



POSITIONING LIBRARIES FOR THE DIGITAL FUTURE

Change Literacy

The Library's Role in an Uneasy Future

M Ryan Hess

Library Services Manager
Digital Initiatives

City of Palo Alto Library

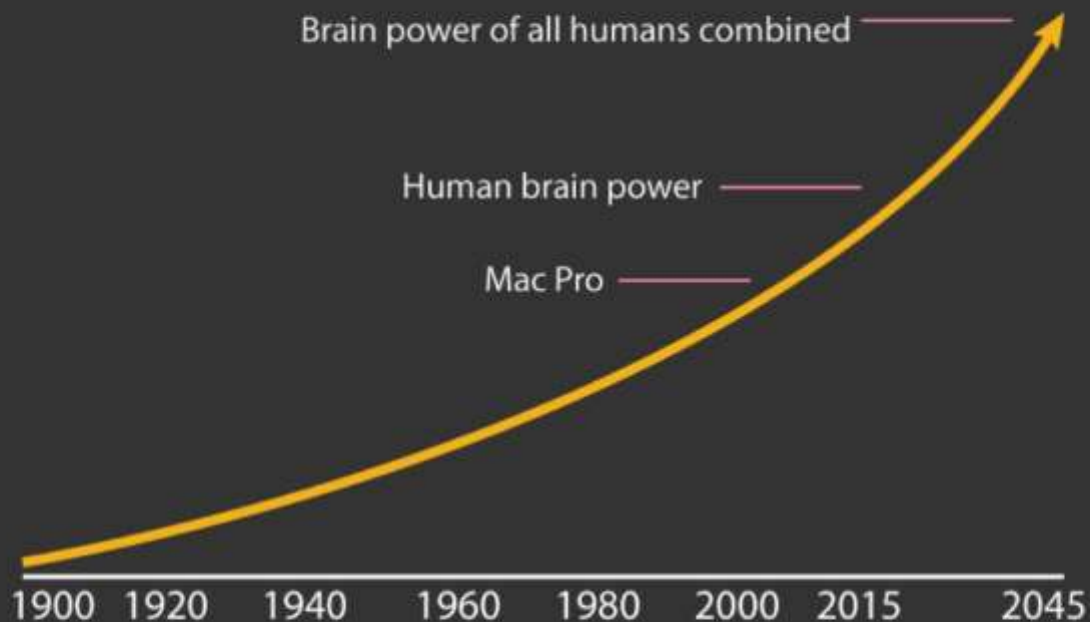
What if

we **are** alone?

Takeaways

Change is coming
Change is hard
Change is necessary
Libraries can help

Where We Are





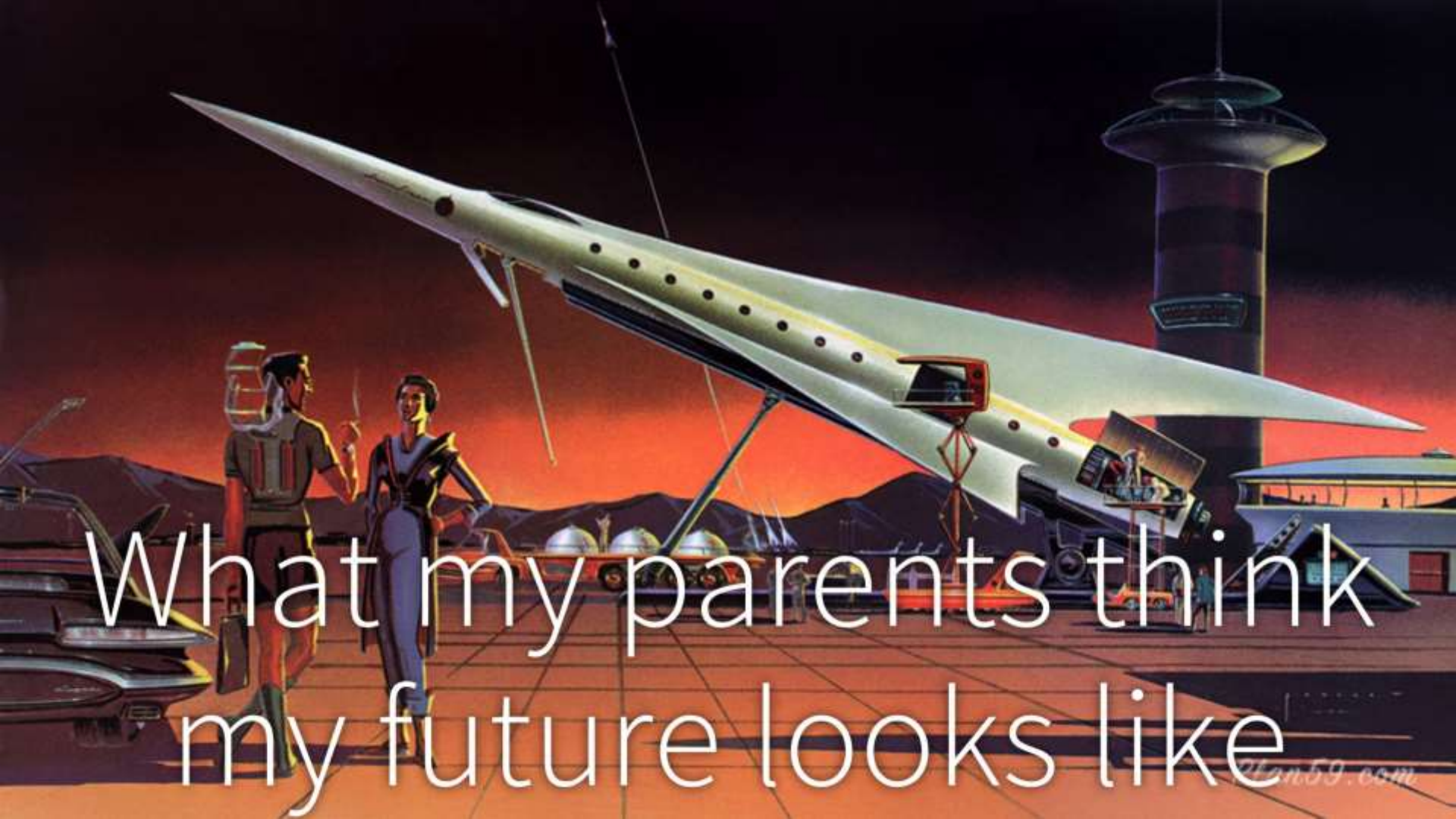
I'M NOT AFRAID



YOU WILL BE... YOU WILL BE



Where We're Going



What my parents think
my future looks like

JOEMONKEY
inspiration
guru

JOB MONKEY

URGENT
HURRY!
BUY GROCERIES
FOR MR. D. JURADO

shopping list
- pineapple
- yoghurt

BONUS
JOB
MASCOT
FROG
READING

NEXT

USER TESTING FOR DOGS

What I think my
future looks like

You're late!
Better hurry for a
good rating

SYSTEM
AVAILABLE

3 NEW MESSAGES

Reply: Loved
Camille Alvarez!

Push here to open your inbox

exit

exit

exit

POINTS MANAGER

JOE
MONKEY
LEVEL
4

LEVEL

23



What my my future
actually looks like

Get Ready For Takeoff

- AI
- Cyborgization
- Spatial Computing
- Blockchain

Marvin Minsky

Computer
Scientist, MIT



AI

Psychotic Beginnings?

AI

“Humans will be eclipsed by
Ems (Emulated Humans)”

