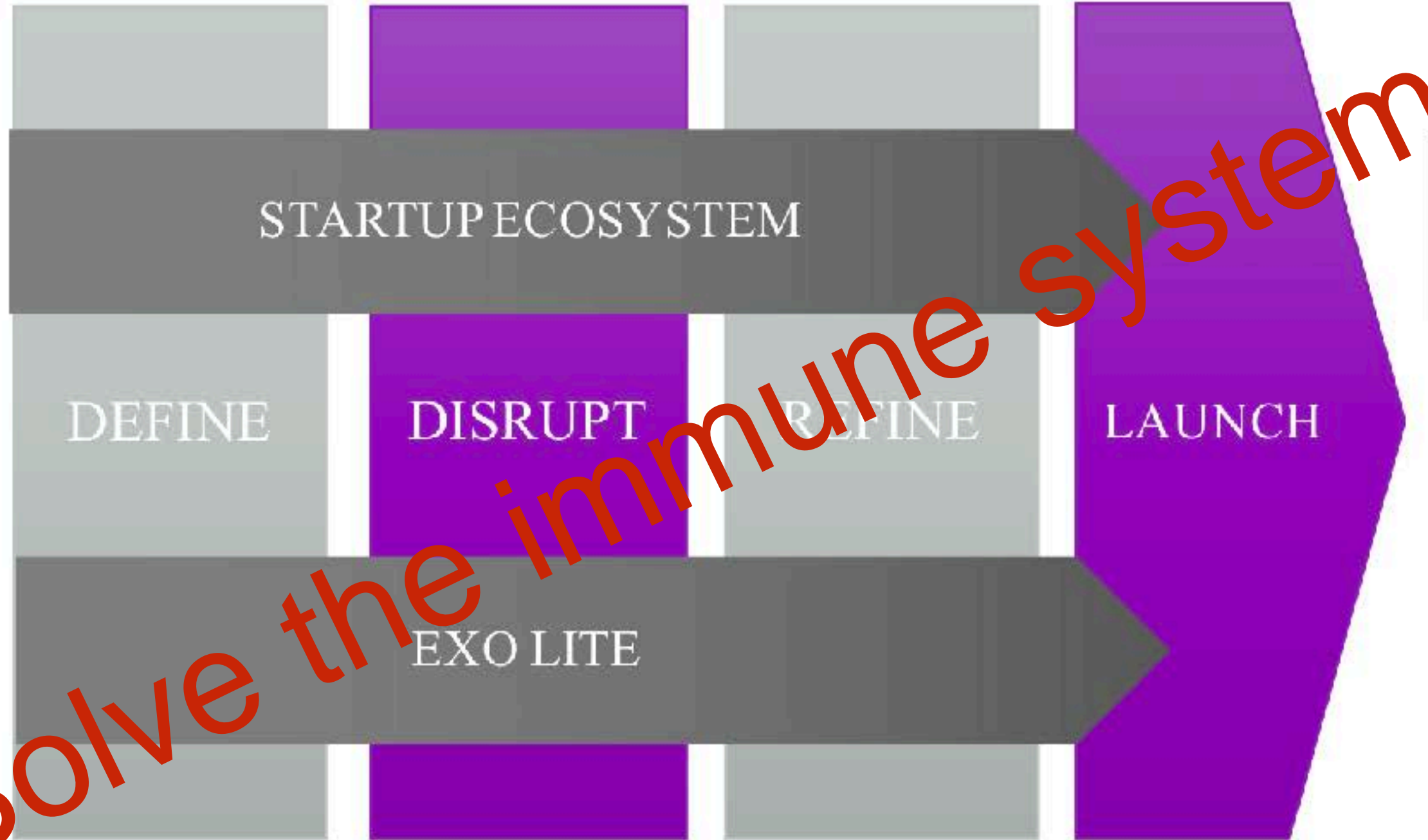


ExO Sprint



AWAKE

ASSESS



EXO ON THE EDGE INITIATIVES

EXO INTERNAL INITIATIVES



KICK OFF

WEEK 1-4

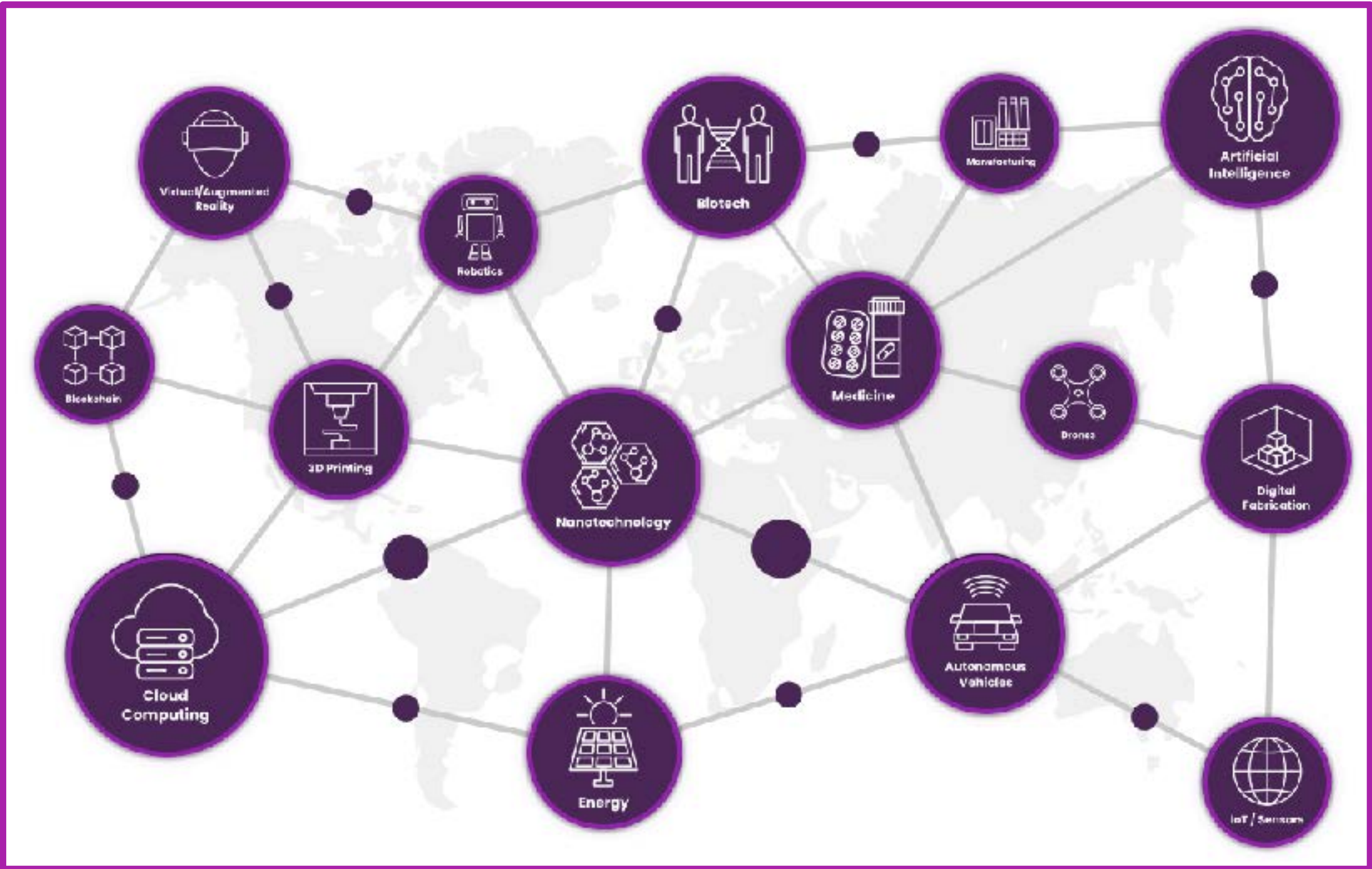
WEEK 5

WEEK 6-9

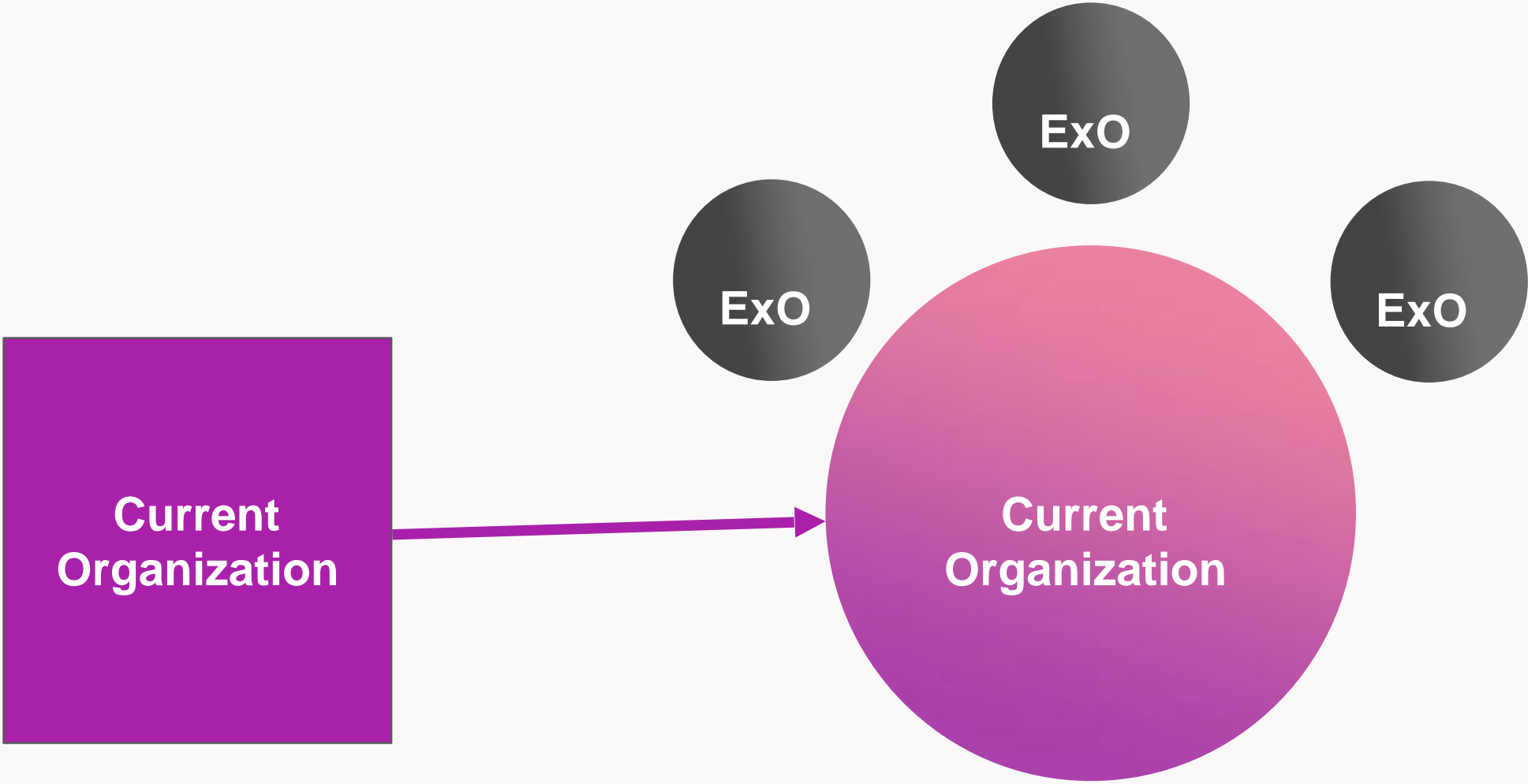
