salesforce

6 LIGHT YEARS

WISE 1049-5319
(distance 2013)

4 LIGHT YEARS

Alpha Centauri
(distance 1839)
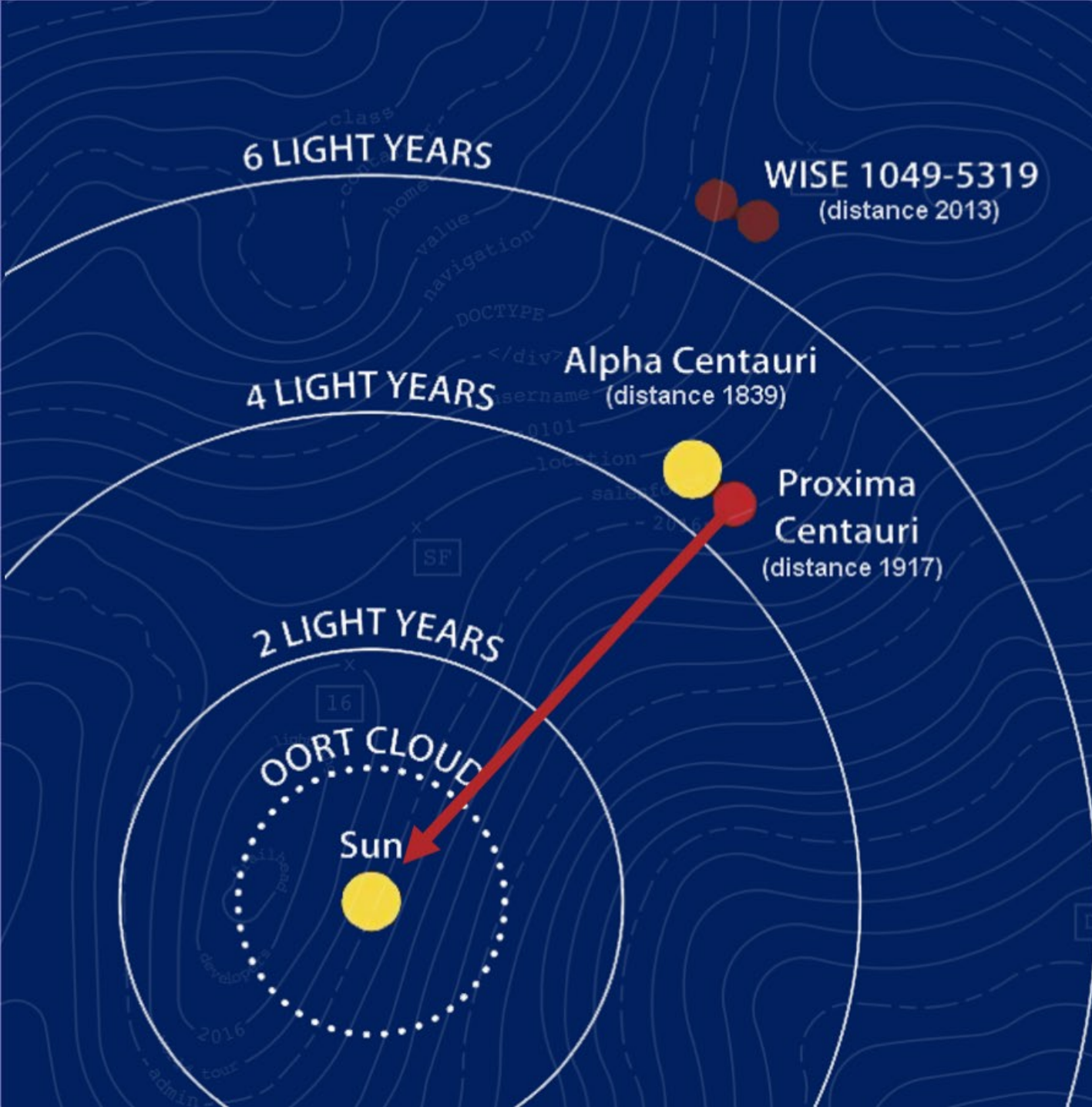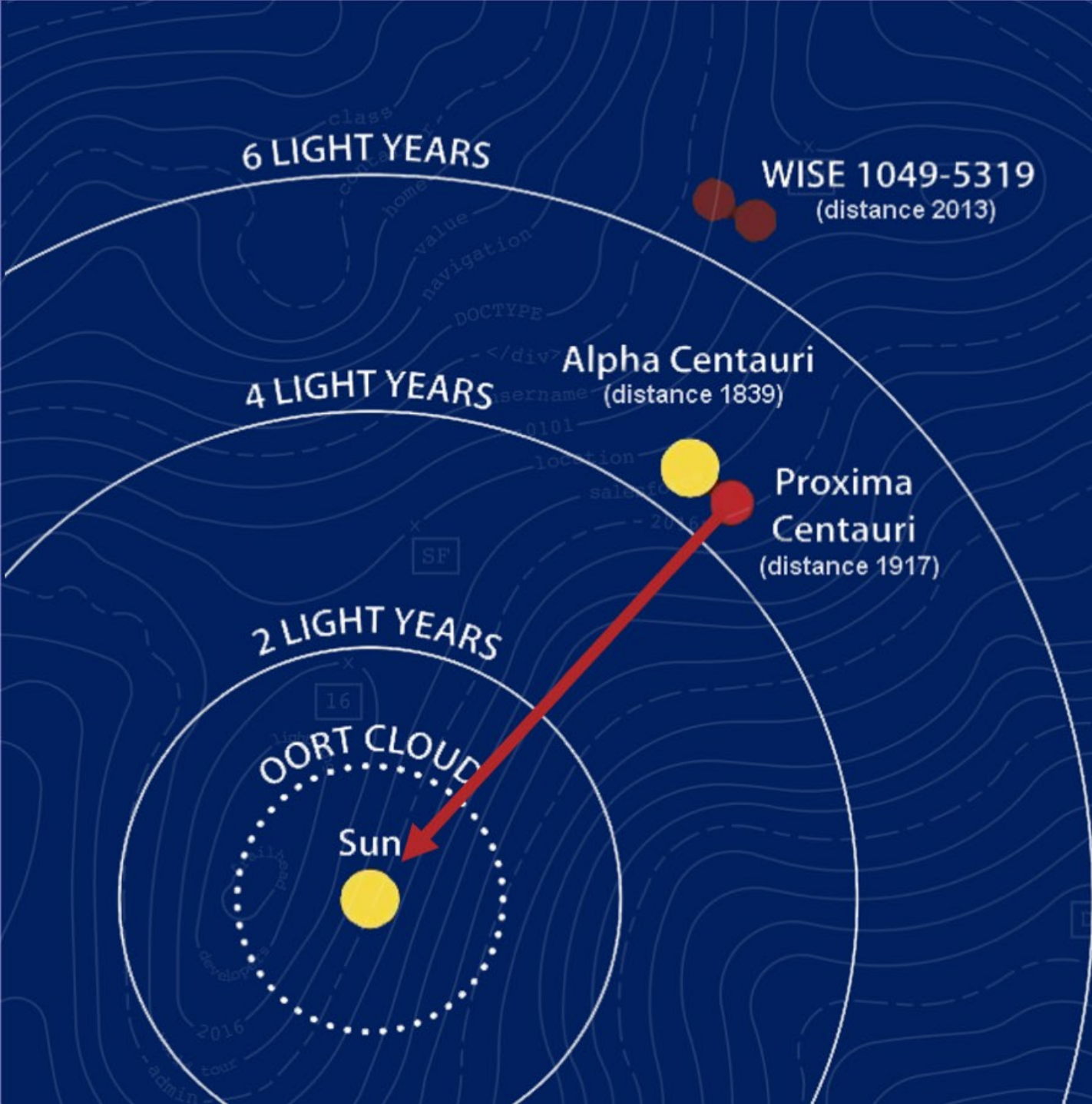
Proxima
Centauri
(distance 1917)

2 LIGHT YEARS

OORT CLOUD

Sun

On March 26, 2018, some photons left the star Proxima Centauri at 1:21 a.m. (Pacific Time).

They'll hit the surface of Earth as we finish tonight.

Salesforce Strategic Research

We Don't Predict. We Reveal.

"The Future" Is What We Do Tomorrow

Nobody cares how hard it is – they want *the outcome, not the artifact*

Peter Coffee – VP for Strategic Research, Salesforce

@pcoffee – pcoffee@salesforce.com

aitp association of information technology professionals los angeles

Never confuse what you sell with what people are buying

People *don't* buy "*technology.*"
They tolerate it.
They *pay* for an act of time travel: spend now for gain later

What is "later" *worth* vs. "now"?

Well, that depends.

Post-GFC capital glut propelled technology adoption

We show that the decrease in the relative price of investment goods, often attributed to advances in information technology and the computer age, induced firms to shift away from labor and toward capital.

The lower price of investment goods explains roughly half of the observed decline in the labor share, even when we allow for other mechanisms influencing factor shares such as increasing profits, capital-augmenting technology growth, and the changing skill composition of the labor force.

The Global Decline of the Labor Share, 2013
Loukas Karabarbounis and Brent Neiman

ABSTRACT

The stability of the labor share of income is a key foundation in macroeconomic models. We document, however, that the global labor share has significantly declined since the early 1980s, with the decline occurring within the large majority of countries and industries. We show that the decrease in the relative price of investment goods, often attributed to advances in information technology and the computer age, induced firms to shift away from labor and toward capital. The lower price of investment goods explains roughly half of the observed decline in the labor share, even when we allow for other mechanisms influencing factor shares such as increasing profits, capital-augmenting technology growth, and the changing skill composition of the labor force. We highlight the implications of this explanation for welfare and macroeconomic dynamics.

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Technology propelled economics from regional to global