Robin
Hanson

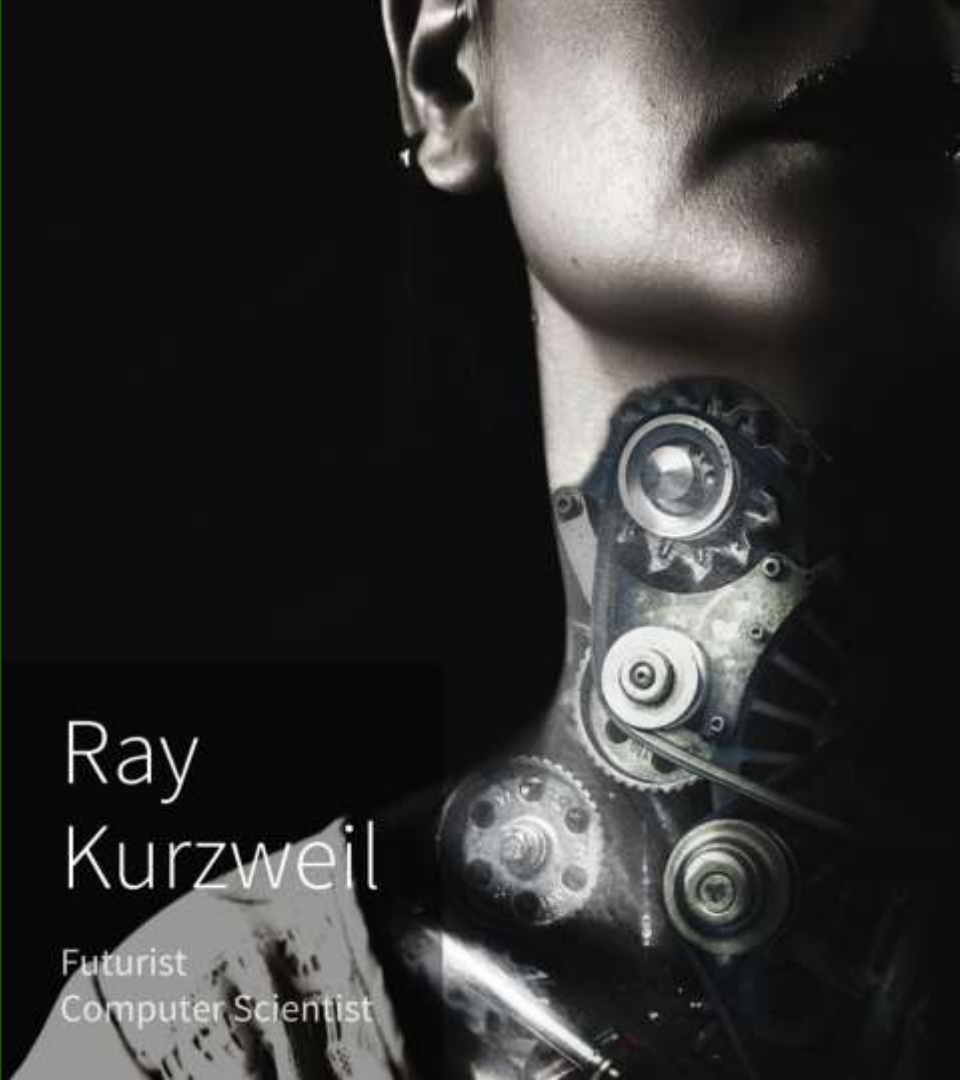
Assoc. Professor of
Economics,
George Mason
University

Cyborgization

"By the 2030s, the nonbiological portion
of our intelligence will predominate."

Ray
Kurzweil

Futurist
Computer Scientist

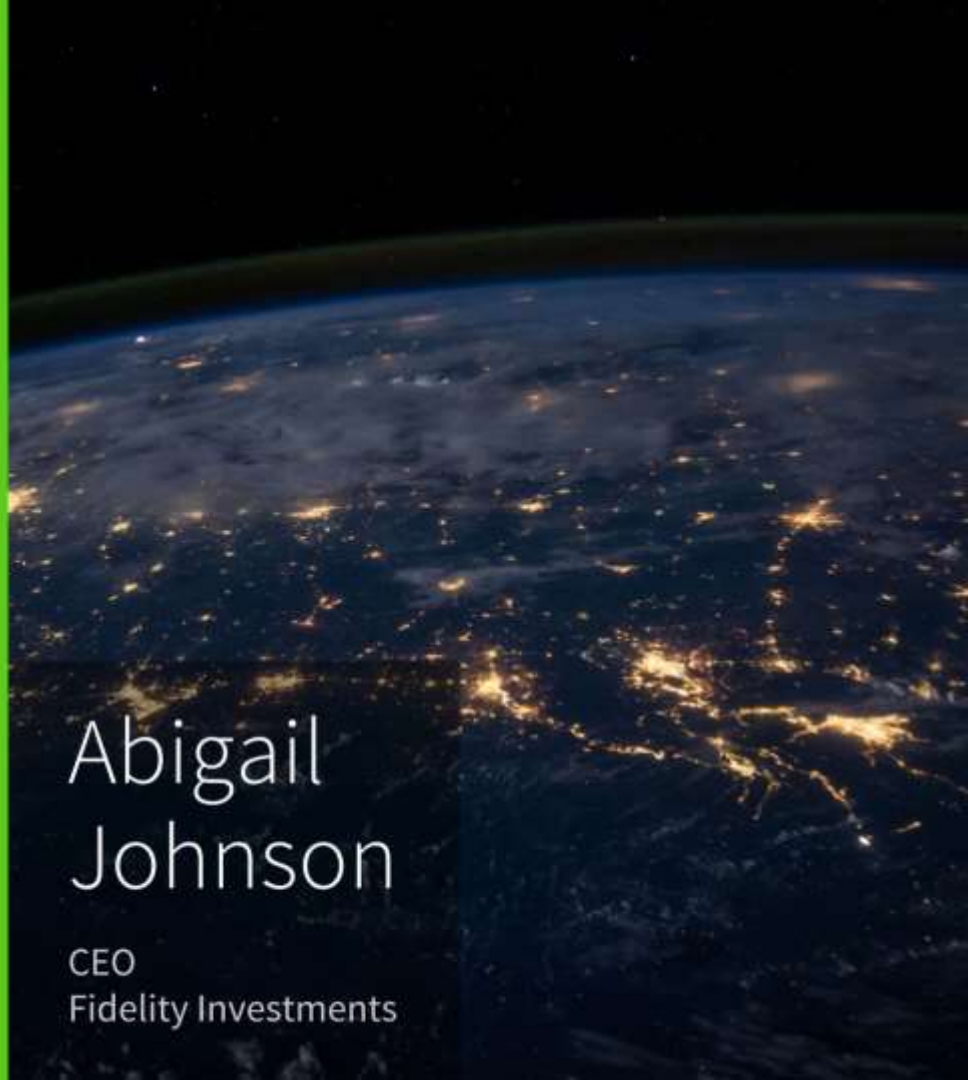


Blockchain

“It will fundamentally change market structures, and maybe even the architecture of the Internet itself.”

Abigail
Johnson

CEO
Fidelity Investments



What is Blockchain?



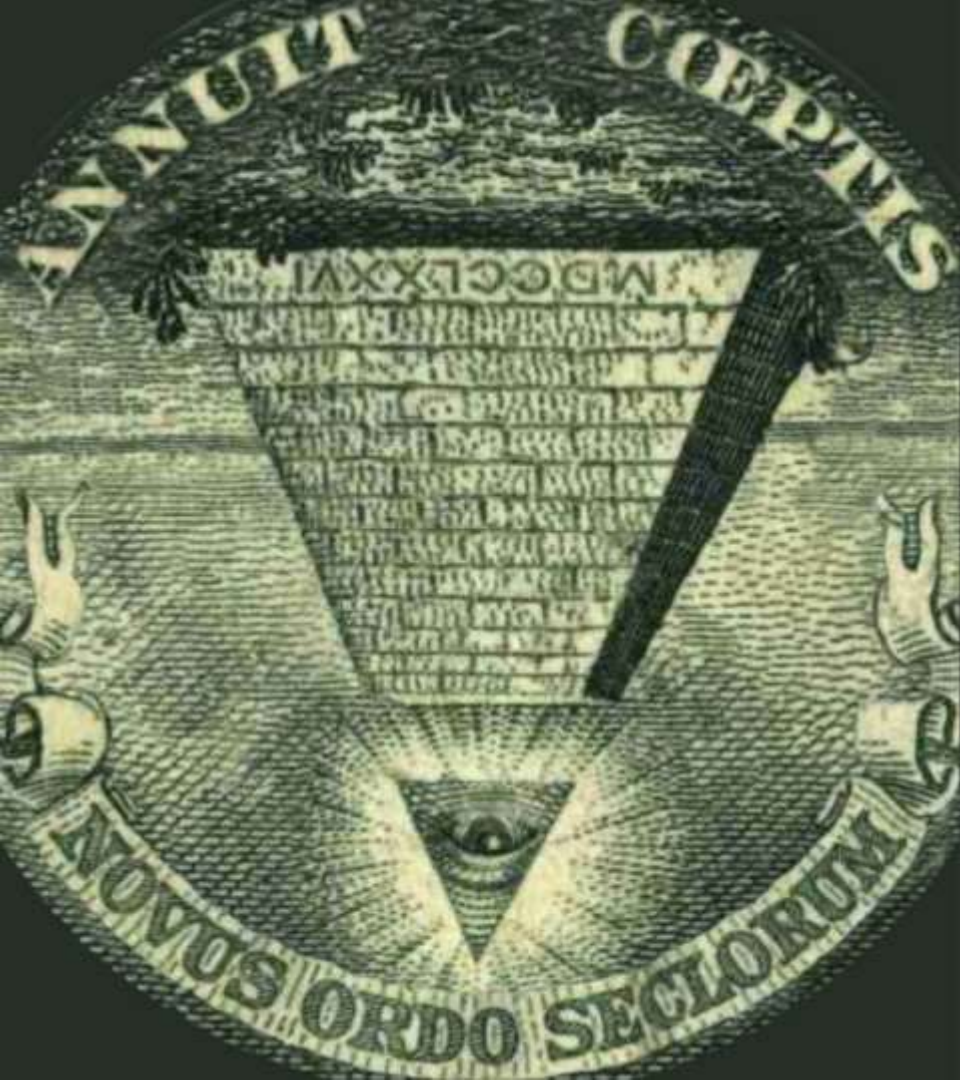
Shared Ledger



Trust by Network



Immutable



The Killer App of Blockchain

It Revolutionizes Trust

Blockchain Examples



Privacy & Security
uPort



Empowerment
BitNation



Creator Compensation
Filecoin



Freedom of Speech
Inter-Planetary File System

A vertical banner on the left side of the image. It features a cosmic background with a vibrant nebula in shades of orange, yellow, and green at the top. Below the nebula is a large, blue, translucent sphere resembling a planet or a gas giant, with some internal structures visible. The background is dark with scattered stars.