WEEK 10

OUTCOMES

ExO's Global Ecosystem

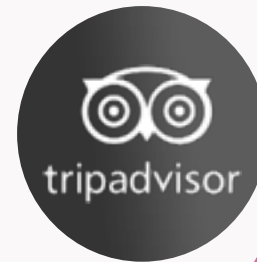


500 thought leaders, investors and entrepreneurs in 35 countries





\$41 billion



\$100 billion



Current
Organization



Cross-Industry Client Base

 **accenture**

**Boston
Scientific**



 **COTEMINAS®**

 **Sareb**

VISA

هيئة كهرباء ومياه دبي
Dubai Electricity & Water Authority



Rassini

 **Ameritrade**

**Stanley
Black &
Decker**

P&G

 **iKe
Asistencia®**





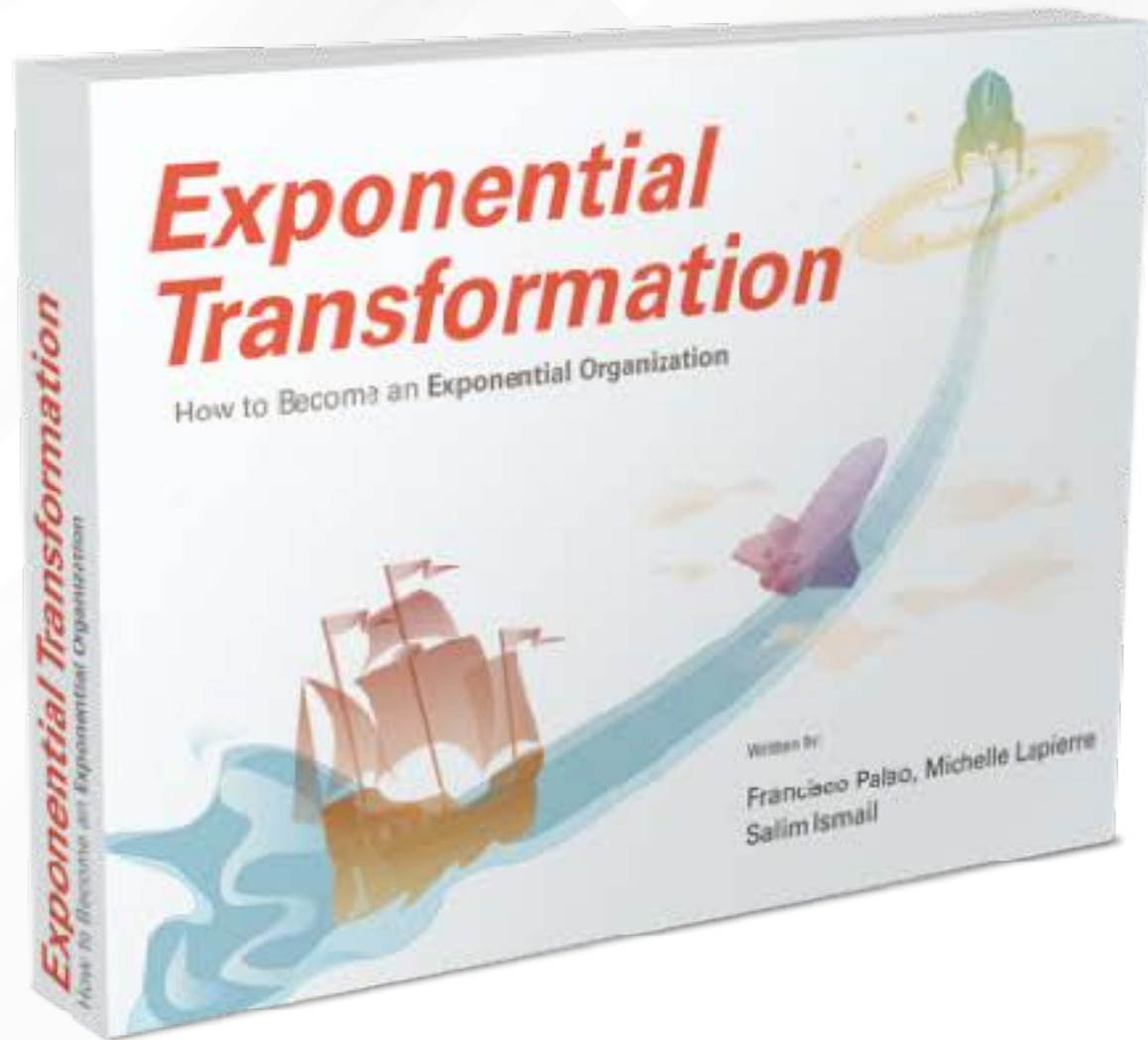
Procter&Gamble

- Launched 25 initiatives in four years on a tiny budget by focusing on “freeing our employees for free”
- 8 projects on track to deliver \$50+ million in value or 10X lift in customer satisfaction