Figure 3.3 illustrates that the geographical maritime distance only has a small statistical correlation with freight costs. More than the geographical distance, **it may be rather the economical distance, as for example captured by shipping connectivity and a country's position within global shipping networks, that emerges as the relevant factor** for international transport costs.
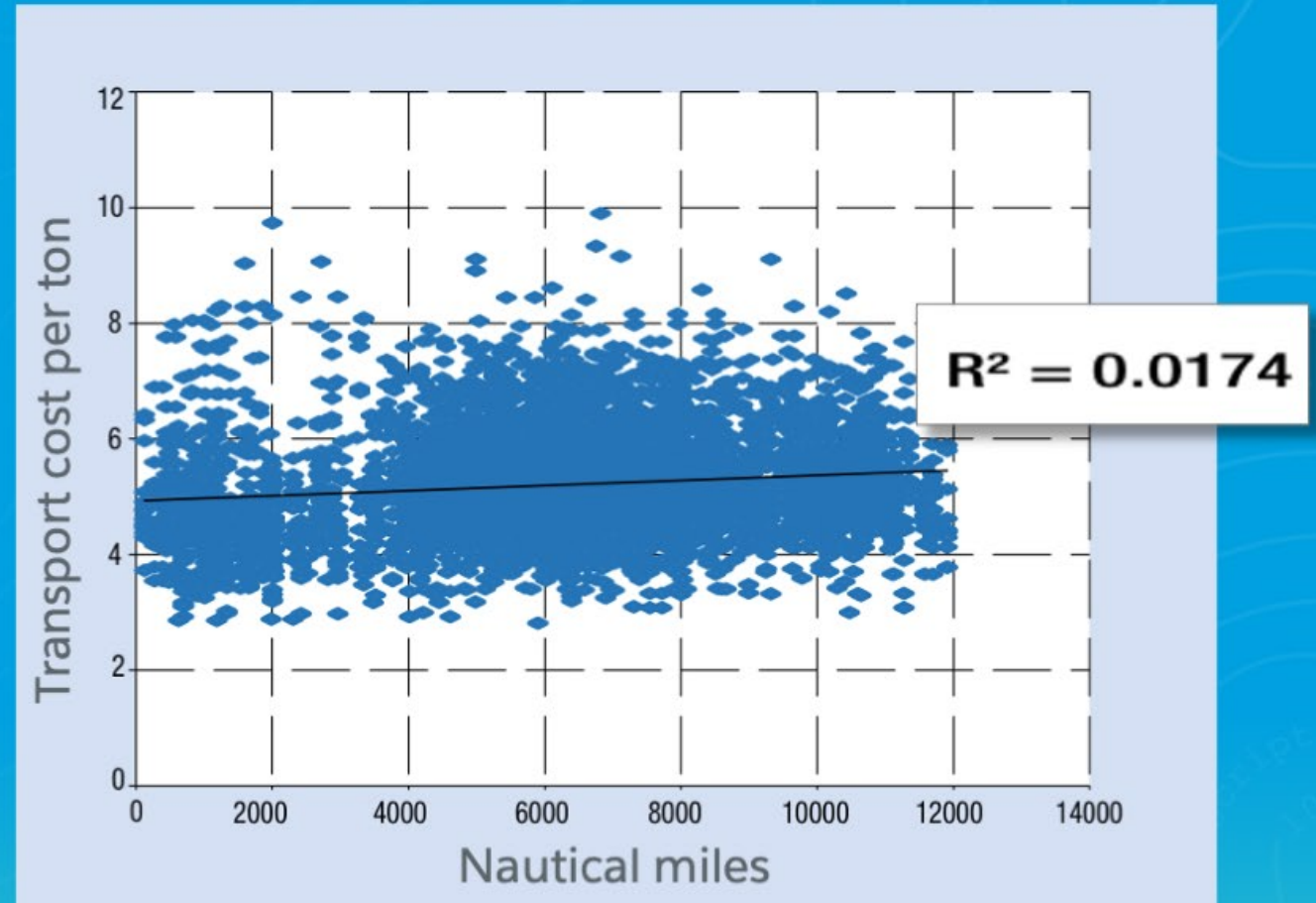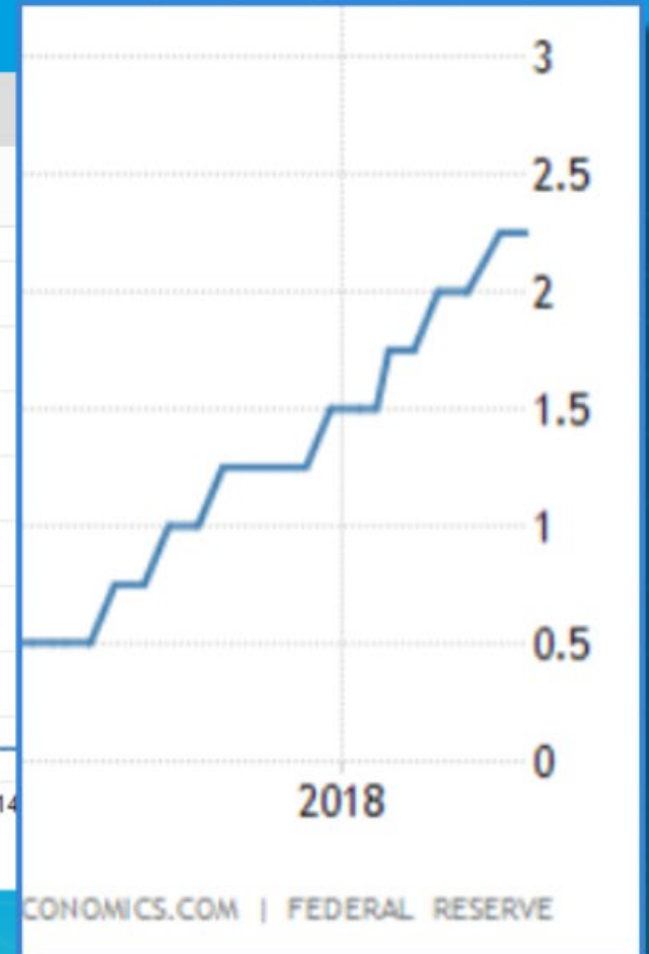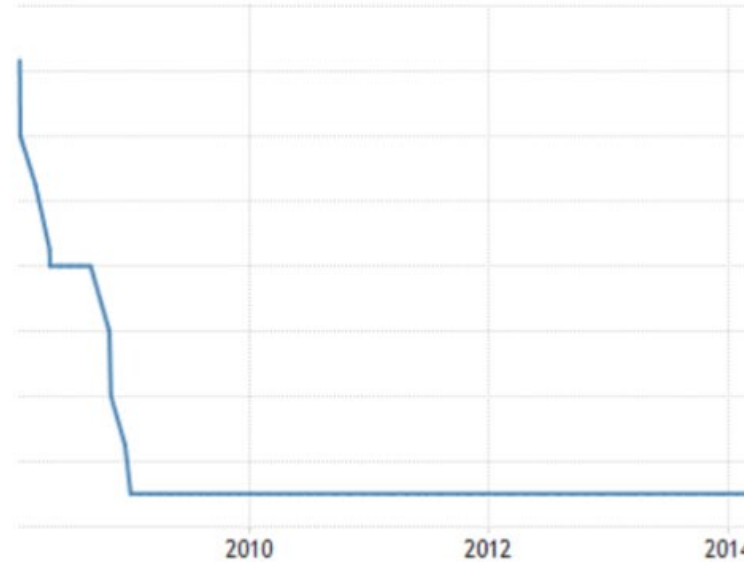
We *thought* cost of capital was returning to normal...in 2018

"We're at the end of a cycle, where **we have to move from focus on capital return towards productivity.**"

- Steen Jakobsen, chief investment officer, Saxo Bank

United States Fed Funds Rate

Summary   Calendar   Forecast   ⬇ Download

2010   2012   2014

3
2.5
2
1.5
1
0.5
0

2018

CONOMICS.COM | FEDERAL RESERVE

It *didn't* happen then – but is it happening now?

"Unit labor costs increased over the past four quarters by 7.2%, the biggest gain since the third quarter of 1982." (BLS 5 May 2022)

United States Fed Funds Rate

TRADING ECONOMICS

TRADINGECONOMICS.COM | FEDERAL RESERVE
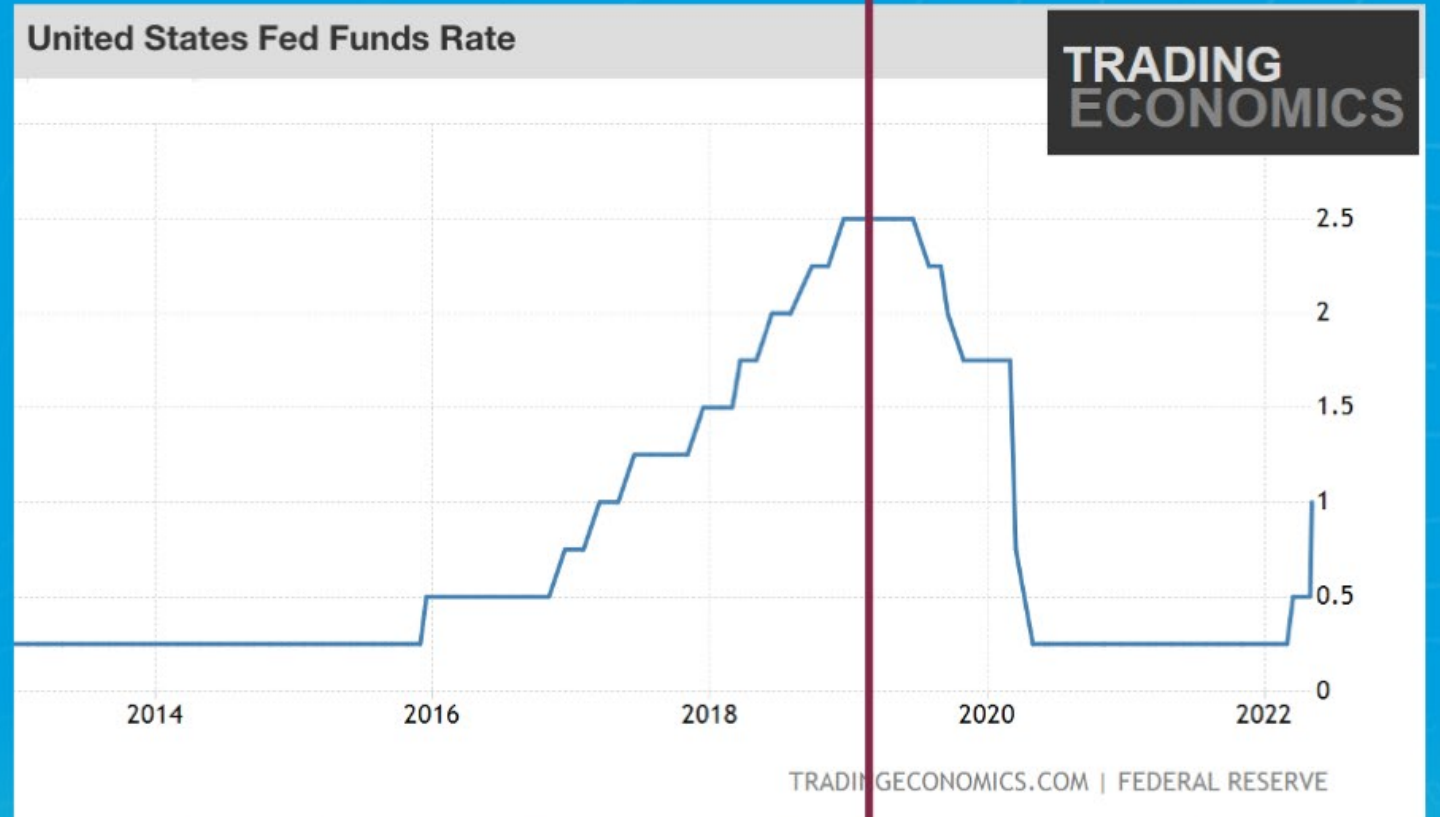
Rising capital cost + rising wages → demand for **productivity growth?**

Does anyone here remember how we did this in 1990?
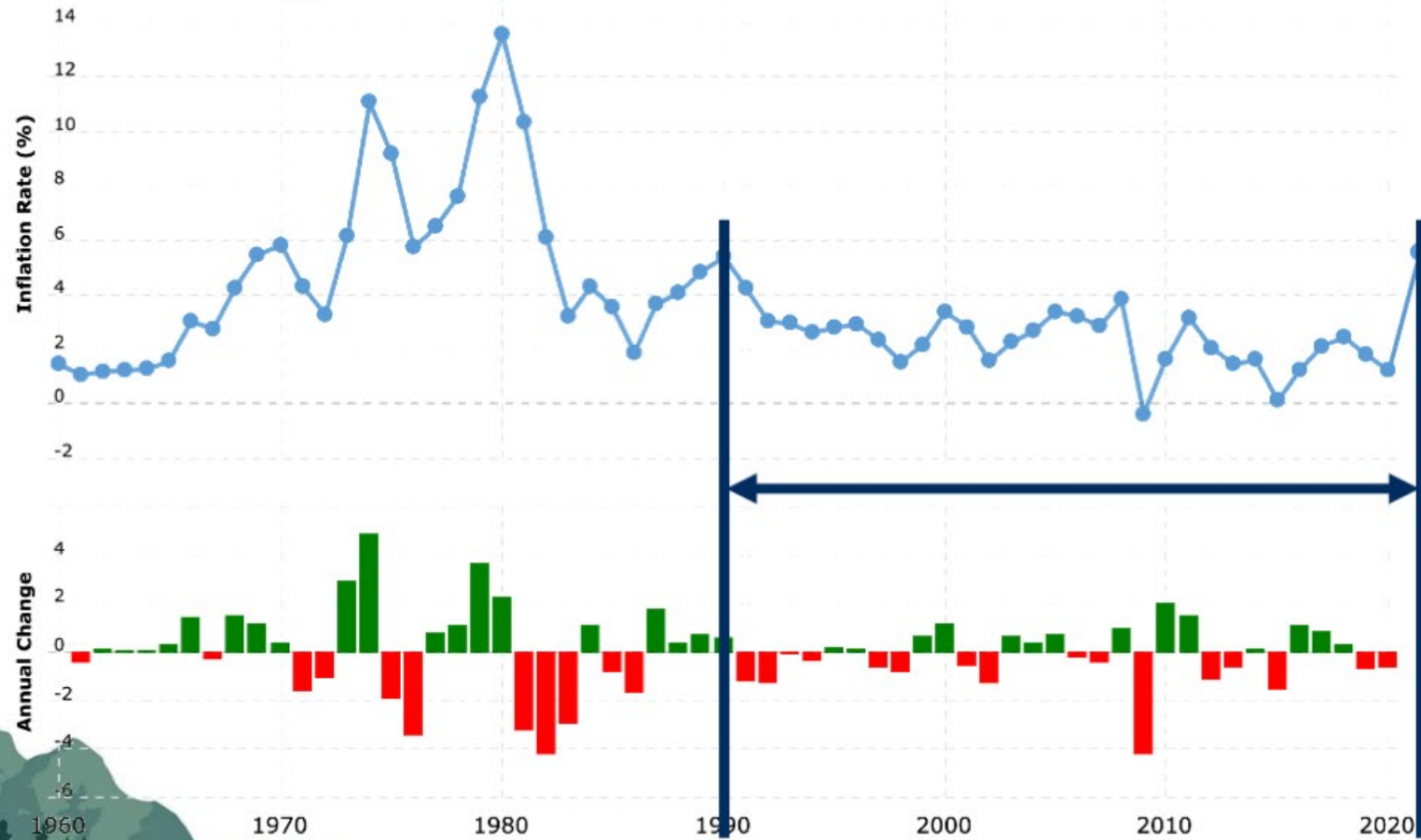
"War-induced commodity price increases and broadening price pressures have led to 2022 inflation projections of 5.7 percent in advanced economies and 8.7 percent in emerging market and developing economies."