Inter-Planetary File System

The Internet: reinvented and decentralized

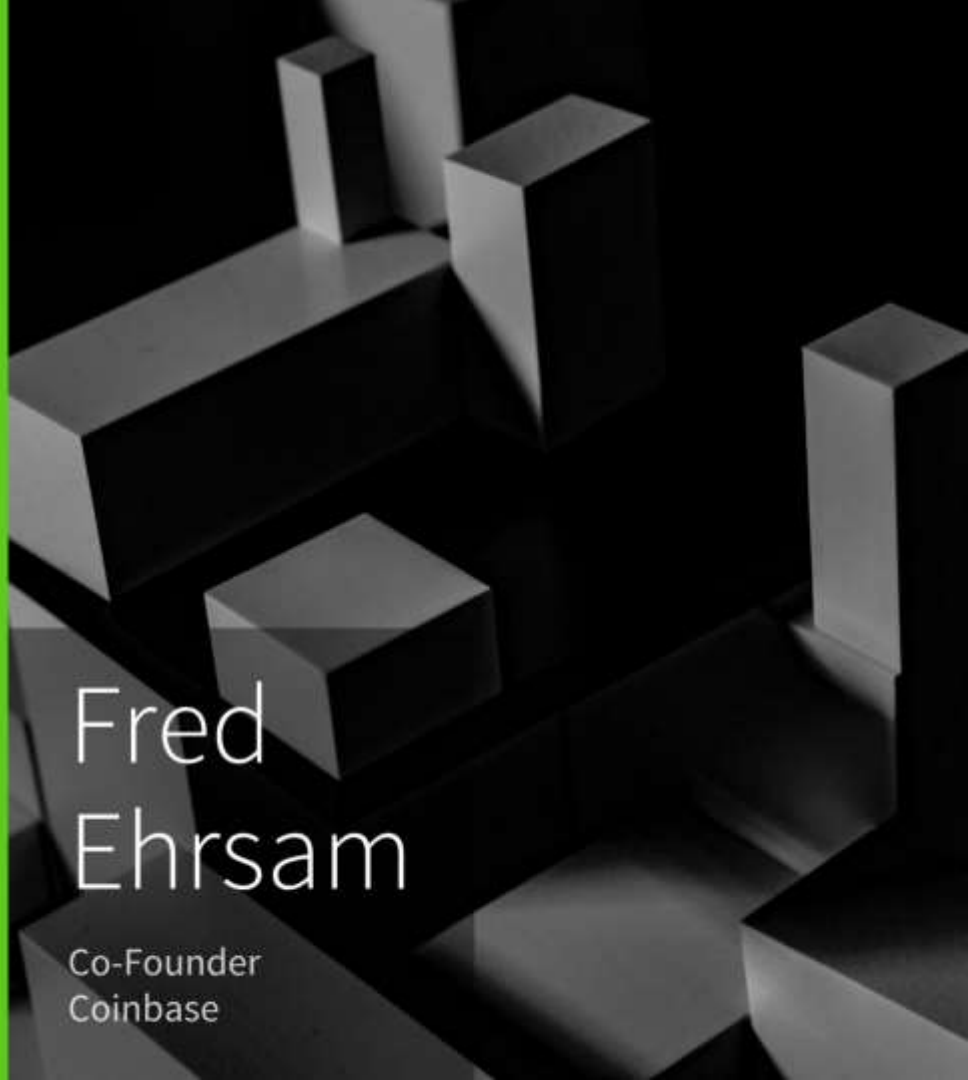


Blockchain

"We'll increasingly trust blockchains
as the basis for reality."

Fred
Ehrsam

Co-Founder
Coinbase



Spatial Computing

"We believe augmented reality is going to
change the way we use technology forever."

A photograph of Tim Cook wearing a futuristic augmented reality headset and black gloves. He is standing in a modern, brightly lit interior space with large windows and architectural details. The image has a blue and white color scheme.

Tim
Cook

CEO
Apple



Emulants and AI

Slaves or
masters?



