



Insurance in an Exponential World

Bill Hartnett
Head of Innovation
ACORD

"Insurance is the DNA of capitalism. Buildings and homes don't get built, lives can't be repaired, products aren't made, food doesn't get produced, and services can't be delivered without it. Insurance is vital to the modern global economy, and navigating these megatrends will increasingly define our success in helping to propel it."

Joe Plumeri, Willis Group Chairman & CEO, 2/27/2008
A.M. Best Company's 15th Annual Review and Preview Conference



Risk 101

Three ways to manage risk

- ✓ Eliminate it
- ✓ Transfer it
- ✓ Insure it



Insurance 101

- ✓ Law of Large Numbers
- ✓ Spread of Risk



The Future Circa 1954



“It is not too much to expect that our children will enjoy electrical energy in their homes too cheap to meter” – Lewis Strauss, Chairman AEC

Exponential growth

1 The accelerating pace of change ...

Agricultural Revolution → 8,000 years → Industrial Revolution → 120 years → Light-bulb → 90 years → Moon landing

2 ... and exponential growth in computing power ...

Computer technology, shown here climbing dramatically by powers of 10, is now progressing more each hour than it did in its entire first 90 years

COMPUTER RANKINGS

By calculations per second per \$1,000



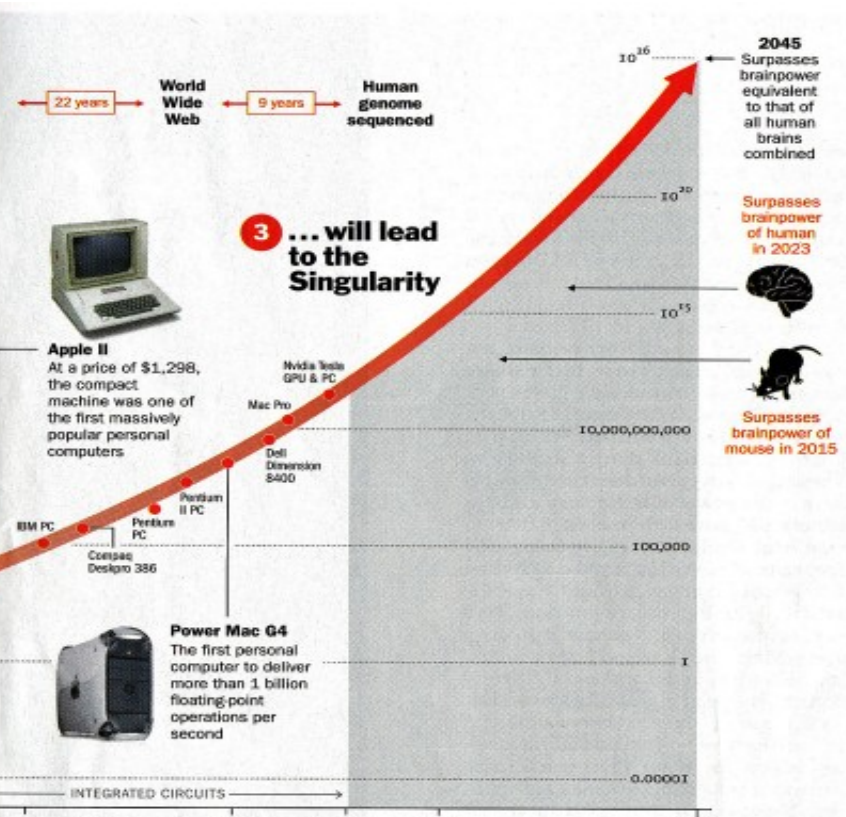
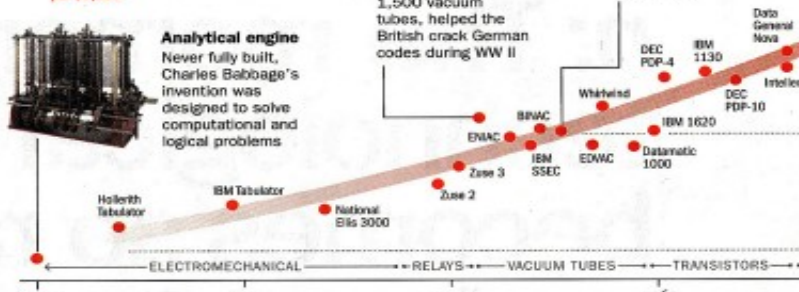
Analytical engine
Never fully built, Charles Babbage's invention was designed to solve computational and logical problems



Colossus
The electronic computer, with 1,500 vacuum tubes, helped the British crack German codes during WW II



UNIVAC I
The first commercially marketed computer, used to tabulate the U.S. Census, occupied 943 cu. ft.