– International Monetary Fund
World Economic Outlook
April 2022

Peter Coffee
@petercoffee

"The current concatenation of problems…may be the most serious [global economic] crisis of them all, not least because central banks can't print wheat and gasoline."

foreignpolicy.com
Why This Global Economic Crisis Is Different
This is the first time since World War II that there may be no cooperative way out.

11:50 AM · Jun 21, 2022 · Twitter Web App

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The past two years were a warmup act

Disruption is becoming more frequent and more severe.

No segment or sector can be a mere spectator

Estimated greenhouse-gas (GHG) emissions in a 1.5°C scenario, metric gigatons of CO_2 equivalents[1] per year
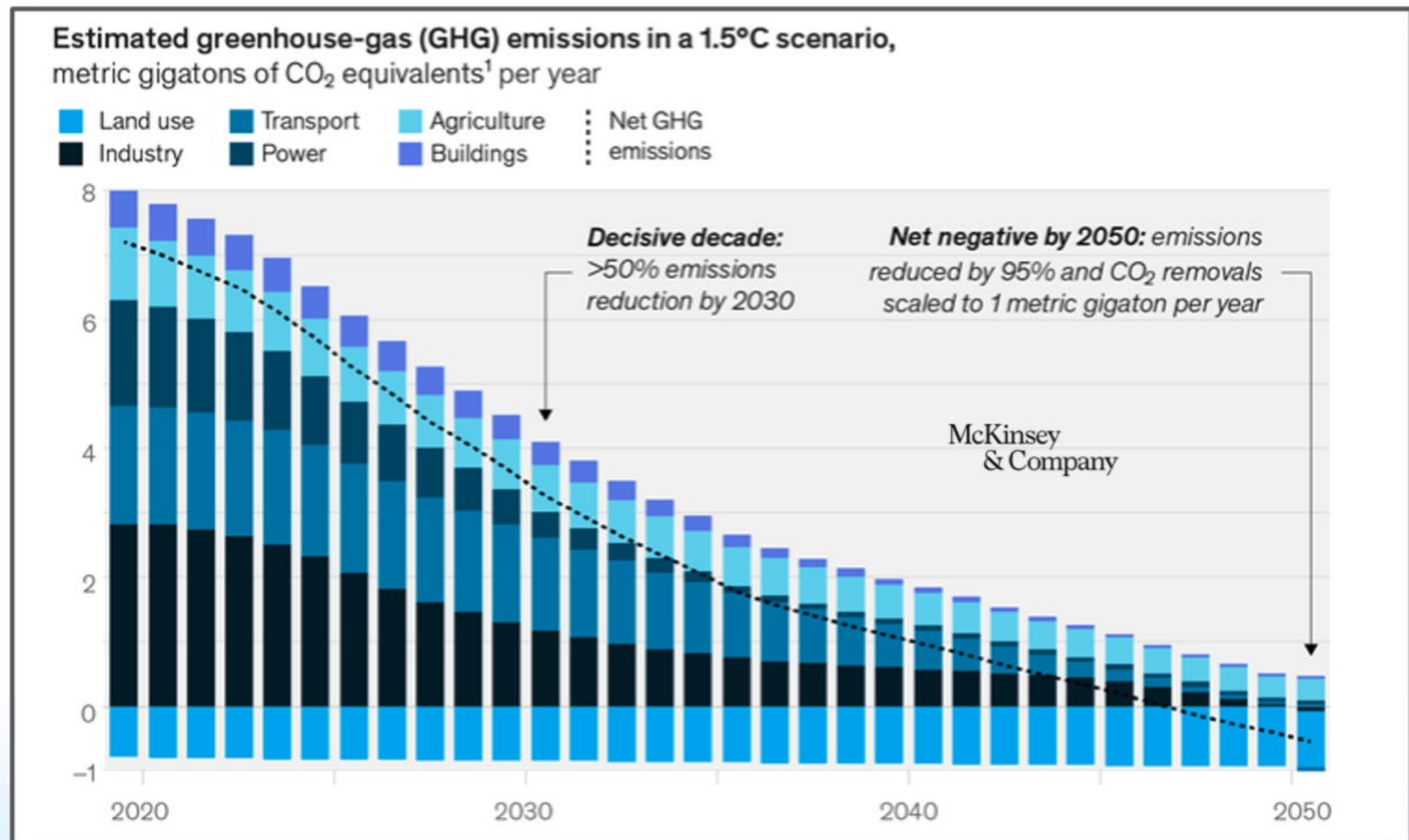
The cadence of innovation must accelerate

Organizations with world-class digital capabilities release and refresh digital applications much faster than competitors.

		Traditional	Leading	World-class	Why it matters
	Time to market	**1–2** years	**2–6** months	**8–12** weeks	To compete for consumers on the basis of new tech functionality
	Release frequency	**1–4** per year	**1–4** per month	**10–50** per day	To test and refine the customer experience

McKinsey & Company

Rapidly evolving environments require agile designs

If we spend two
years deciding
the dimensions
of a pyramid...
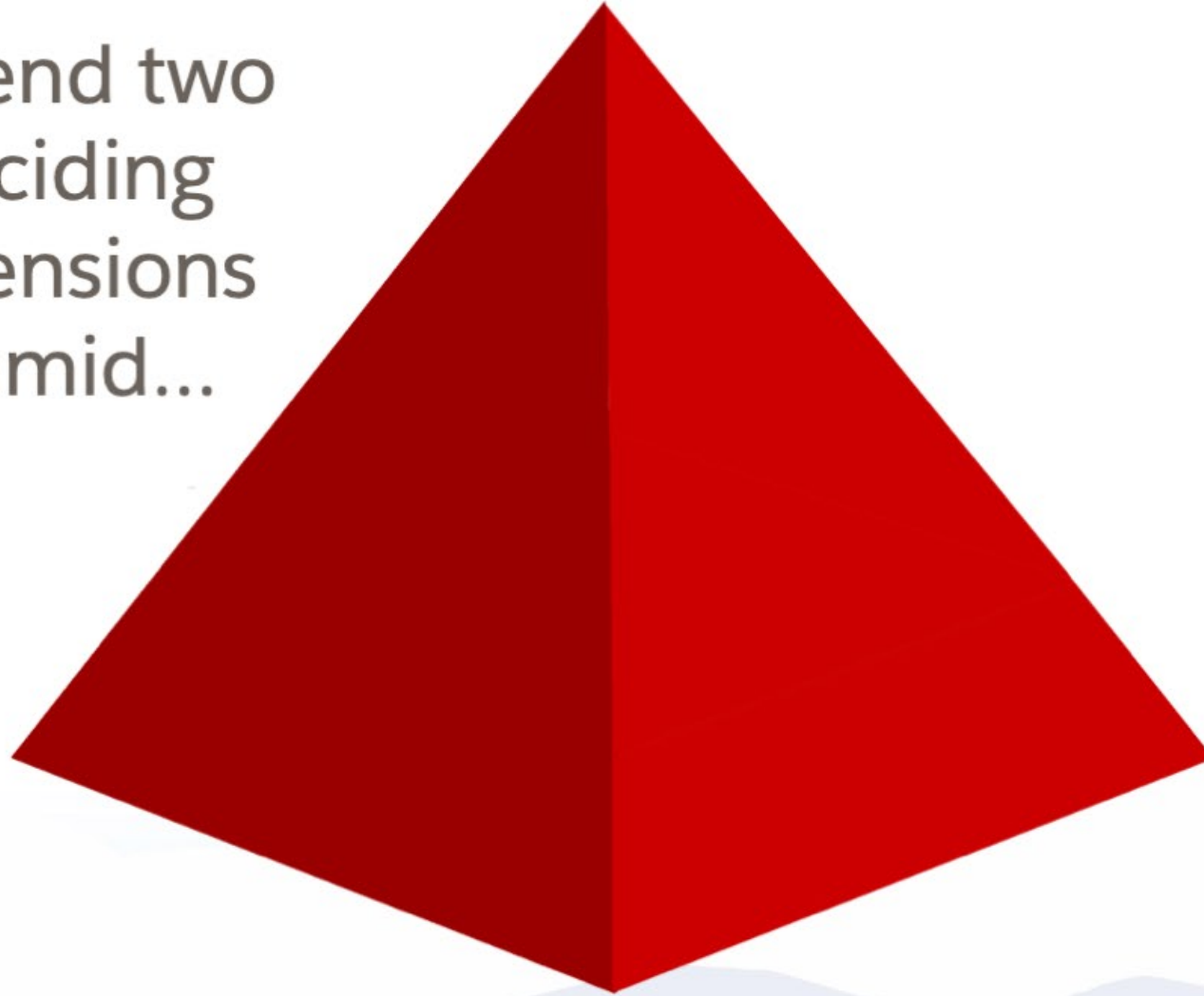
Rapidly evolving environments require agile designs

If we spend two years deciding the dimensions of a pyramid...