Cyborgization

Creeping toward
singularity



Spacial Computing

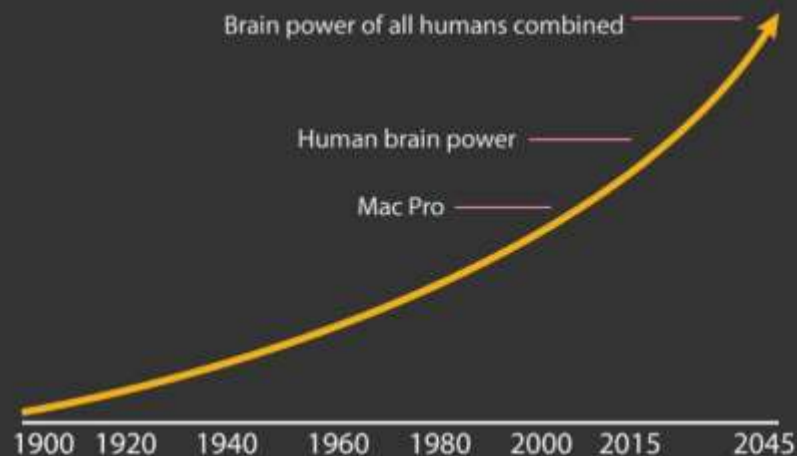
A blurring of reality



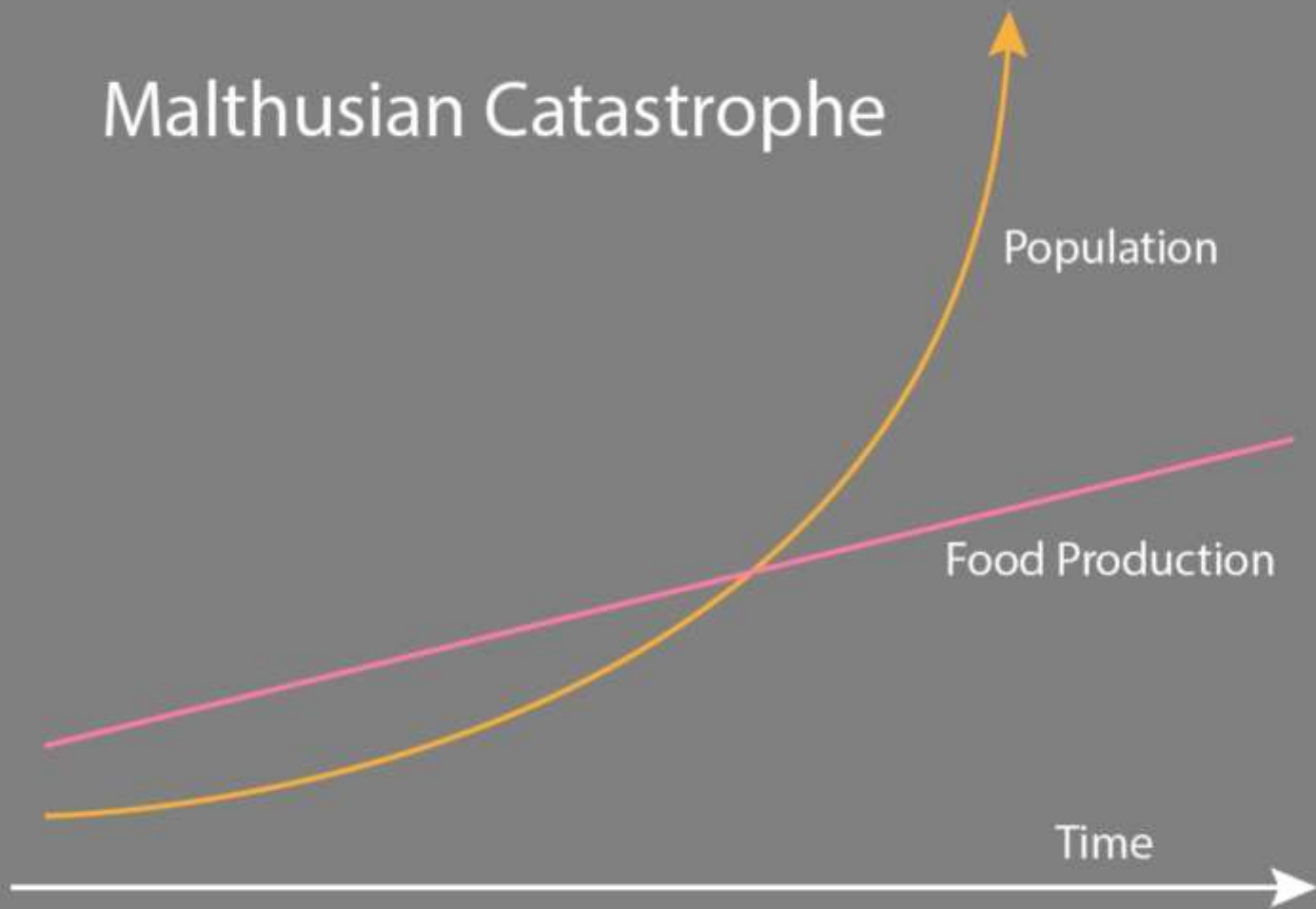
Blockchain

The digital DNA

Can we cope?



Malthusian Catastrophe




Technology and its Discontents

Your Data Has Been Owned



- **Stuxnet Worm, 2010**
Industrial systems infected by worm in cyber attack on Iranian Nuclear Sites
- **Target and Home Depot Hacks, 2014**
96 million consumers
- **Federal Government Employee Hacks, 2015**
21.5 million federal employees
- **DNC Email Hack, 2016**
Email communications of Democratic Party leadership
- **Equifax Hack, 2017**
147.9 million consumers financial data exposed





Your Data

Weaponized

Against You

Tech Wags Government Dog



Trolled on Facebook

Were you trolled? Check here: www.facebook.com/help/817246628445509



“Trumpism should not be understood as a political agenda but as a psychological phenomenon.”

A portrait of Jonah Goldberg, a man with dark hair, a goatee, and glasses, wearing a dark suit jacket over a light blue shirt. The background is a light blue gradient.

Jonah
Goldberg

Journalist, American
Enterprise
Institute Fellow

A photograph of three Bird electric scooters parked on a concrete sidewalk next to a street. The scooters are black with white 'BIRD' branding on the handlebars. The scene is captured from a high angle, showing the scooters parked in a row. The sidewalk is made of large concrete slabs, and a red-painted curb separates it from the asphalt road. The word 'Backlash' is overlaid in white text across the middle of the image.

Backlash

Clicklash

Anxiety that clicking a link will
pollute your web experience.



Pre-Russian Hack

Early 2016 Forrester research on digital consumers in the US.



The Stress of the Constant Checkers

American Psychological Association (2017). Stress in America: Coping with Change



Americans who are Constant Checkers

of email, text, social media



Constant Checkers

Worry about negative effects of social media on physical and mental health



Constant Checkers

Feel estranged from family



Unplugging

Somewhat or strongly agree it's important for mental health.



Non-Constant Checkers

Worry about negative effects of social media on physical and mental health



Non-Constant Checkers

Feel estranged from family

Millennials are the most comfortable with technology

But...



Millennials state they are comfortable with tech.

American Psychological Association (2017).
Stress in America: Coping with Change

Tech Comfort Doesn't Lessen Tech Anxiety

I worry about negative effects of social media on my physical and mental health

(% who strongly/somewhat agree)

American Psychological Association (2017). Stress in America: Coping with Change



Millennials



Gen Xers



Boomers



Matures

Children's
hospitals
admissions
for suicidal
thoughts have
doubled during
past decade

American Academy of Pediatrics, 2016



Smartphone Fallout

“[We are] on the
brink of the worst
mental-health
crisis in decades.”

The Atlantic
September, 2017

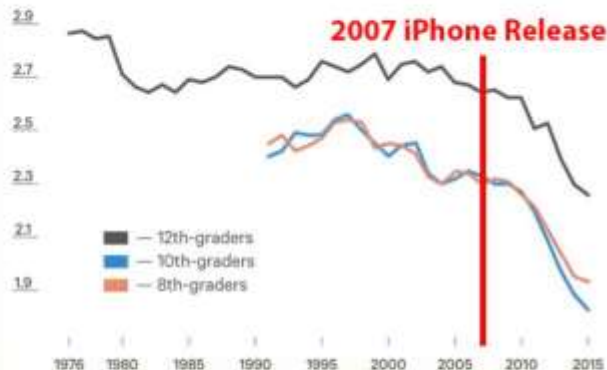
A portrait of Jean M. Twenge, a woman with long, wavy blonde hair, smiling. She is wearing a dark blue top. The background is white on the left and grey on the right.

Jean M.
Twenge

Author of iGen and
Professor, SDSU
Dept. of Psychology

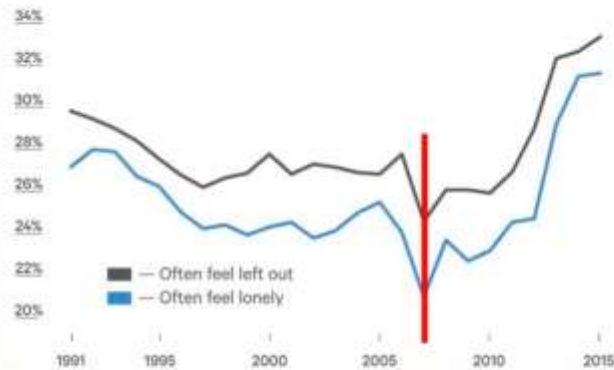
Not Hanging Out With Friends

Times per week teenagers go out without their parents



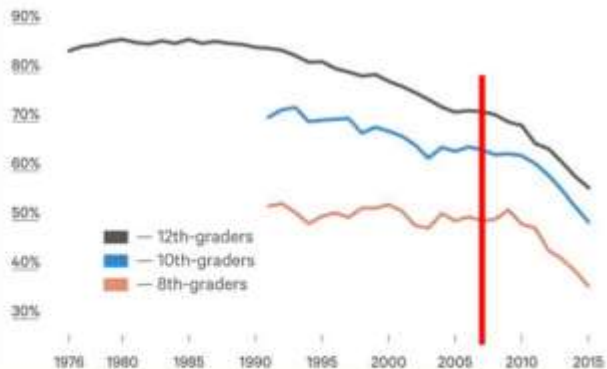
More Likely to Feel Lonely

Percentage of 8th-, 10th-, and 12th-graders who agree or mostly agree with the statement "I often feel left out of things" or "A lot of times I feel lonely"



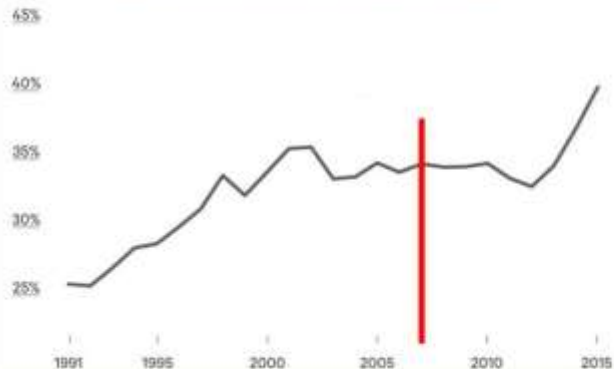
Less Dating ...

Percentage of teenagers who ever go out on dates



Less Likely to Get Enough Sleep

Percentage of 8th-, 10th-, and 12th-graders who get less than seven hours of sleep most nights



Technology Causes the Most Stress When It Doesn't Work

American Psychological Association

StressTechnology and Social Media
in America 2017



Reality Check

Gaming Disorder

May effect only <1% of gamers.