The New York Times

Science | NYT Now

Scientists Report Finding Reliable Way to Teleport Data



Blockchain technology will change financial markets forever

Published on May 22, 2014

Wall Street Journal

**Uber Gets an Uber-Valuation
Car Service Secures \$1.2 Billion in Funding, Valuing It at \$18.2 Billion,
Among Highest Ever – June 9, 2014**



THE GLOBAL INTERNET POPULATION GREW 18.5% FROM 2013–2015 AND NOW REPRESENTS

3.2 BILLION PEOPLE.

March 11, 2013 8:15 pm

Facebook reveals secrets you haven't shared

By Bede McCarthy and Robert Cookson



The increasing amount of personal information that can be gleaned by computer programs that track how people use [Facebook](#) has been revealed by an extensive academic study.

Such programs can discern undisclosed private information such as Facebook users' sexuality, drug-use habits and even whether their parents separated when they were young, according to the study by the University of Cambridge academics.

Unreported Side Effects of Drugs Are Found Using Internet Search Data, Study Finds

By JOHN MARKOFF

Published: March 6, 2013 | 184 Comments

The New York Times

Using data drawn from queries entered into Google, Microsoft and Yahoo search engines, scientists at Microsoft, Stanford and Columbia University have for the first time been able to detect evidence of unreported prescription drug side effects before they were found by the [Food and Drug Administration](#)'s warning system.

Multimedia



Software and Side Effects

Using automated software tools to examine queries by six million Internet users taken from Web search logs in 2010, the researchers looked for searches relating to an antidepressant, paroxetine, and a cholesterol lowering drug, pravastatin. They were able to find evidence that the combination of the two drugs caused high blood sugar.

f FACEBOOK

t TWITTER

g+ GOOGLE+

SAVE

E-MAIL

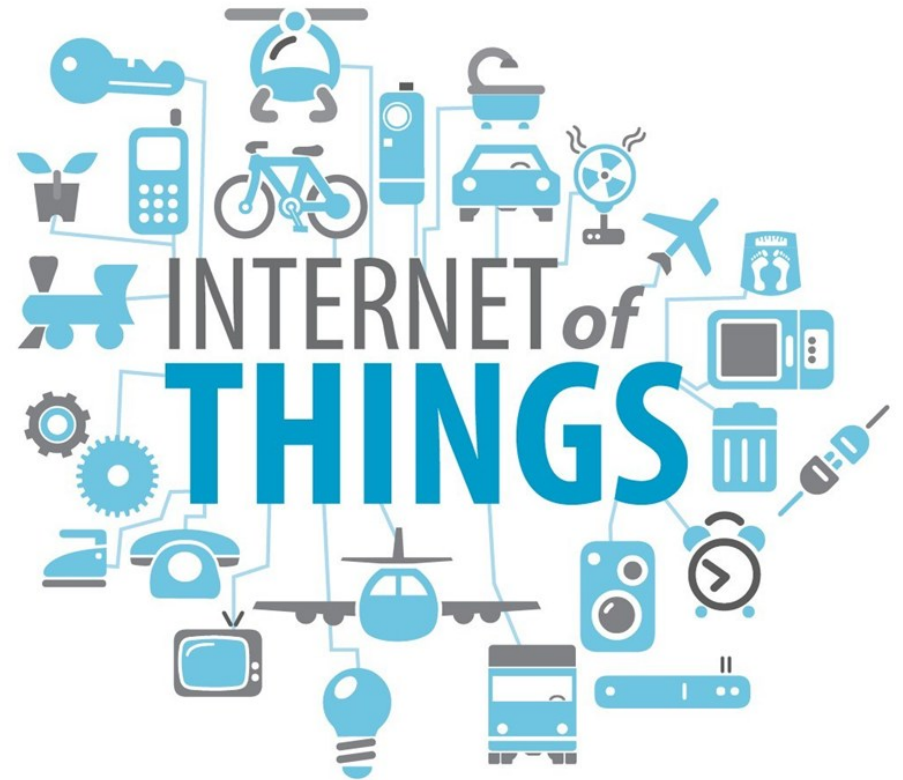
SHARE

PRINT

REPRINTS

STOKER
NOW PLAYING

DISRUPTION



Internet of Things

Innovation? OR ALREADY OBSOLETE?



Cars



Autonomous Semis



<https://youtu.be/RjRaVExmwVk>

THE GUARDHAT **IMPACT**

OVER 4000 LIVES
LOST ON THE JOB IN
THE U.S. ANNUALLY

\$250+ BILLION
SAFETY COST FOR U.S.
BUSINESSES PER YEAR

GUARDHAT COULD SAVE
HUNDREDS OF LIVES



GUARDHAT COULD SAVE
BILLIONS OF DOLLARS



SAVES
LIVES

ADDRESSES LEADING
CAUSES OF ACCIDENTS AND
ENABLES FASTER RESPONSE
TO INCIDENTS.