...it gets awkward to change our minds as soon as we've barely started
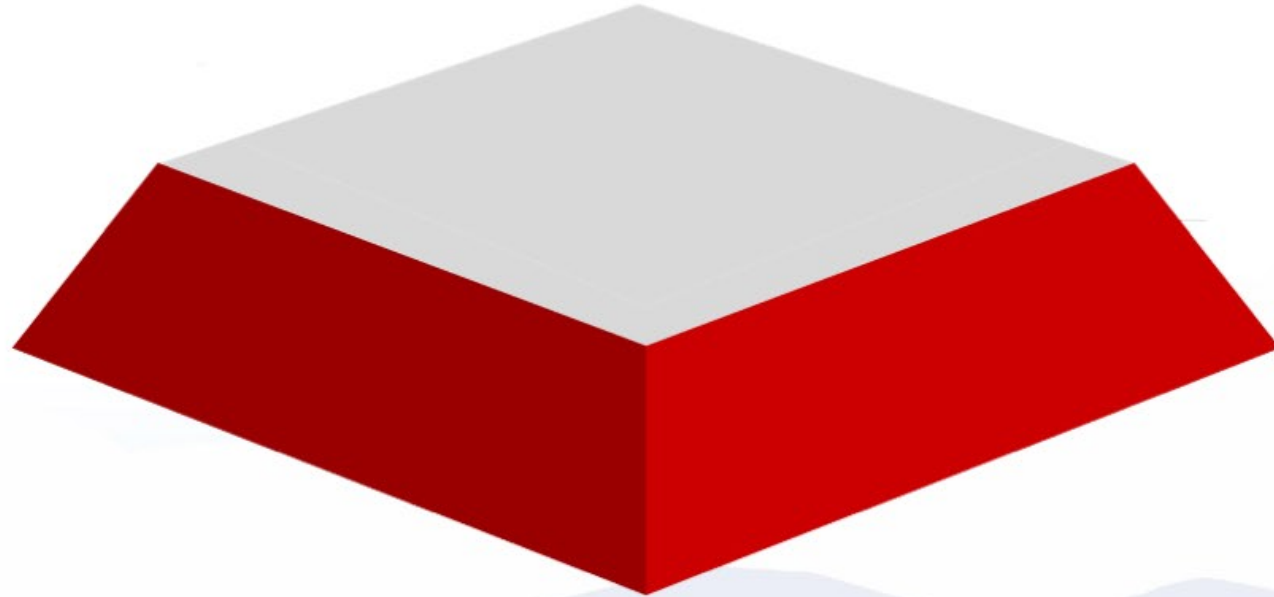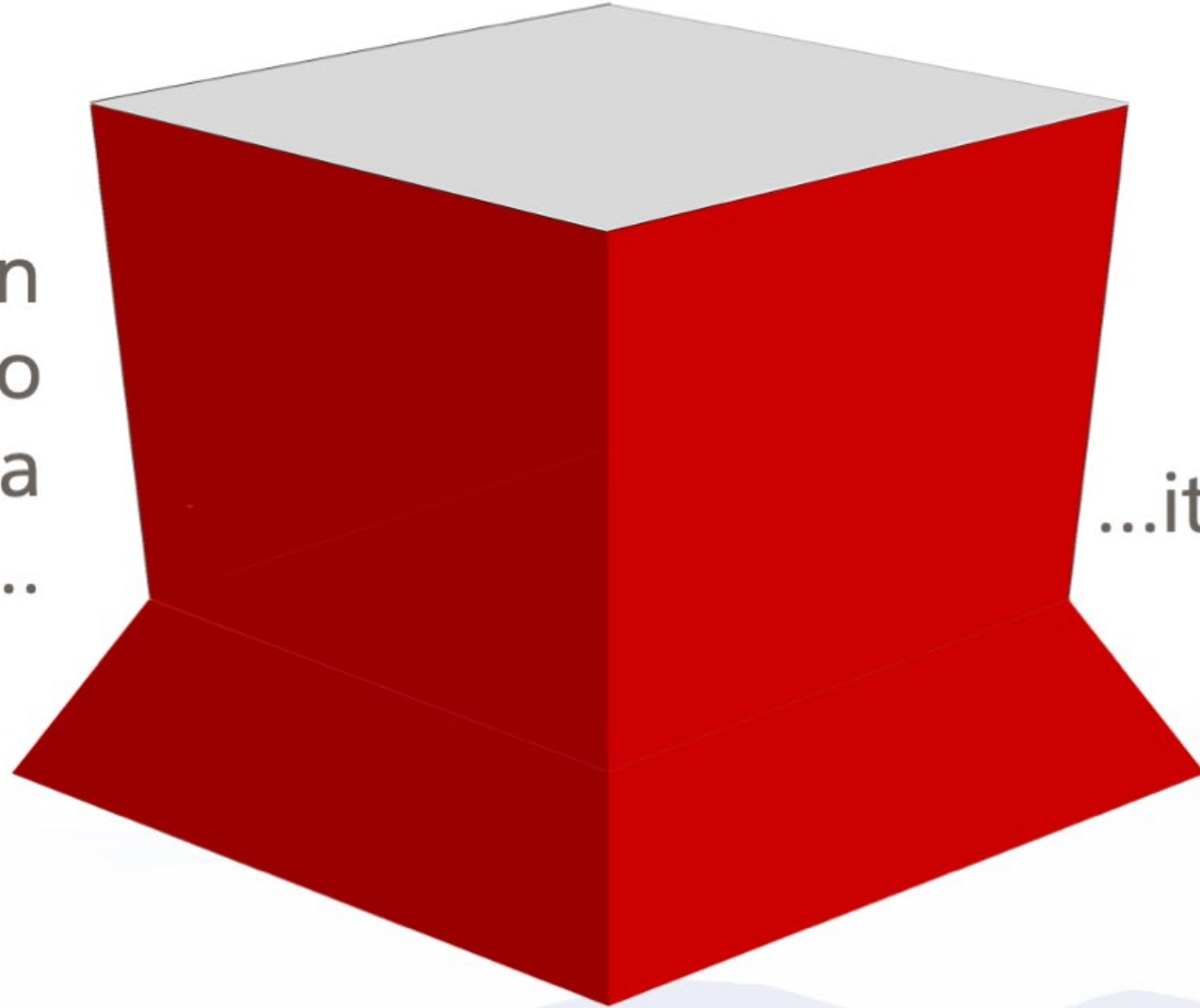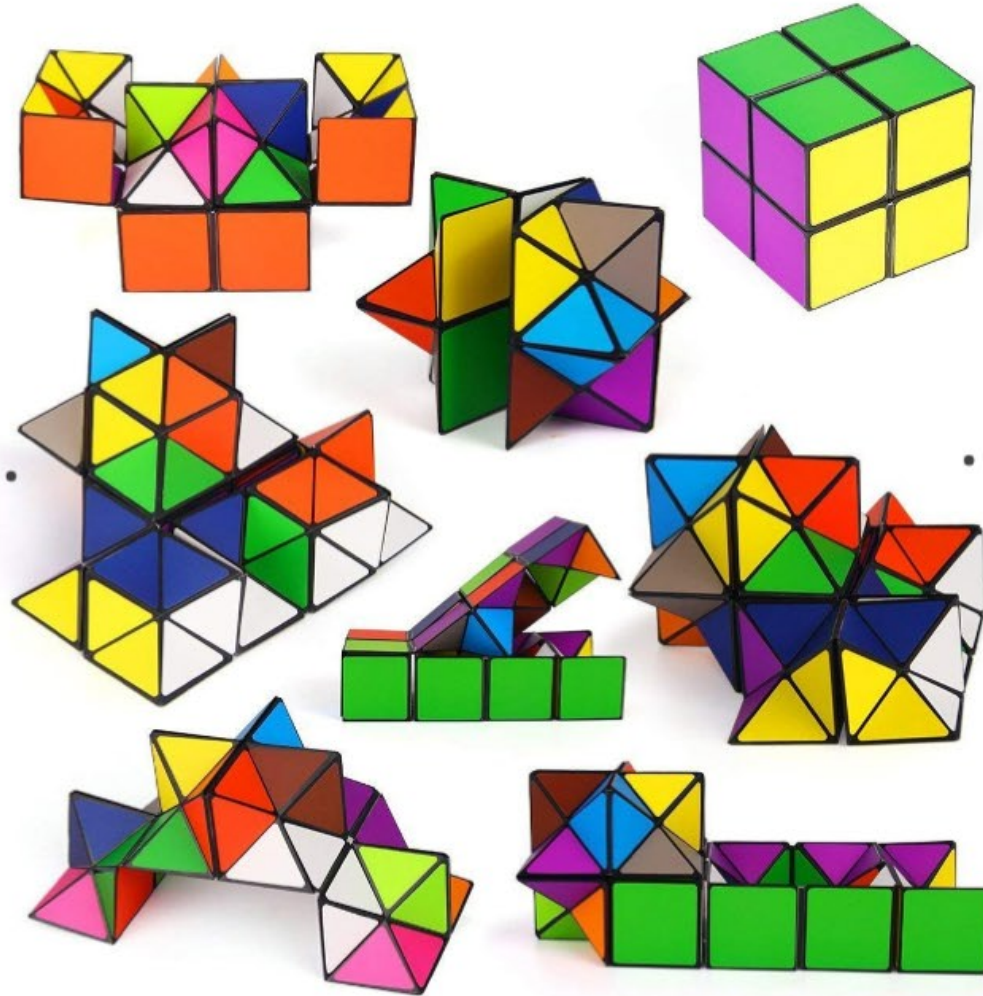
Metaverse is an environment, not any one technology

Peter Coffee
@petercoffee

"⅔ of respondents…would be excited to engage in a digital experience with favorite brands. Over ½ of people who attend virtual lifestyle & luxury events report positive shift in brand perception. We are only at the beginning of the metaverse…"

mckinsey.com
Probing reality and myth in the metaverse
Despite some skepticism, our recent insights show that Americans of all ages are ready to embrace the metaverse.

12:36 PM · Jun 21, 2022 · Twitter Web App

Metaverse: Theme Mentions in Earnings Call Transcripts and Number of Companies (Q1 2016 – Q1 2022)
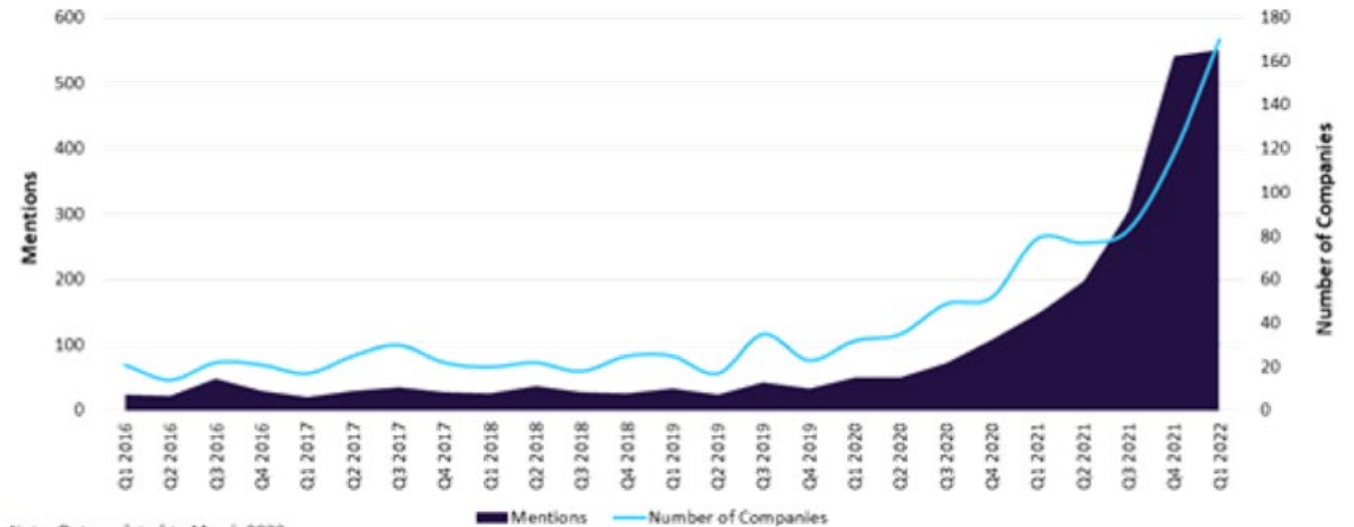
Note: Data updated to March 2022

Source: GlobalData Filing Analytics Database; Disruptor Intelligence Center

GlobalData.

Metaverse is an environment, not any one technology

Of the Gartner "Top Technology Trends for 2022," **is there even one of these that is *not* a crucial enabler for a metaverse?**

Something that does for the walled gardens of VR and AR what the Web did for the walled gardens of CompuServe and AOL?

Something that represents and facilitates our health, wealth, education, recreation, livelihood, and other institutions and processes?

Top Strategic Technology Trends for 2022

- Data Fabric
- Cybersecurity Mesh
- Privacy-Enhancing Computation
- Cloud-Native Platforms
- Composable Applications
- Decision Intelligence
- Hyperautomation
- AI Engineering
- Distributed Enterprise
- Total Experience
- Autonomic Systems
- Generative AI

Gartner.

Metaverse/"Web3" are a new stage of shared space

Pre-Web – Internet of addresses:
You had to know where something was to request it

"World Wide Web" – Internet of searchable pages:
You could discover, consume, and link it

"Web 2.0" – Internet of interactive content:
You could engage, respond, and extend it – but payments and other transactions required separate legacy systems

"Web3" – Internet of ownership and trust:
Distributed ledgers enable shared-truth capabilities; virtual and augmented realities become **interoperable** and mutually **discoverable** spaces, rather than separate "walled gardens"

Data fabrics?

The **Zettabyte* Era** is a period of human and computer science history that started in the mid-2010s. It is estimated that **in 2012, upwards of 1 zettabyte** of data existed in the world; **in 2020, more than 40 zettabytes**.

– en.wikipedia.org/wiki/Zettabyte_Era

*10^{21} bytes

Data fabrics: because *knowing* is harder than "thinking"

"**Data quality matters**. The team used an off-the-shelf algorithm to do image segmentation and object detection, but to get the AI to classify those objects it had to develop a bespoke dataset: **millions of images of things that float in the sea**, from buoys to boats to crab pots, taken in all kinds of weather and lighting conditions, to train it."

NEWSLETTERS · EYE ON A.I.

What an autonomous ship named Mayflower can teach us about building better A.I.

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When people won't read, the machine now can. And will.

Salesforce Research leads worldwide performance on Dynamic Coattention Networks

A SQuAD-like question answering example:

In 2004, Obama received national attention during his campaign to represent Illinois in the U.S. Senate with his victory in the March Democratic Party primary, his keynote address at the Democratic National Convention in July, and his election to the Senate in November.

"When was Obama's keynote address?"

July

"Where was the keynote address?"

Democratic National Convention

salesforce

When people just don't see, the machine now can. And will.

Salesforce AI helps brands track images on social media

Posted Aug 8, 2017 by Ron Miller (@ron_miller)

Brands have long been able to search for company mentions on social media, but they've lacked the ability to search for pictures of their logos or products in an easy way. That's where Salesforce's latest Einstein artificial intelligence feature comes into play.

Today the company introduced Einstein Vision for Social Studio, which provides a way for marketers to search for pictures related to their brands on social media in the same way they search for other mentions. The product takes advantage of a couple of Einstein artificial intelligence algorithms including Einstein Image Classification for image recognition. It uses visual search, brand detection and product identification. It also makes use of Einstein Object Detection to recognize objects within images including the type and quantity of object.

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The product takes advantage of a couple of Einstein artificial intelligence algorithms including Einstein Image Classification for image recognition. It uses visual search, brand detection and product identification.

It also makes use of Einstein Object Detection to recognize objects within images including the type and quantity of object.

techcrunch.com/2017/08/08/salesforce-using-ai-to-find-brand-images-on-social-media/

All the calculus in the world can't optimize based on garbage

Harvard Business Review
ANALYTICS

A Refresher on Statistical Significance

by Amy Gallo

FEBRUARY 16, 2016

When you run an experiment or analyze data, you want to know if your findings are "significant." But business relevance (i.e., practical significance) isn't always the same thing as confidence that a result isn't due purely to chance (i.e., statistical significance). This is an important distinction; unfortunately, **statistical significance** is often misunderstood and misused in organizations today. And yet because more and more companies are relying on data to make critical business decisions, it's an essential concept for managers to understand.

distinction; unfortunately, **statistical significance** is often misunderstood and misused in organizations today. And yet because more and more companies are relying on data to make critical business decisions, it's an essential concept for managers to understand.