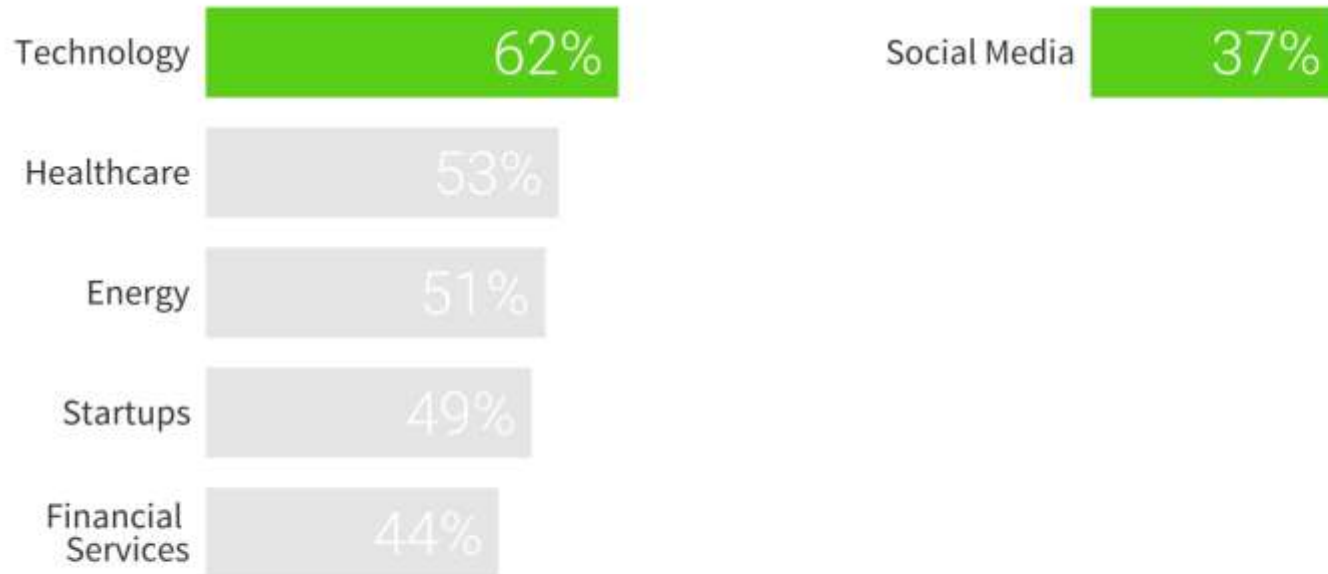


Flesh Fair in Stephen Spielberg's A.I.

Addressing the Anxiety

Californians' trust in industrial sectors

2018 Edelman Trust Barometer - California Survey



“As technology finds its way into our daily existence in new and previously unimagined ways, we need to learn about those who are threatened by it.”

Om Malik

Tech writer and venture capitalist



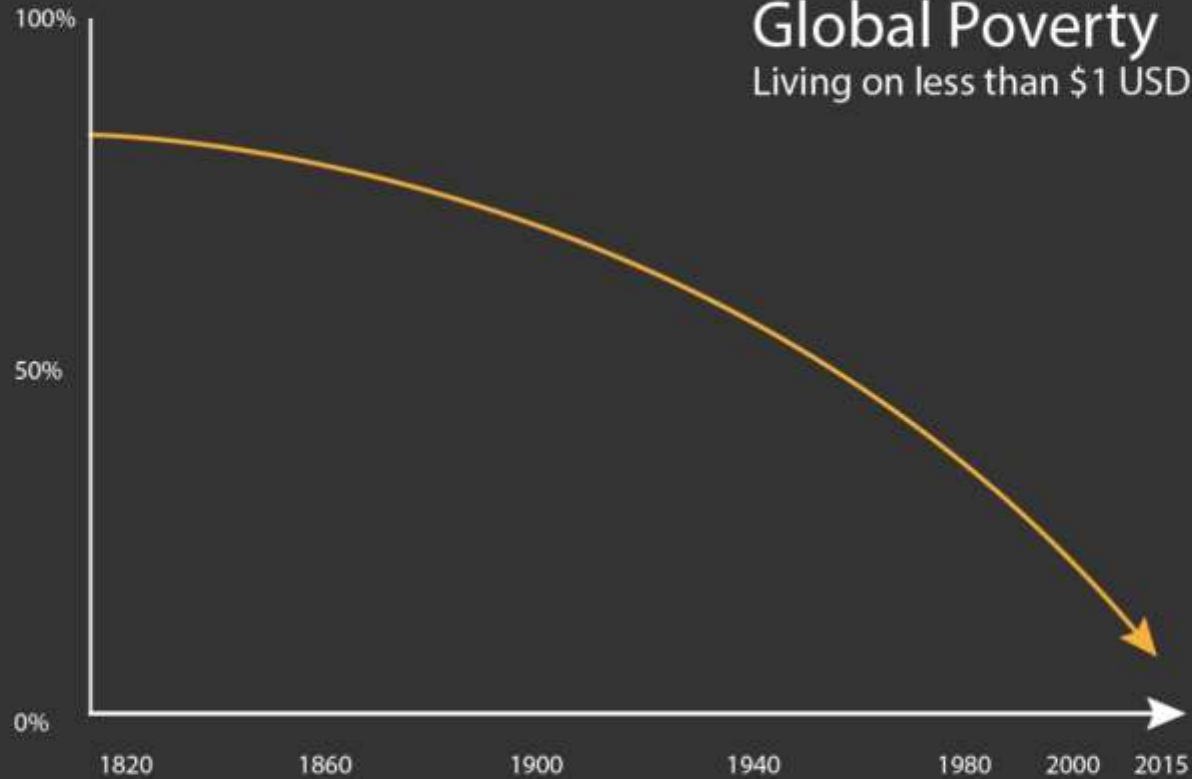
Hans
Rosling

gapminder.org

We're naturally
pessimistic.