Doubled revenues
Tripled profits

Open Sourcing the ExO Sprint





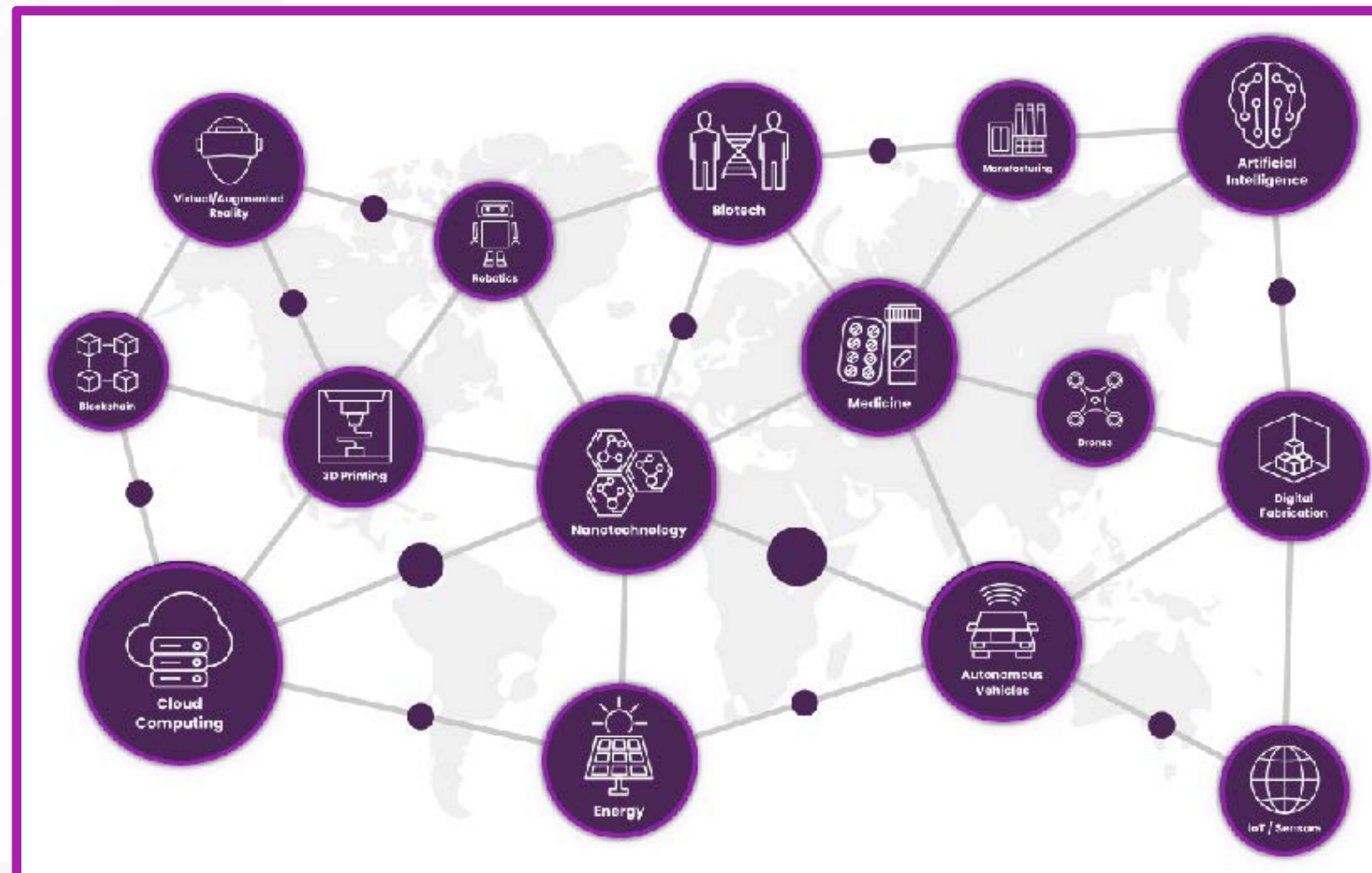
FASTTRACKINSTITUTE
Accelerating Technology into Society