Data = "a thing given": connection·protection → action

How Walmart Canada Uses Blockchain to Solve Supply-Chain Challenges

by Kate Vitasek, John Bayliss, Loudon Owen, and Neeraj Srivastava

January 05, 2022
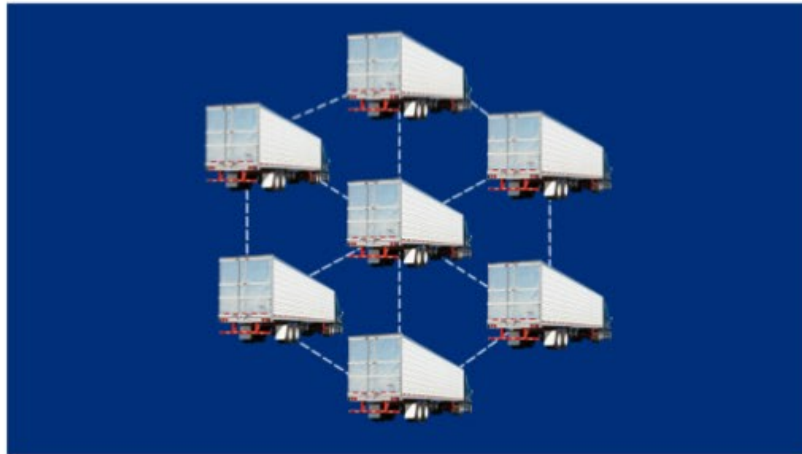
HBR Staff/ryasick/Getty Images

Harvard Business Review

PaymentsJournal

"After two years of exhaustive testing, the system went live across the Walmart Canada logistics network and delivered immediate benefits by **reducing the amount of disputed invoices from 70% to 1%**."

Distributed ledgers give us resilient, distributed peer-to-peer systems and ability to interact with peers in a trustless, auditable manner.

Smart contracts allow us to automate complex multi-step processes. We get to automate time-consuming workflows in new ways, achieving cryptographic verifiability, as well as significant cost and time savings in the process.

www.icertis.com/blog/blockchain-smart-contracts-will-change-contract-management-2018/

Quantum models are already informing new strategies

salesforce

Peter Coffee
@petercoffee

"Canadian grocery chain Save-On-Foods has become an unlikely pioneer, using quantum technology to improve the management of in-store logistics...reducing the computing time for some tasks from 25 hours per week down to mere seconds."

BUSINESS-CRITICAL GROCERY TASKS
IN MINUTES INSTEAD OF HOURS

save on foods

"What Advantage gives us, is the ability to seamlessly integrate quantum into our business problems. We've been able to decrease the amount of time to get a result from 25 hours down to seconds."

—ANDREW DONAHER, VP DIGITAL & ANALYTICS, SAVE-ON-FOODS

<2 MINUTES

25 HOURS TO < 2 MINUTES
4K COMBINATIONS & 4M VARIABLES

D:WAVE

4:34 PM

"Save-On-Foods approached D-Wave with a logistics problem that classical computers were incapable of solving. **Within two months, the concept had translated into a hybrid quantum algorithm** that was running in one of the supermarket stores, reducing the computing time for some tasks from 25 hours per week down to mere seconds.

"'**We now have the capability to run tests and simulations** by adjusting variables and see the results, so **we can optimize performance**, which simply isn't feasible using traditional methods,' a Save-On-Foods spokesperson tells ZDNet."

www.zdnet.com/article/quantum-computers-are-coming-get-ready-for-them-to-change-everything/

Quantum delivery? Pending

salesforce

Peter Coffee
@petercoffee

"Companies with quantum processors have increased the power of their hardware dramatically over the past several years, from just a handful of qubits to over a hundred in the case of IBM, which expects to deliver a 4,158-qubit system by 2025."
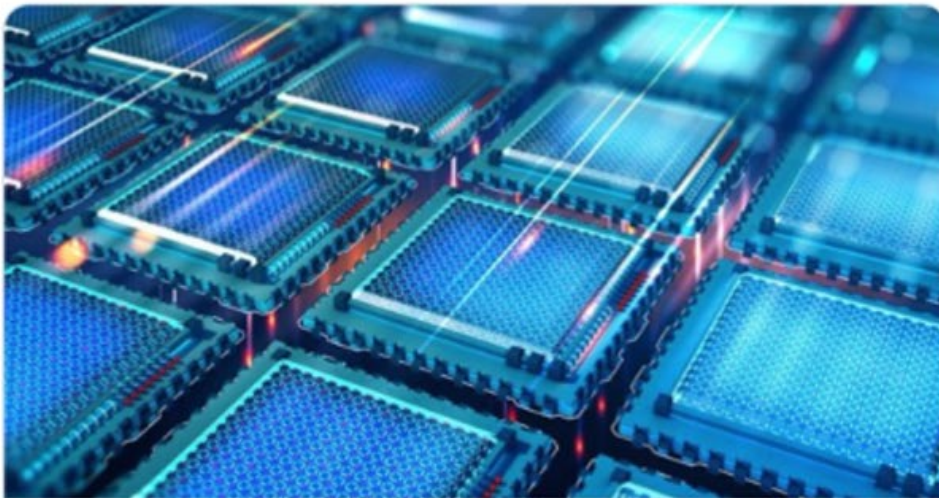
theregister.com
Business braces for quantum computing disruption by 2030
As one expert warns overhype will lead to QC winter. Plus: Mystery Huawei quantum patent surfaces

9:06 AM · Jun 17, 2022 · Twitter for iPad

Who could create value with quantum computing?

Distribution of quantum-computing use cases, 2019, %

Estimated value at stake[1]

High   Medium   Low

Near term		Medium term	Long term
28	Finance	●	●
16	Global energy and materials	●	●
11	Advanced industries	●	●
9	Pharmaceuticals and medical products	◕	●
9	Telecom, media, and technology	◕	◑
7	Public/social sector, professional services	◕	◕
6	Healthcare systems, services	●	●
6	Travel, transport, and logistics	◑	◑
4	Insurance	◕	◑
3	Consumer goods	◕	◕

PQC (post-quantum crypto) is already a thing

Peter Coffee
@petercoffee

Replying to @petercoffee

"If adequate implementation of PQC has not taken place by the time capable quantum computers are developed, it may become impossible to ensure secure authentication and communication privacy without major, disruptive changes to our infrastructure"

Securing Communications in the Quantum Computing Age
Quantum computers are expected to revolutionize computing. But hackers may be able to use them to crack the encryption system that protects all digital ...
🔗 rand.org

10:14 PM · Apr 13, 2020 · Twitter Web App

Peter Coffee
@petercoffee

Replying to @petercoffee

"Quantum computers…threaten to render modern encryption methods useless… Last week NIST short-listed fifteen [post-quantum crypto] contenders: five use lattice approaches that have no known quantum solution" (via @micki59806)

The quest for quantum-proof encryption just made a leap forward
Quantum computers could make encryption a thing of the past, but 15 contenders are trying to prove they have what it takes to safeguard your data.
🔗 technologyreview.com

7:23 AM · Aug 10, 2020 · Twitter Web App

Peter Coffee
@petercoffee

"The White House wants the US to migrate cryptographic systems to ones that are resistant to a 'cryptanalytically'-relevant quantum computer (CRQC), with the aim of 'mitigating as much of the quantum risk as is feasible' by 2035."

zdnet.com
White House: Quantum computers could crack encryption, so here's what we n...
Whoever wins the quantum computing race could undermine national security systems and the nation.

9:17 AM · May 6, 2022 · Twitter Web App

PQC (post-quantum crypto) is already a thing

MIT Technology Review ✔
@techreview

Hack now, decrypt later?

technologyreview.com
The US is worried that hackers are stealing data today so quantum computers ...
The US government is starting a generation-long battle against the threat next-generation computers pose to encryption.

9:07 PM · Jun 19, 2022 · SocialFlow

"Transitioning to new cryptography is a notoriously tricky and lengthy task, and one it's easy to ignore until it's too late. **It can be difficult to get for-profit organizations to spend on an abstract future threat years before that threat becomes reality**."

– Patrick Howell O'Neill
Cybersecurity Senior Editor
Technology Review

"If organizations aren't thinking about the transition now, and then they become overwhelmed by the time the NIST process has been completed and the sense of urgency is there, it increases the risk of accidental incidents... **Rushing any such transition is never a good idea**."

– Tim Maurer
Director for Technology and Democracy
National Security Council

This all requires game theory, not "debugging"

Game theory is "the study of mathematical models of conflict and cooperation between intelligent rational decision-makers."

- Incomplete information
- Active opponents

Machine intelligence assists new kinds of navigation

36TH AMERICA'S CUP

"Game-tree complexity describes the size of the space of possible game paths. Go, an extremely complex game, has a complexity of 170. **Our sailing problem has a game-tree complexity of nearly 2900**."

"Our team used deep reinforcement learning to teach the AI bot how to become a professional sailor. **Ultimately, there were a thousand bots running in parallel, learning from each other.**"

"The turning point came about eight weeks later: the bot started beating the sailors in the simulator. **Soon, the sailors were learning maneuvers from the bot.**"

It's not nice to be called "artificial"; risky to claim "intelligence"

Automate (and *autonomate*) - delegate low-value, high-attention tasks to machines

Predict - use machine learning and pattern recognition to **anticipate rather than react**

Plan - lay out a sequence of tasks in ways that maximize results at minimum cost

Recognize - **minimize false positives & negatives** in diagnosis and troubleshooting

Optimize - explore every corner of feasible regions **without preconception bias**

Protect - detect and address the **errors and oversights** that put data and processes at risk

Rationalize - streamline and simplify processes

Iterate - continually **review and refine** operations based on new data and analysis

Actuate - focus sensory input through customer-experience lenses: **differentiate & delight**

Trust - elevate from black-box mystery to **informative explanation** of results

Enlighten - don't replace people; rather, **augment them and empower them**

The "A" in "AI" must stand for "appropriate" (and "augmented")

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From "IT application" to customer conversation

AXA Business Insurance integrated Salesforce with communications and policy management: advisors can see at a glance who is calling, every policy they own, recent interactions, and feedback scores.

"Customers no longer have to repeat themselves. If they've had a negative experience, advisors can understand that and try to change their perception." - Darrell Sansom, Chief Customer & Innovation Officer

A "may need" dashboard enables advisors to highlight products that might interest customers – based on business type and associated risks.

Revolutions happen when scarcity ⇄ abundance

WIRED

GEORGE GILDER   12.01.1996 12:00 PM

The Gilder Paradigm

A new paradigm is emerging: it will transform the industry and the economy just as sharply as Moore's Law, when it caused the mainframe market to plunge from 100 percent to less than 1 percent of computer sales between 1977 and 1987. Since 1992, I have been developing this theory and showing the journey toward [...]

"Every economic era is based on a **key abundance** *and a* **key scarcity**.*"*

– George Gilder, 1996

"If you're doing things that
- *conserve what's now abundant...*
- *fail to notice what's gotten scarce...*
- *help people cope with a scarcity that no longer exists...*

...you're designing for a past era.

Don't expect compliments."

– Me, now

Abundant connection is a "future that's now"

Legend

- PoP supporting MPLS & IP
- PoP supporting MPLS, IP & VSAT
- PoP supporting MPLS & VSAT
- PoP supporting IP
- PoP supporting MPLS
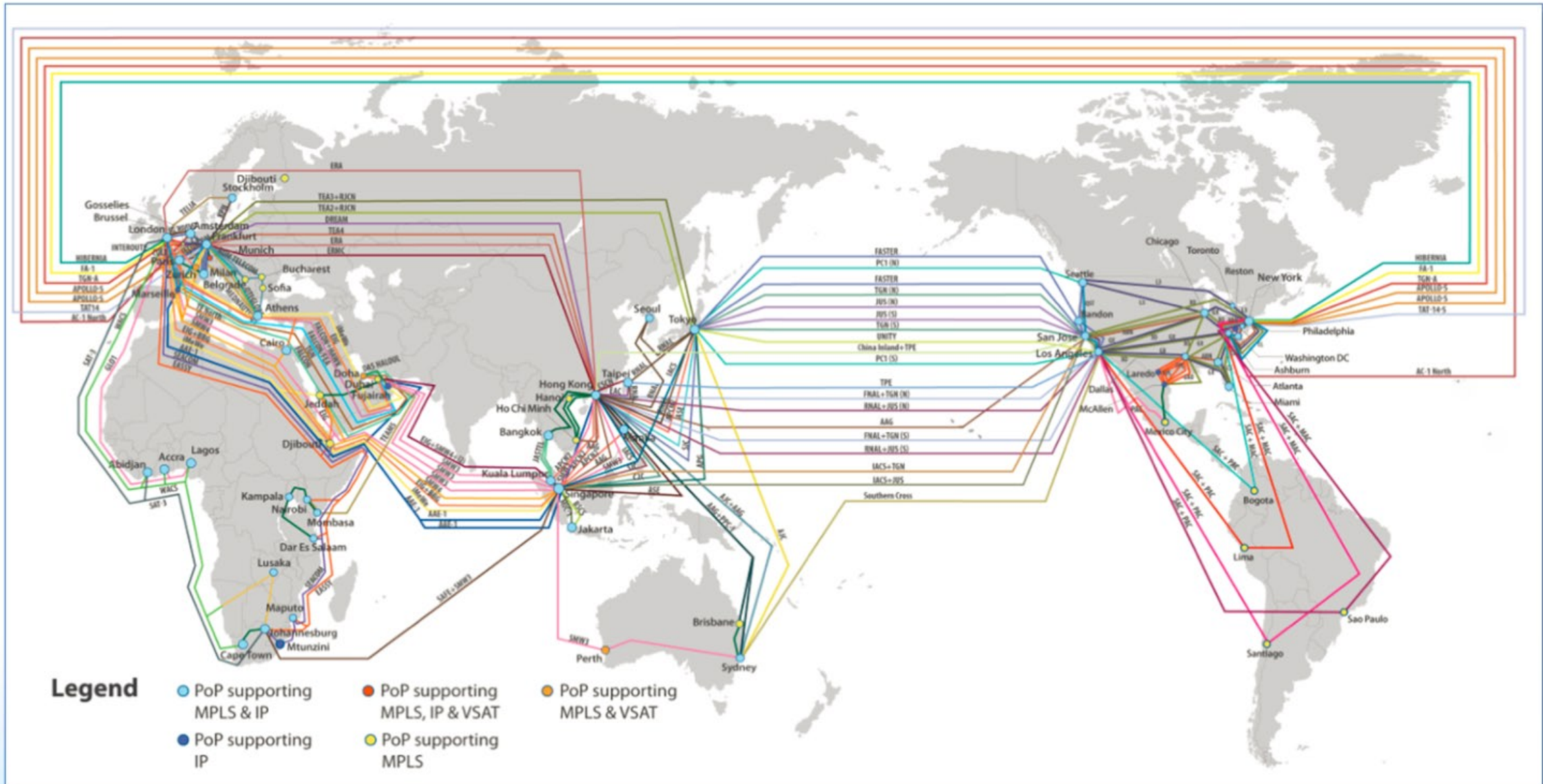
Abundant connection *can* enable floods of data