Global Poverty

Living on less than \$1 USD

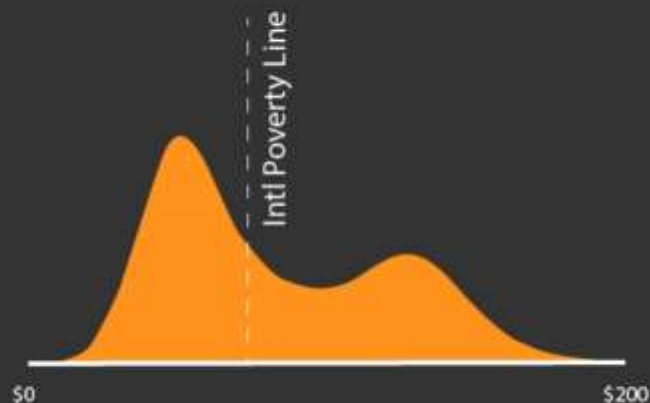


Source: ourworldindata.org

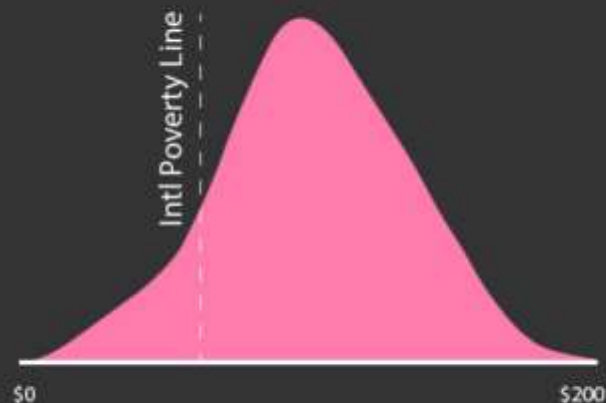
Global Income Distribution

Daily income per capita

1975



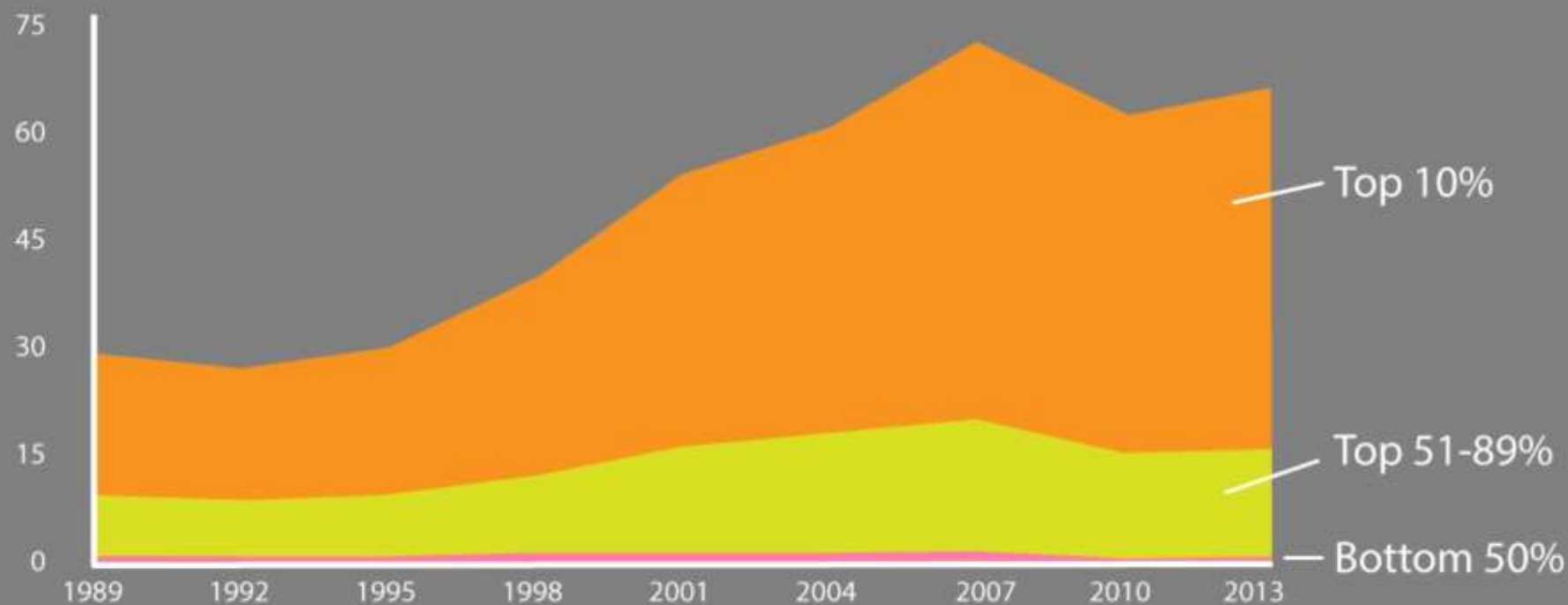
2015



Source: Gapminder

US Family Wealth Distribution

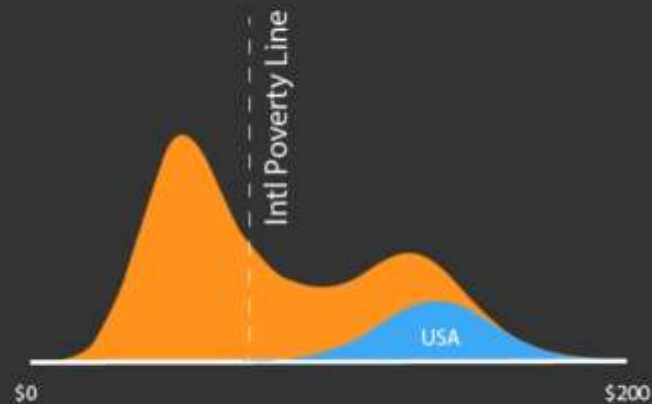
Trillions of 2013 US Dollars



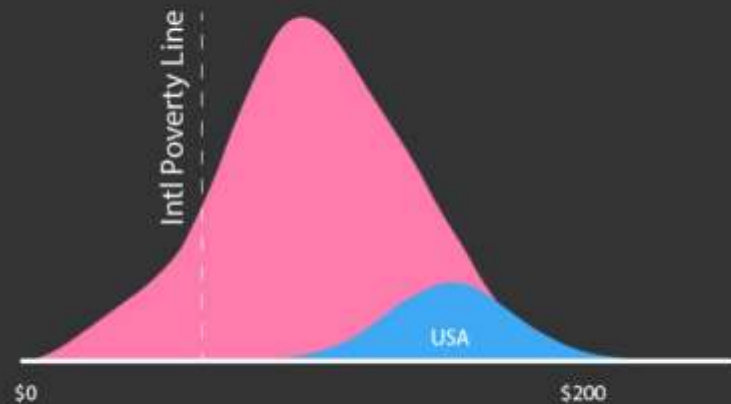
Global Income Distribution

Daily income per capita with USA

1975

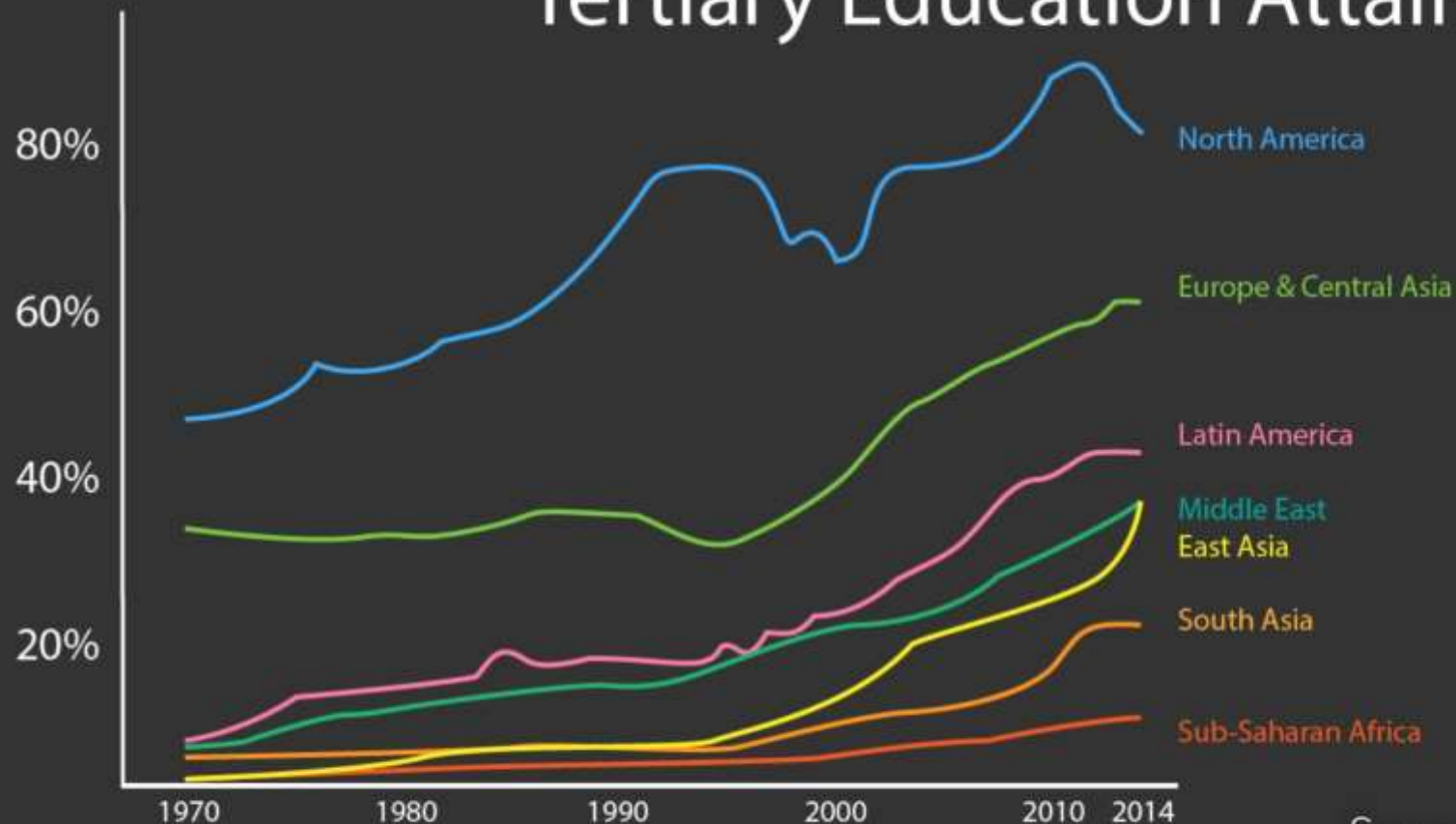


2015



Source: Gapminder

Tertiary Education Attainment



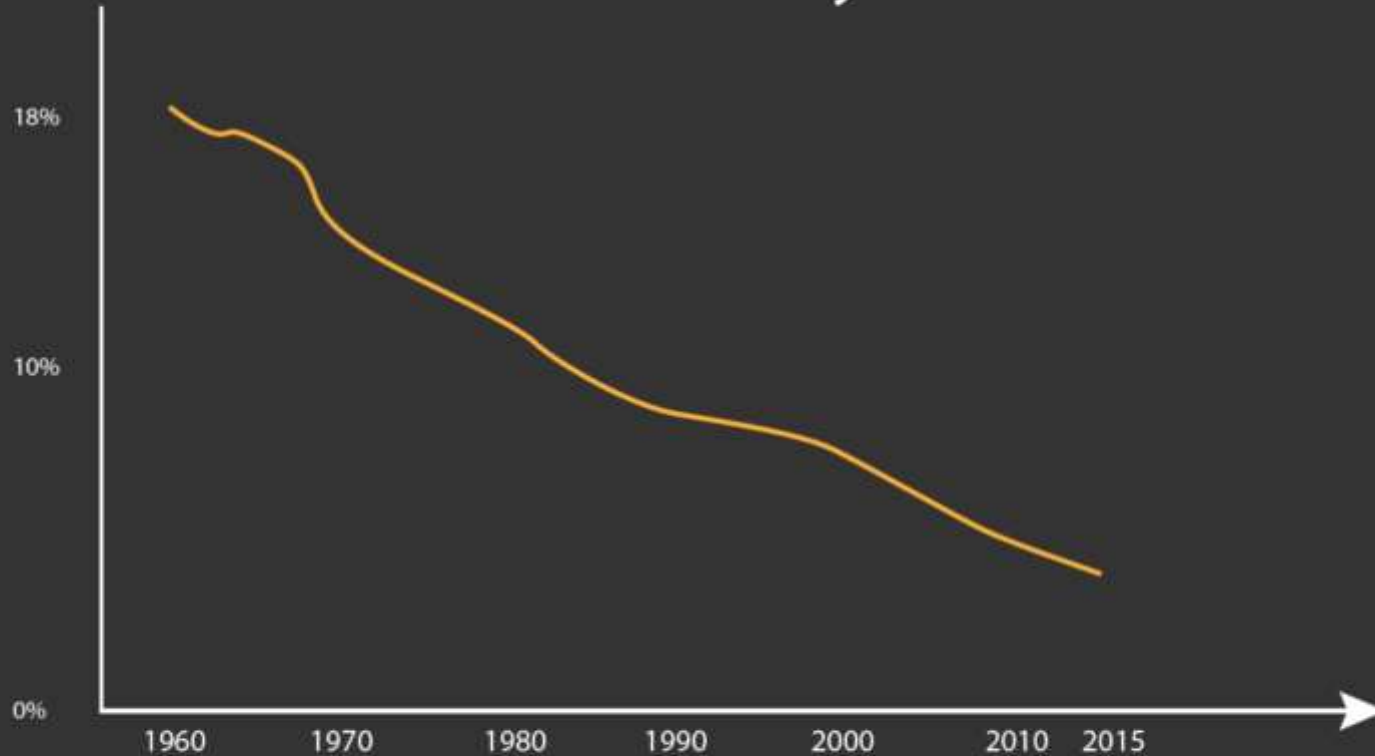
Source: World Bank

Global Human Rights Protection Score



Source: humanrightsscores.org

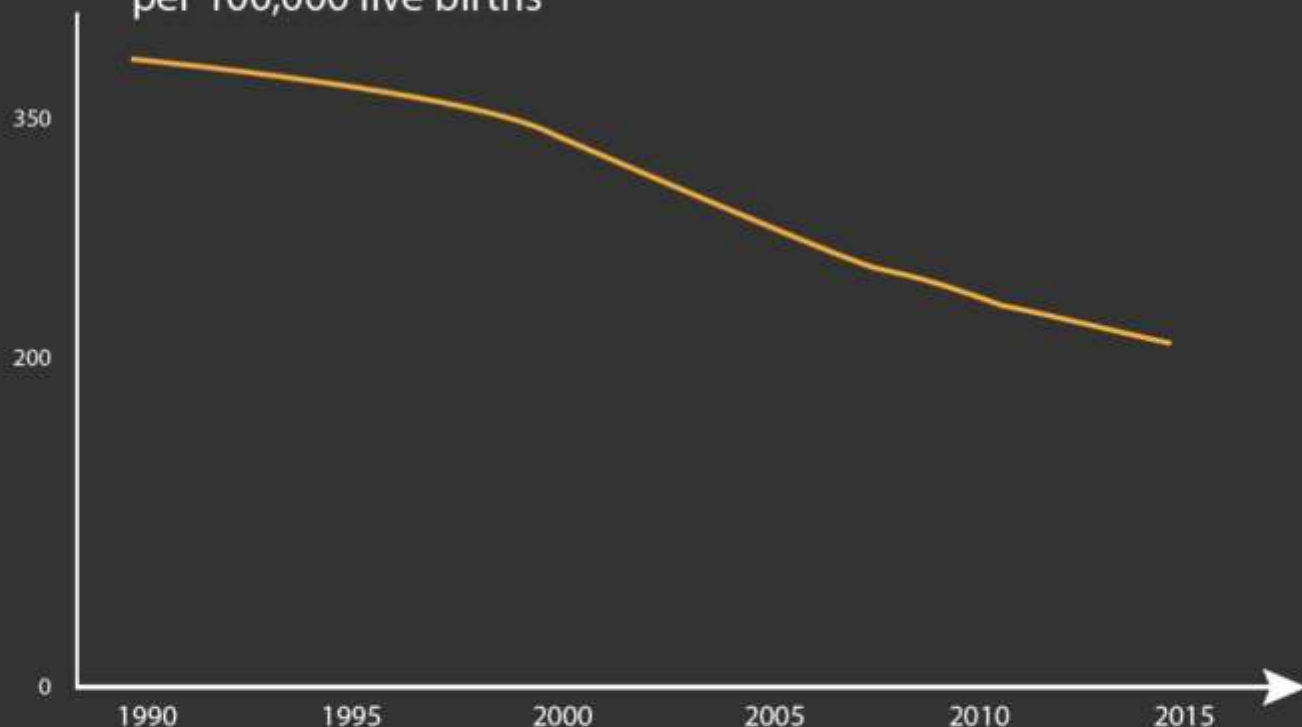
Global Child Mortality



Source: World Bank

Global Maternal Mortality

per 100,000 live births



Source: World Bank and Gapminder

A close-up photograph of an astronaut in a white space suit floating in space. The astronaut's helmet is reflective, showing a distorted view of the surrounding environment. The suit is equipped with various instruments and patches, including a NASA patch and an American flag. The background is a vibrant blue Earth with white clouds. A semi-transparent dark rectangle is overlaid on the center of the image, containing white text.

The story of technology is
overwhelmingly positive

The image features a dark, circular object, possibly a planet or moon, centered against a black background filled with faint, distant stars. A bright, glowing blue ring of light encircles the top of the dark sphere, creating a halo effect. The text "The Stars Await" is written in a white, serif font across the middle of the image, partially overlapping the dark sphere.