exo works



FASTRACK INSTITUTE
Accelerating Technology into Society



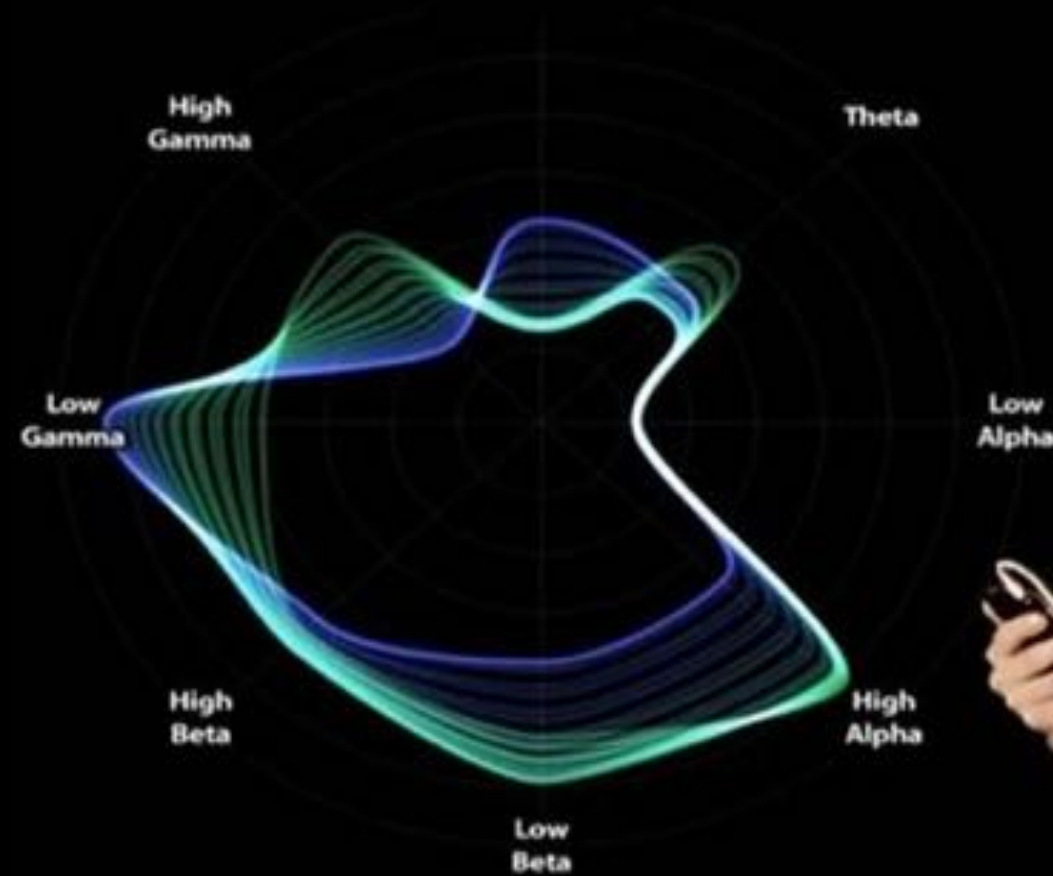
Exponential Thailand

- Digitize government and industry (leverage doubling patterns)
- Exponential Manufacturing (May 15/16th)
- Run Fastrack Sprints in key areas (tourism, agriculture)
- Create a community of exponential change agents
- Transform education



Brain interface (Neuro)