Capacity Usage (Log 1000 Scale)

Legend:
- Trans-Atlantic
- Middle East-Europe
- Africa-Europe
- Intra-Middle East
- Intra-Africa

Y-axis: 1 Ebps, 1 Pbps, 1 Tbps, 1 Gbps

X-axis: 1998, 2003, 2008, 2013, 2018, 2023, 2028

TeleGeography
AUTHORITATIVE TELECOM DATA

Carlsbad, CA | Washington, DC | Exeter, UK | Singapore | www.telegeography.com | info@telegeography.com
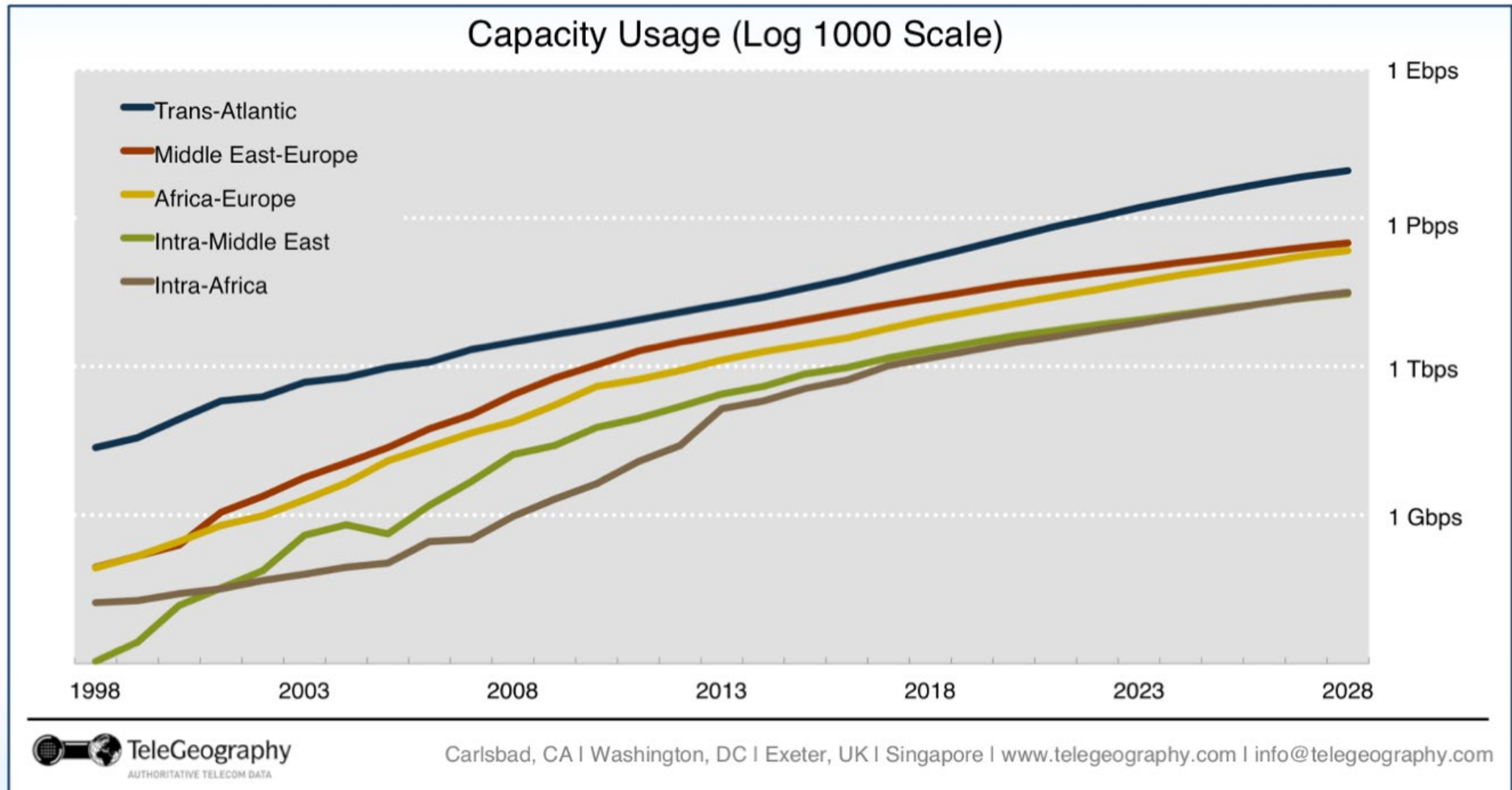
Abundant computation *can* refine data → understanding
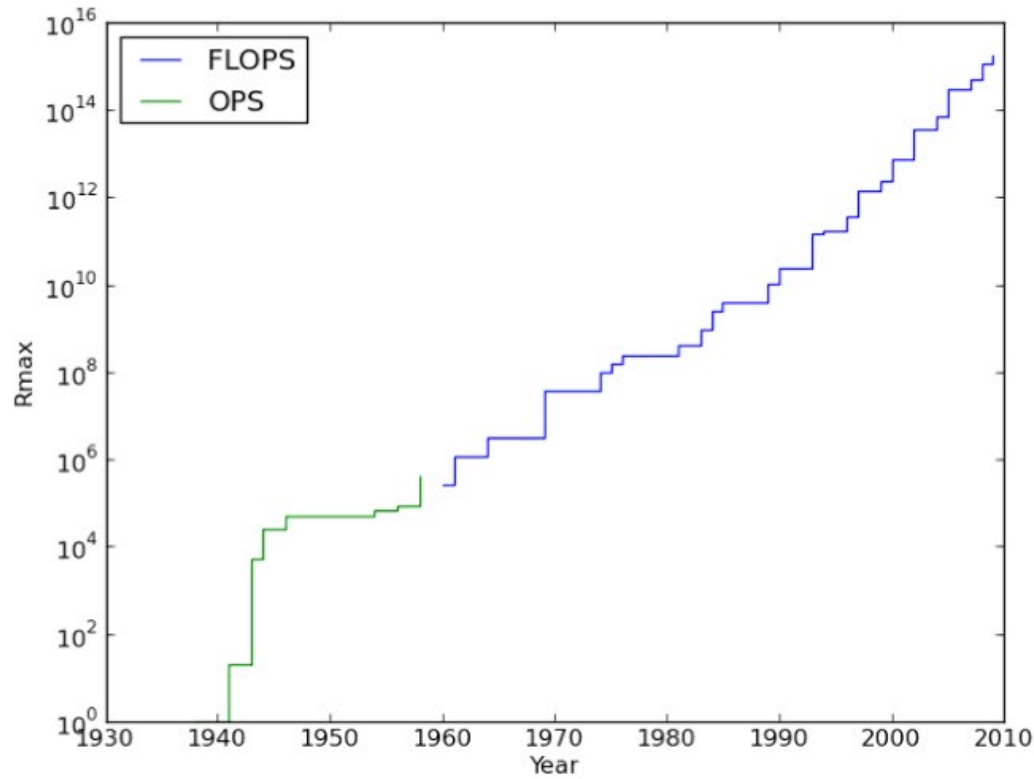
Note: these are *logarithmic* vertical scales: a straight line represents exponential growth. Showing aggregate compute power on a linear scale makes it look as if we started building them in 2005...

Global hardware in estimated FLOPS-equivalent human brains

Legend:
- Minds (brains small, world hardware high, growth high)
- Minds (brains median, world hardware high, growth high)
- Minds (brains median, world hardware low, growth high)
- Minds (brains small, world hardware high)
- Minds (brains small, world hardware low)
- Global population 2016
- Minds (brains median, world hardware high)
- Minds (brains median, world hardware low)
- Minds (brains large, world hardware high)
- Minds (brains large world hardware low)

Figure: Projected number of human brains equivalent to global hardware under various assumptions. For brains, 'small' = 3 x 10^ 13, 'median' = 10^18, 'large' = 10^25. For 'world hardware', 'high' =2 x 10^20, 'low' = 1.5 x 10^21. 'Growth' is growth in computing hardware, the unlabeled default used in most projections is 25% per annum (our estimate above), 'high' = 86% per annum (the apparent growth rate in ASIC hardware in around 2007).

Abundant capacity *can* make understanding affordable

Decline and fall
The cost* and speed of computation

Disk-drive prices
$ per MB

Internet connection speeds
s per Mb

Average transistor prices
1968=100

Log scale: 10,000 / 1,000 / 100 / 10 / 1 / 0.1 / 0.01 / 0.001 / 0.0001 / 0.00001 / 0.000001

1956 60 70 80 90 2000 10 19

Sources: John C. McCallum; Gordon Moore; The Linley Group; Nielsen Norman Group; *The Economist*   *Nominal prices

The Economist
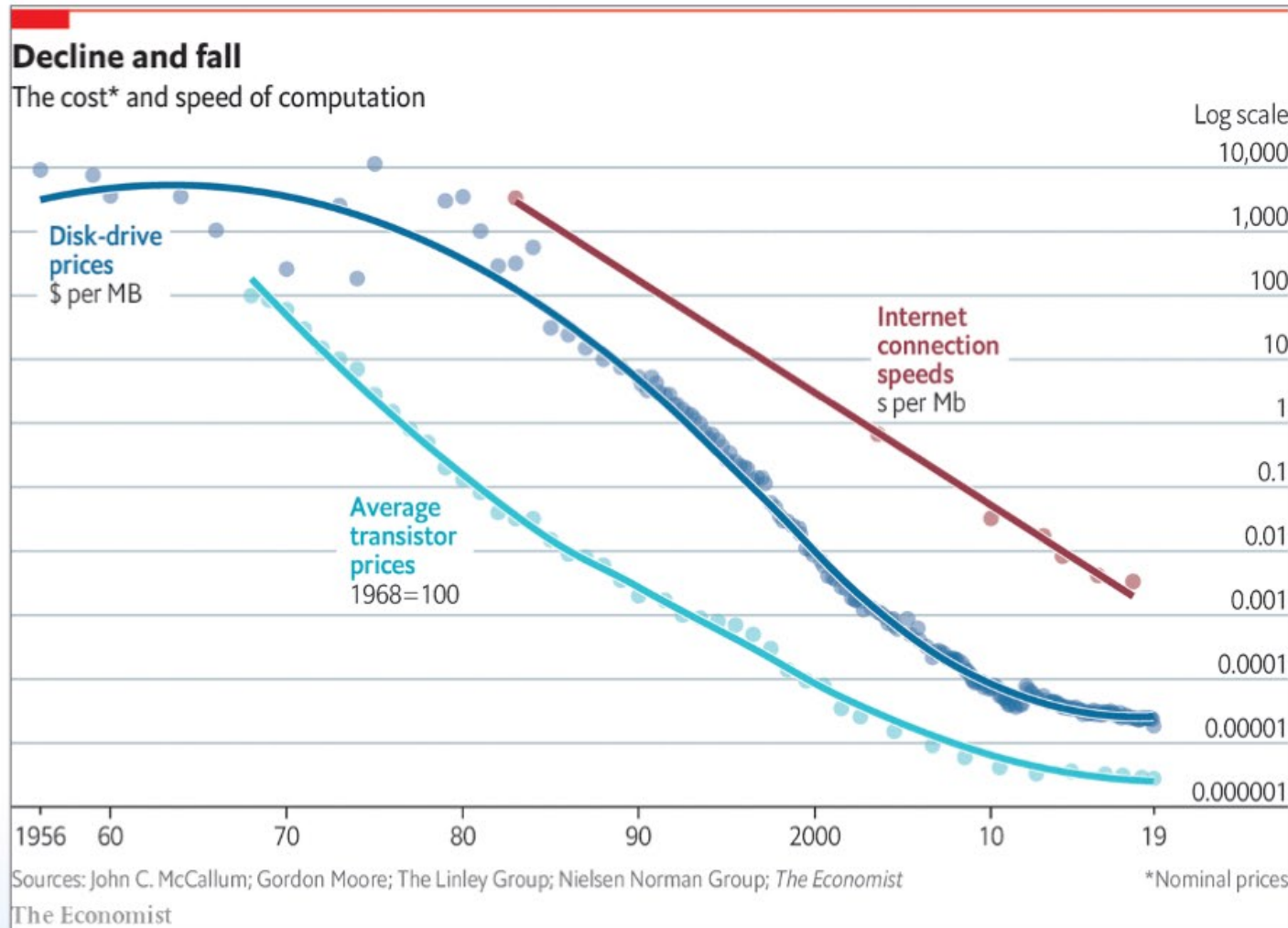
"The price of computation today is roughly one hundred-millionth what it was in the 1970s, when the first microprocessors became commercially available...**between 1950 and 2010 the amount of number-crunching possible with a kilowatt-hour of energy grew roughly a hundred-billion-fold.**"

– The Economist, September 2019

Processes (*and* perspectives) create experiences

Customer onboarding is known for paper-intensive processes: the 100-page physical document with sticky notes indicating where to sign.