The Stars Await



Change is Hard

The whirlwind of
change demands
a response.



“To rebuild trust and restore faith in the system, institutions must step outside of their traditional roles and work toward a new, more integrated operating model that puts people — and the addressing of their fears — at the center of everything they do.”

Introduction to the 2017 Edelman Trust Barometer

The Library of the Future

The image shows a vast, modern library interior. A massive, curved, multi-level staircase dominates the left and center of the frame, with people walking on it. The staircase is made of light-colored stone or concrete. To the right, a large glass facade with dark frames allows natural light into the space. The ceiling is high and features a series of curved, horizontal bands. The overall design is clean, minimalist, and futuristic.

What our community has expressed...

- 1 | Alienated from neighbors
- 2 | Unhappy with traffic
- 3 | Want things to slow down

“When the going
gets tough,
the tough get
a librarian.”

Joan
Bauer
Author





Donald J. Trump

@realDonaldTrump



Follow



Mommy took me to the Library ZERO times. Sad!

RETWEETS

8,866

LIKES

37,082



6:23 AM - 18 Mar 2017

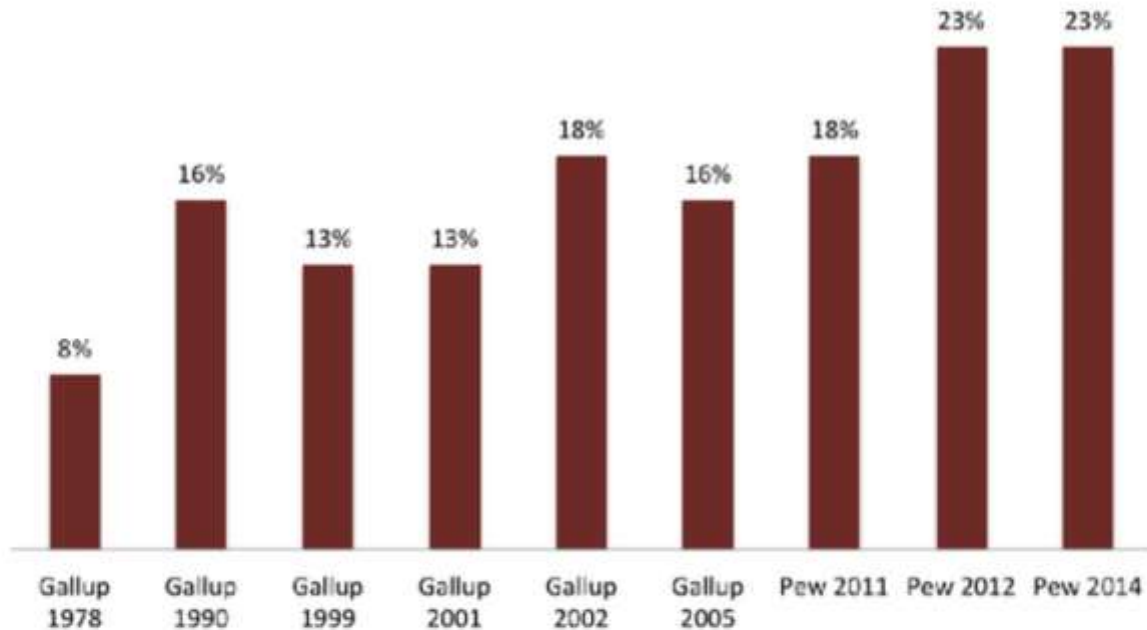


Libraries are a
Public Asset

A hand is holding a black smartphone. The screen of the phone displays a large red YouTube play button logo. A semi-transparent dark grey rectangular box is overlaid on the center of the image, containing white text. The background is a blurred, light-colored surface.