NeuroSky Mindwave



ADVANCED

VIEW HEADSET

MARKER



EXIT



alpha
7-13 Hz



beta
13-30 Hz



- ALPHA
- BETA
- DELTA
- THETA

3DEPOC VIEW

mouse

- ORBIT: DRAG WITH LEFT MOUSE BUTTON
- ZOOM: ROLL MIDDLE MOUSE WHEEL

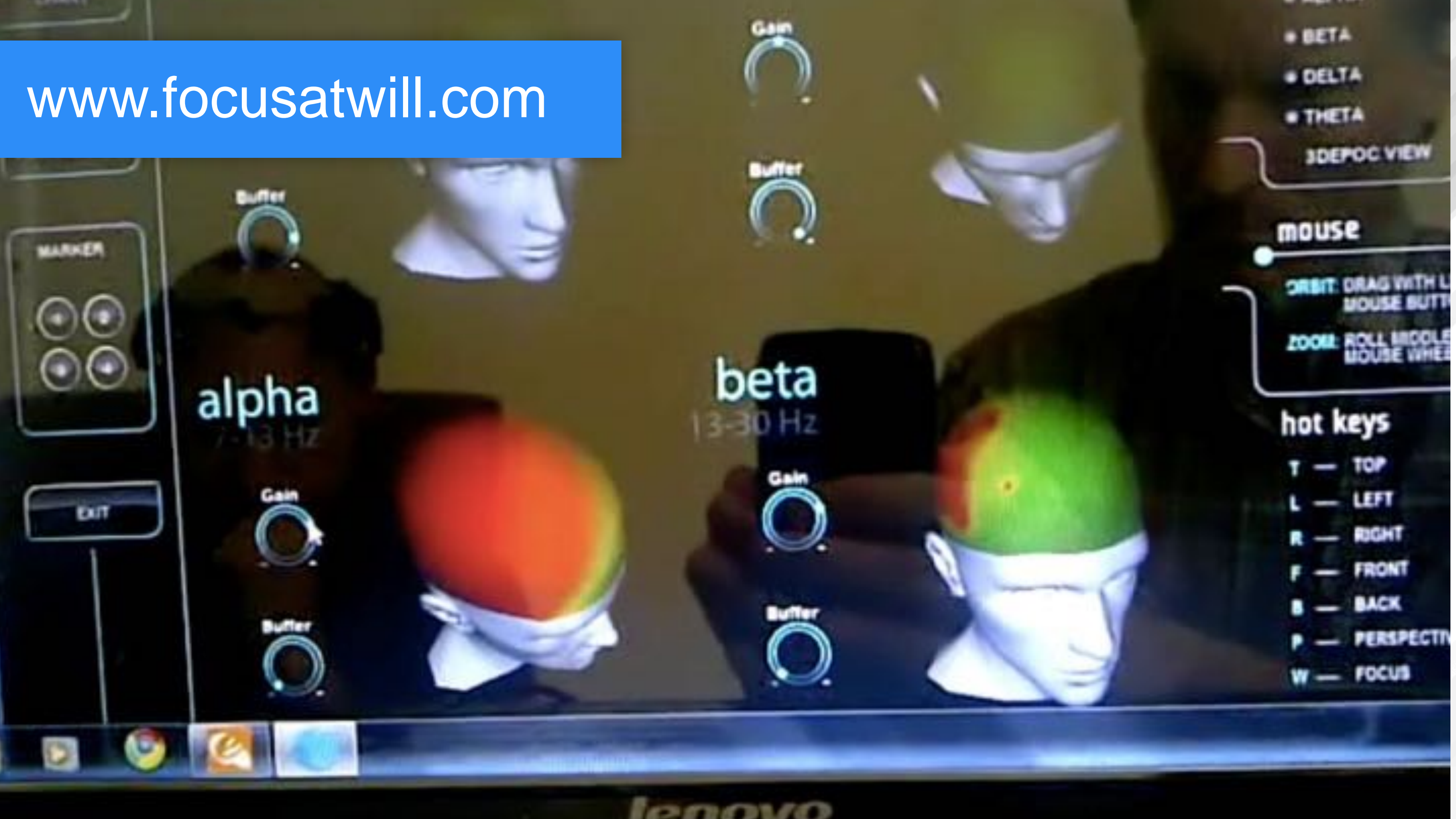
hot keys

- T — TOP
- L — LEFT
- R — RIGHT
- F — FRONT
- B — BACK
- P — PERSPECTIVE
- W — FOCUS



lenovo

www.focusatwill.com



alpha
7-13 Hz

beta
13-30 Hz

MOUSE

ORBIT: DRAG WITH L
MOUSE BUTT
ZOOM: ROLL MIDDLE
MOUSE WHEEL

hot keys

T — TOP
L — LEFT
R — RIGHT
F — FRONT
B — BACK
P — PERSPECTIVE
W — FOCUS

lenovo

EXPONENTIAL DISRUPTION

Information Layers



New Breakthroughs

Digitize
Disrupt
Demonetize
Democratize