Royal Bank of Canada Wealth Management used low-code automation, comprehensive data integration, and strong encryption for data security to reframe case management as a client-centered onboarding experience – reducing onboarding time from weeks, to a new average of 24 minutes.

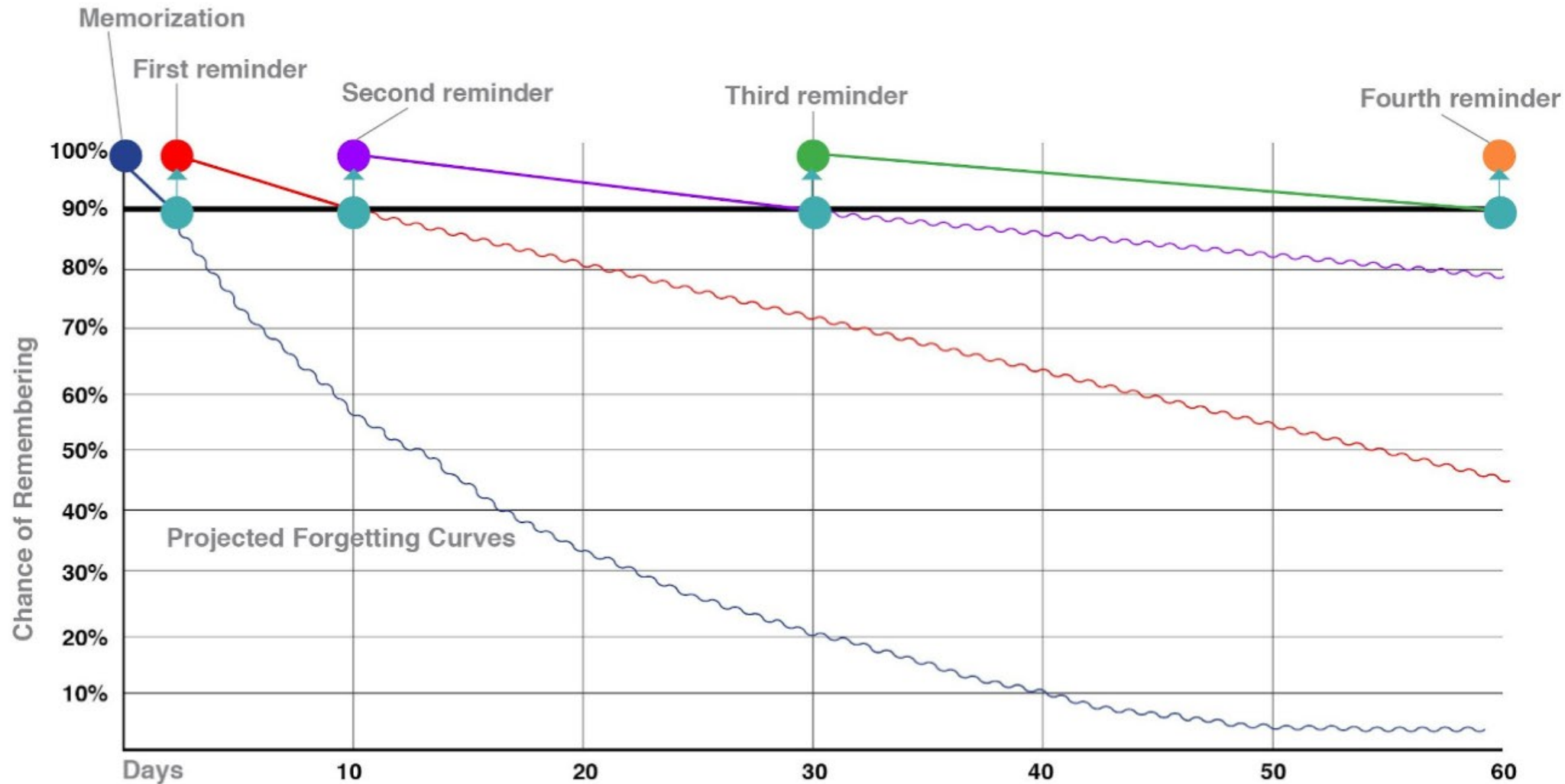# What's becoming scarce? Access to *human attention*

We know human attention is dwindling

12 seconds

The average human attention span in **2000**

8 seconds

The average human attention span in **2013**

9 seconds

The average attention span of a **goldfish**

(% agree)	18 to 24	65+
When nothing is occupying my attention, the first thing I do is reach for my phone	77%	10%
I check my phone at least every 30 minutes	52%	6%
The last thing I do before I go to bed is check my phone	73%	18%
I often use other devices while watching TV	79%	42%
I watch more TV programs through catch-up/streamed TV than live	74%	13%
I often watch a number of episodes of a show back-to-back	87%	43%

19% of online viewers defect in the first 10 seconds.

"The thrill of finding something new often makes connected consumers jump off one experience into another. The 'feel good' neurotransmitter, dopamine, is released when consumers are doing something they find rewarding."

– dl.motamem.org/microsoft-attention-spans-research-report.pdf

If they do pay attention...what about *human data capacity*?

Memorization

First reminder

Second reminder

Third reminder

Fourth reminder

Projected Forgetting Curves

Chance of Remembering

100%
90%
80%
70%
60%
50%
40%
30%
20%
10%

Days 10 20 30 40 50 60

Herman Ebbinghaus
"The Curve of Forgetting"

knowledgeplus.nejm.org/blog/spaced-repetition-the-most-effective-way-to-learn/

Some things *are* getting people's attention

The past year has underlined the impact of our behaviour on the environment. **Consumers are making more environmentally conscious decisions, yet we have reached a point where they are no longer wooed by ethical, sustainable and responsible business practices,** they have come to expect them.

Deloitte.

October 2021

State of the Connected Customer

FIFTH EDITION

Insights from nearly 17,000 consum[...] and business buyers on the new cus[...] engagement landscape

May 2022

" **78% of customers say environmental practices influence their decision to buy from a company.**

Not doing so risks impacting the bottom line. Salesforce's research shows that over three quarters (78%) of customer purchasing decisions are swayed by environmental practices and two-thirds (66%) have ceased buying from companies whose values didn't align with their own.

Two things are getting people's attention

The past year has underlined the impact of our behaviour on the environment. **Consumers are making more environmentally conscious decisions, yet we have reached a point where they are no longer wooed by ethical, sustainable and responsible business practices,** they have come to expect them.

Deloitte.

October 2021

41% of returned workers say the stress they experience has worsened. A lot is at stake. **Untreated mental illness may cost companies up to $300 billion annually, largely due to impacts on productivity, absenteeism, and increases in medical and disability expenses**, according to the National Alliance on Mental Illness.

Manufacturing Business Technology

May 2022

Attacking complex problems → ignoring irrelevance

Intelligence "genuinely ignores most of what it knows, and operates with a well-chosen portion of its knowledge at any moment. Well-chosen, but not chosen by exhaustive consideration.

"How, though, can you design a system that reliably ignores what it ought to ignore under a wide variety of different circumstances in a complex action environment?"

- Daniel Dennett

Technology intelligence is mostly about our interactions

To help people be ready for the digital workplace of the future, leaders must help people **develop digital skills in four key areas** that enable people to collaborate more effectively as work continues to be done in a hybrid model.

The first is building effective **collaboration intelligence** for context-specific interactions or utilizing visual collaboration, tooling and meetings so people can innovate together. The second is **context intelligence** to enable people to work effectively with content to reduce content duplication and support synchronous and asynchronous content creation – skills that enable people to become more data literate.
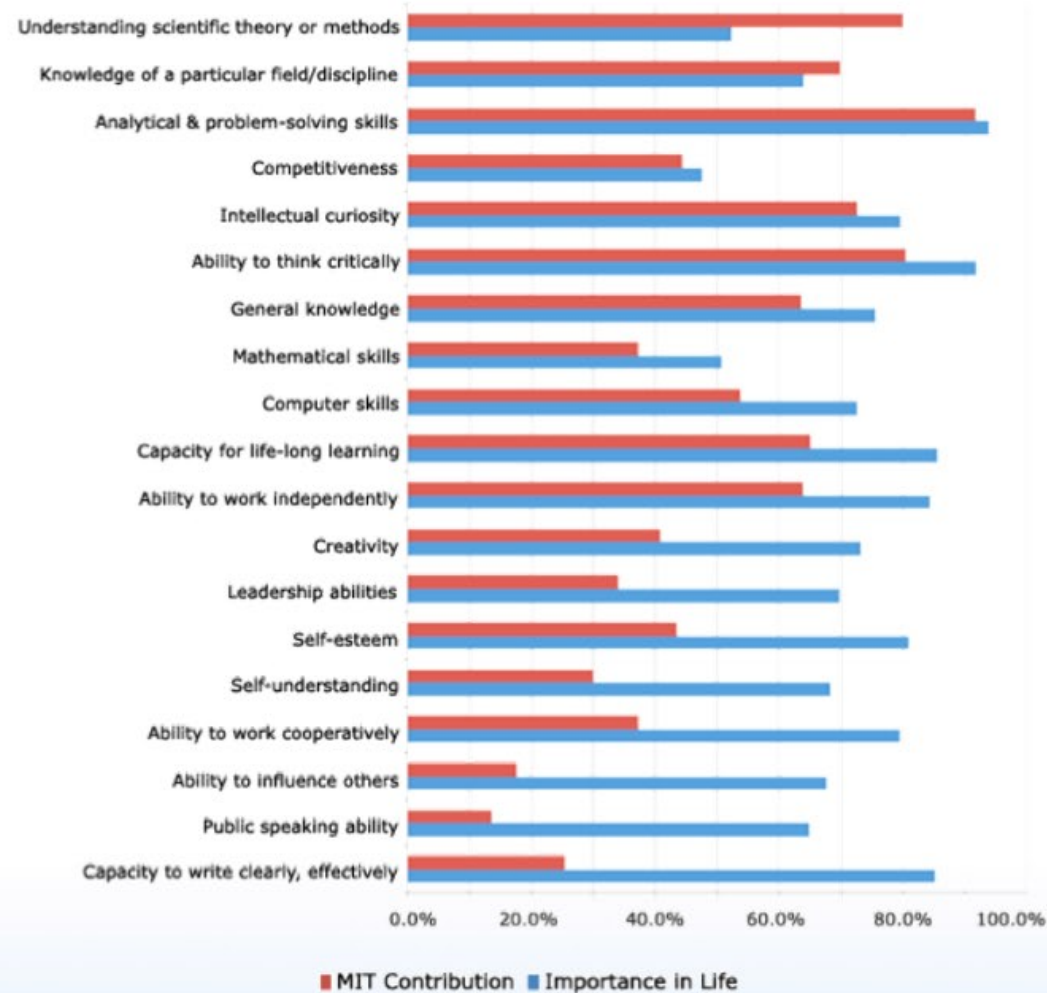
Data intelligence will help people be able to locate, combine, intersect, visualize and analyze data to make better decisions. The fourth area is **process intelligence** skills that enable people to do tracking and automate planning, resourcing and approval workflows.