But the context
is changing

Percent of Americans Who Didn't Read a Book During the Past Year



SOURCES: [PEW 2014](#), [PEW 2012](#), AND [GALLUP](#)

Online Video Learning

- Students report online video is positive to their engagement and learning ([Vanderbilt, 2015](#))
- Teachers report online video is effective ([Kaltura, 2017](#))
- Online Video is no less effective than in-person learning ([USDE Meta Study, 2010](#))
- Online Video just needs to be done right to work best

Tech Programming

Libraries should definitely...

Pew Research (2015). Libraries at the Crossroads



Offer programs on how to use digital tools



Offer programs on online security and privacy



Buy 3D printers and digital tools for public use

Access to Technology at Libraries

Pew Research (2013). Library Services in the Digital Age



Americans say they are very likely or somewhat likely to use Tech Petting Zoos at Libraries.

A panel discussion featuring five individuals (three women and two men) seated on a stage in front of a wooden backdrop. Each person has a microphone in front of them. The word "Lectures" is overlaid in large white text.

Lectures

A classroom setting where several students are seated at desks, working on laptops. A presentation screen is visible in the background. The words "Coding Robots" are overlaid in large white text.

Coding Robots

A woman and a young child are sitting at a table, interacting with a small white mobile robot. The robot has a screen on top. The words "Tech Serendipity" are overlaid in large white text.

Tech Serendipity

A close-up shot of a hand using a pen to draw on a green sticky note. A smartphone with various app icons is visible in the foreground. The words "Building Apps" are overlaid in large white text.

Building Apps

A man in a blue t-shirt is working on a custom-built PC case, using a screwdriver. The case is open, revealing internal components. The words "PC Building" are overlaid in large white text.

PC Building

Emergent Job Descriptions



Skokie Public Library
Digital Literacy Specialist




SJPL
Technology & Innovation Manager



San Diego Public Library
Technology Resources Program Manager



Say “Digital
Literacy” Again!

A close-up, profile view of a person's head, facing right. The person has short, dark hair and is wearing a dark jacket with a red and blue plaid collar. The background is out of focus, showing warm, circular bokeh lights in shades of orange, yellow, and red, suggesting an indoor setting with many lights.

Maybe what we need is

Change Literacy

Toward Change Literacy

New Services, Programs and Collections



Access to Tech



Change Conversations



Access to Ideas and
Thought Leaders



Collections for Change
Literacy

Focused on Change

New missions, new librarians



Fund Change



Change the MLIS



Tech on Board (Library Boardmember)



Hiring Change Agents



Staff Training

Community Technologist

Change agents need only apply



Tech Generalist

Coder
Explorer
Maverick



Teacher

Trained in learning strategy
Confident
Empathic



Public Advocate

Trained in Harwood
methodology
Liaison to business/industry



Partner

Matchmaker
Develops programs
Collaborates with experts

Money is out there!

- PLP Innovation Grants
- State Library Services and Technology Act LSTA Grants
- ALA Future of Libraries
- IMLS National Grants

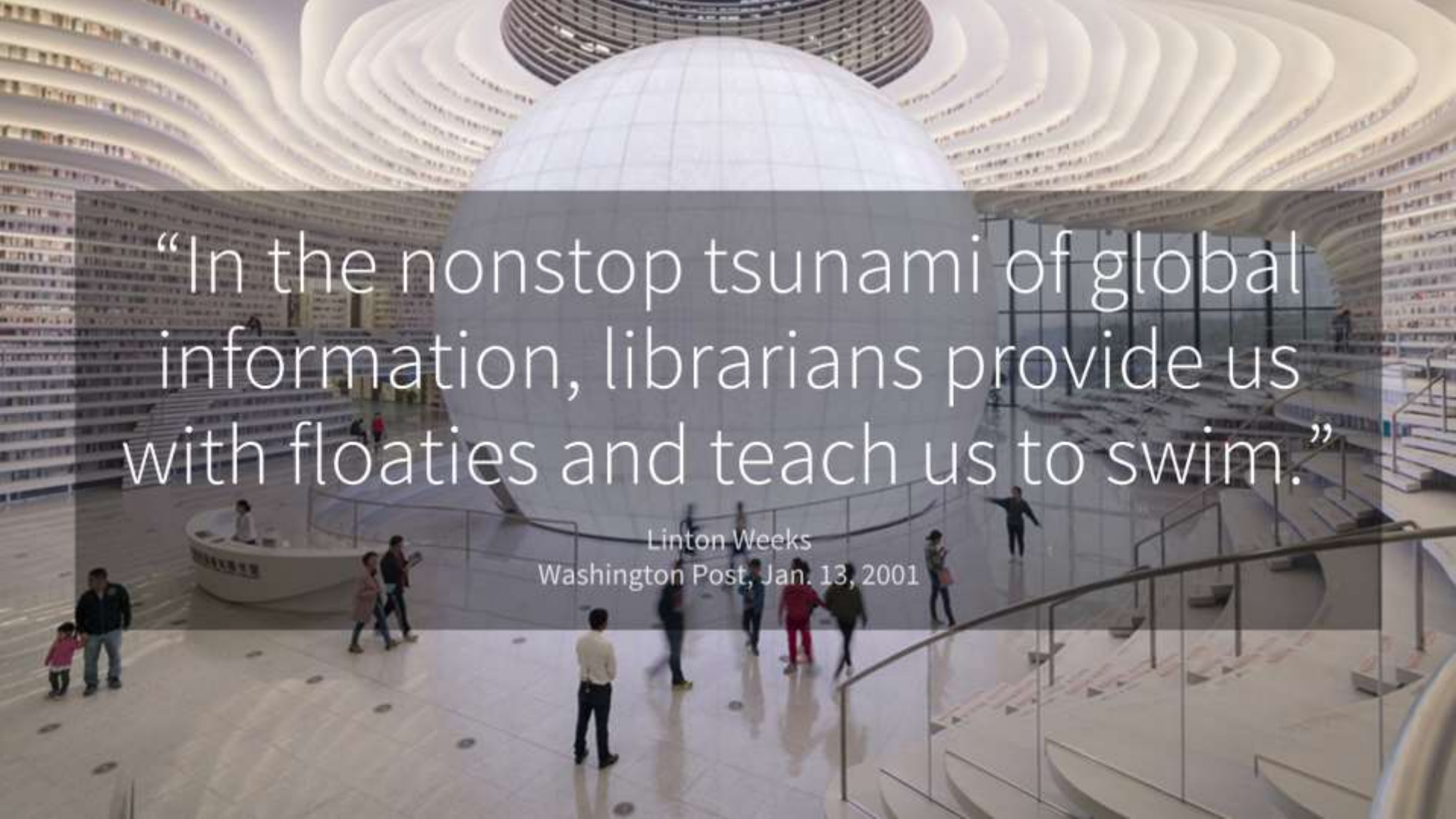
An aerial, top-down view of a dense urban landscape, likely a city like Hong Kong, where numerous high-rise buildings and green spaces are packed closely together. The entire cityscape is arranged in a circular, globe-like shape, with the edges fading into a light gray background. The perspective is from directly above, looking down on the city.

We Are Legion

9,057 Public Library Systems
17,000+ Public Library Buildings



A Place for Change

The background image shows the interior of a modern library. A large, white, spherical structure is the central focus. It is surrounded by curved, multi-level bookshelves that spiral upwards. The floor is polished and reflective. Several people are walking around the sphere, and a small circular platform is visible on the left. The lighting is bright and even.

“In the nonstop tsunami of global information, librarians provide us with floaties and teach us to swim.”

Linton Weeks
Washington Post, Jan. 13, 2001



Change starts here →

Thanks!



M Ryan Hess
Library Services Manager - Digital Initiatives
Palo Alto City Library