– www.techrepublic.com/article/digital-workplace-human-centric/

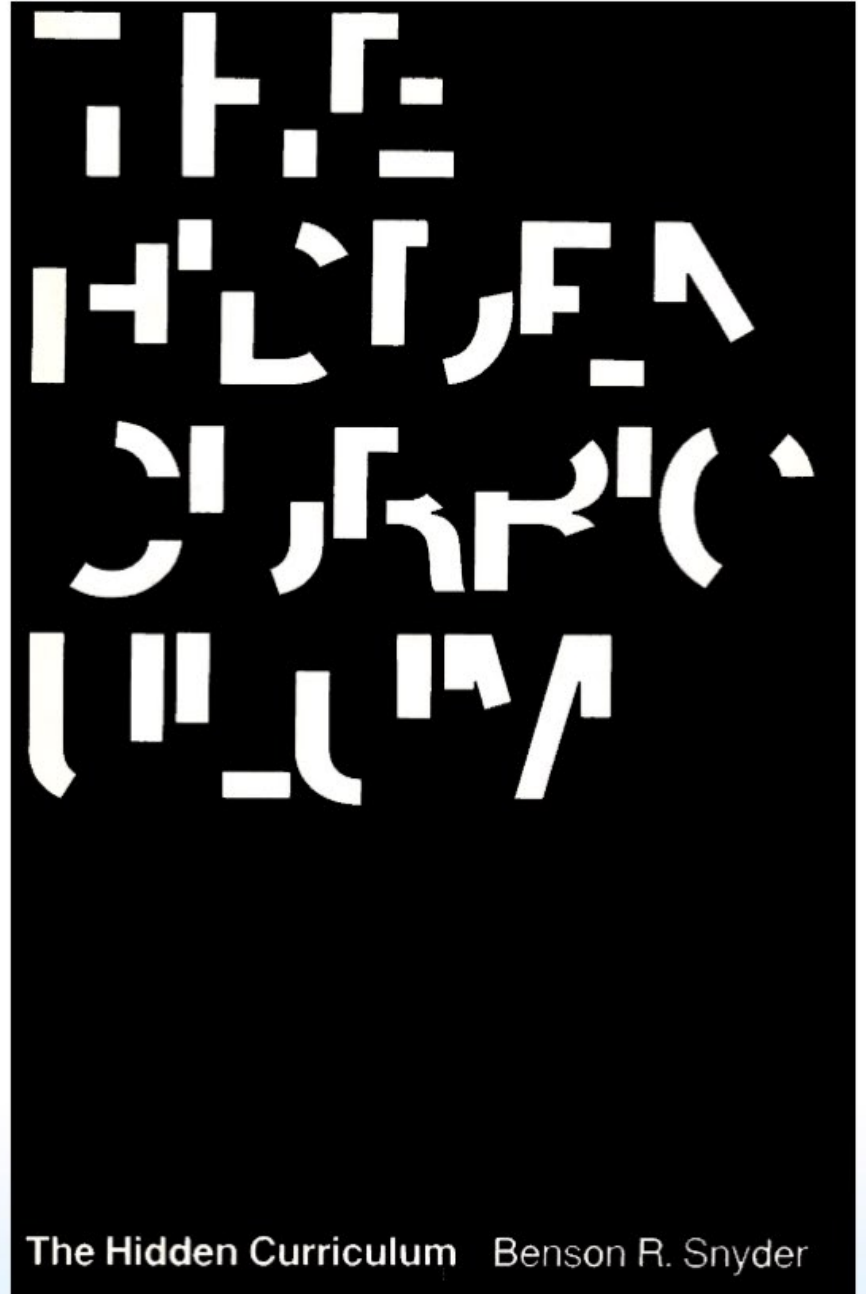# Extending the scope of learning

Figure 2: 19 Abilities Listed in Descending Order of MIT's Contribution Meeting Current Importance in Life

https://wac.colostate.edu/docs/atd/assessment/perelman.pdf

The Hidden Curriculum   Benson R. Snyder

"Technology" is a *behavior*

An "ology" is a discipline, not an artifact.

The word "technology" comes from roots meaning "means of gain" and "expression of thought."

Our technology is not the objects that we make, or the tools with which we make them, but the knowledge that we find ways to express–and to share–about transforming the natural world to create human value.

Making stuff, or doing stuff, is only an outcome, however important that might be: **it's what a *culture's "technology" enables.***

- diginomica.com/technology-embodied

July 25, 2017 | vol. 114 | no. 30 | pp. 7731–8124

PNAS

Proceedings of the National Academy of Sciences of the United States of America   www.pnas.org

Social learning and evolution

Population declines in vertebrates
volcanism and end-Triassic mass extinction
Self-organization and resilience in ecosystems

Arthur M. Sackler Colloquium on the Extension of Biology Through Culture

How can I use [Shiny Object]? That is *not* the right question

An actual **business case** and the right **technology setting** for using the thing that's getting everyone excited are **usually *not* present**.

Figure 6 - DHS Science & Technology Directorate Flowchart
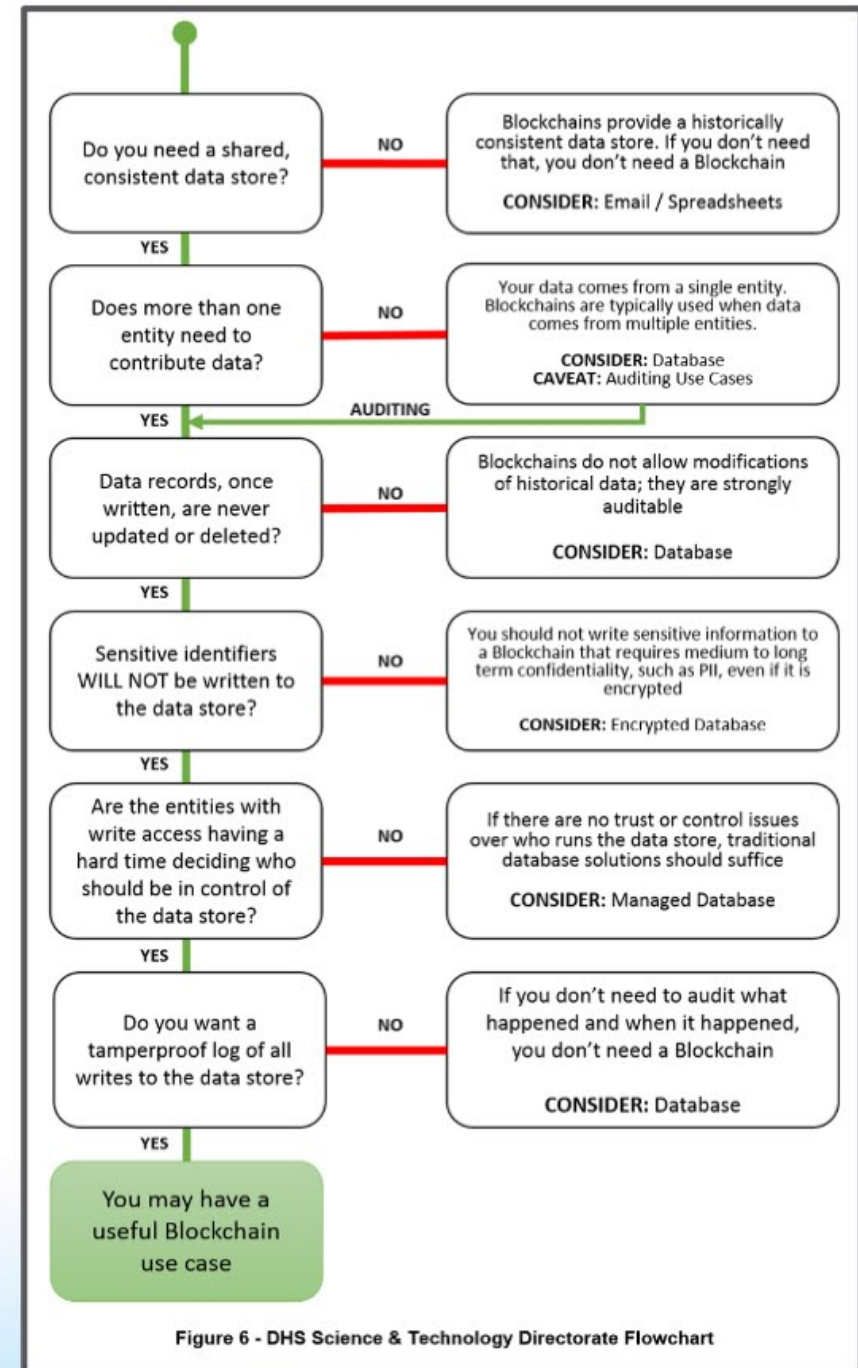
An opinion of NFTs is like an opinion of glass bottles

It's a container. Making it has costs. What it *holds* is usually most of its value.

In the 14th century, master glassmakers on the island of Murano in Italy made the most prized glass in Europe. France and Germany tried to bribe the master glassmakers to leave.

To keep the glassmakers in Venice, they were given higher social status and could marry their daughters into nobility. No other tradesmen were granted this honor.

In the 1820s, American manufacturers devised **a method using a mold and a plunger that could make a glass bottle in seconds**.

www.bottlestore.com/blog/wp-content/uploads/2016/03/
the-remarkable-history-of-glass.jpg

- Content-preserving
- Non-contaminating
- Cheaper and less energy-intensive to make...tomorrow

Let's make Web3 an "act of technology"

NFT? WTF?
("What's this *for*?")

"The story of technology is the story of developing and then **obliterating scarcity...** We should celebrate the inclusivity of tech rather than indulging in weird ceremonies to create scarce luxuries"
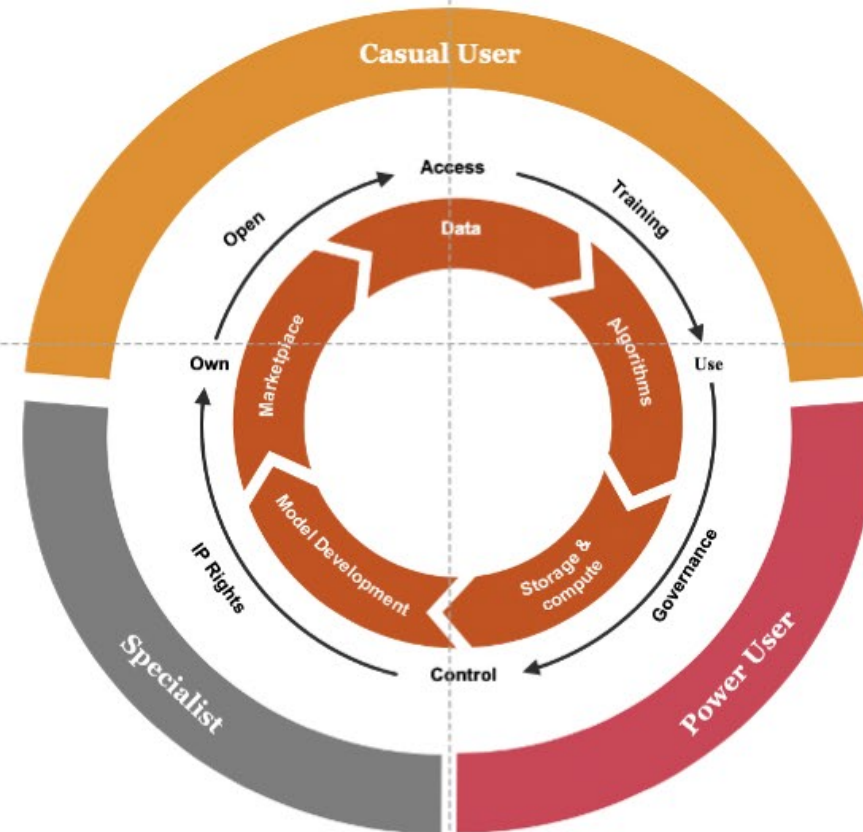
– Vlad Savov, 2016

Let's make Web3 an "act of technology"

"The story of techn... story of developi... **obliterating**... We should celebr... inclusivity of tech... indulging in weird... create scarce lux...

If its only intention and effect is the creation of **a new, entirely artificial scarcity,** does it even qualify as a **technology?**

Democratization Framework

Casual User

Open · Access · Training

Own · Data · Use

Marketplace · Algorithms

IP Rights · Model Development · Storage & compute · Governance

Specialist · Control · Power User

Source: PwC Analysis

If you want to have inflation on your side

Peter Coffee @petercoffee · May 3

"Whatever abilities you have can't be taken away from you. They can't actually be inflated away from you. The best investment by far is anything that develops yourself, and it's not taxed at all" – Warren **Buffett**

cnbc.com

When inflation is high, Warren Buffett says the best thing you can do i...

There is little that individuals can do to avoid inflation at the cash register, but Buffett says that it is possible to protect against its ...

"Buffett added that skills, unlike currency, are inflation-proof. If you have a skill that is in demand, it will remain in demand no matter what the dollar is worth."

www.cnbc.com/2022/05/02/this-is-warren-buffetts-simple-advice-for-periods-of-high-inflation.html

salesforce

Let's not be limited by what we "know"

"Fifteen hundred years ago, everybody knew the Earth was the center of the universe.

"Five hundred years ago, everybody knew the Earth was flat, and fifteen minutes ago, you *knew* that humans were alone on this planet.

"**Imagine what you'll know... tomorrow.**"

Thank You

Salesforce Strategic Research

We Don't Predict. We Reveal.