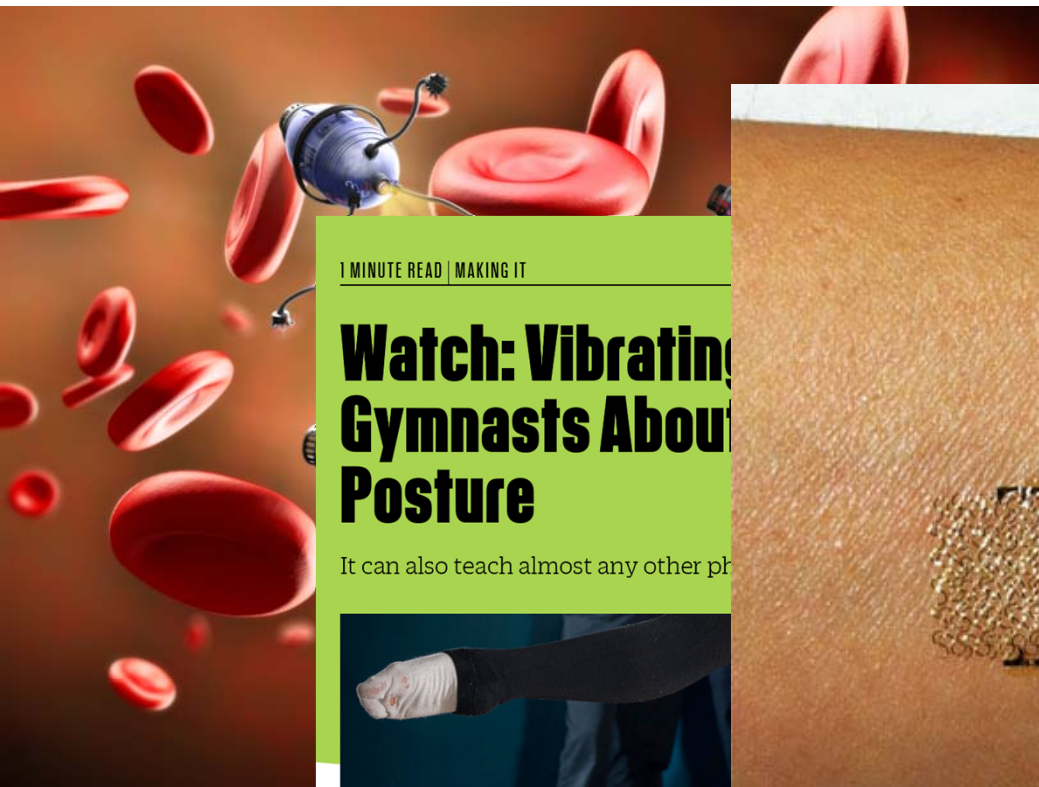
REDUCES
COST

SAVES INSURANCE EXPENSES
AND COST DUE TO LOST TIME BY
REDUCING NUMBER OF ACCIDENTS
AND THEIR SEVERITY.



IMPROVES
EFFICIENCY

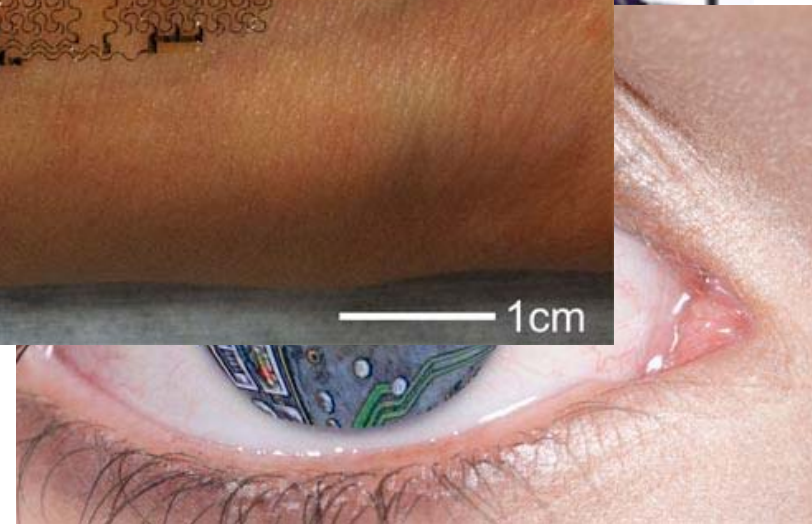
ENHANCES PREVENTATIVE
MAINTENANCE AND ENABLES
REAL-TIME COMMUNICATION
WITH FRONTLINE WORKERS.



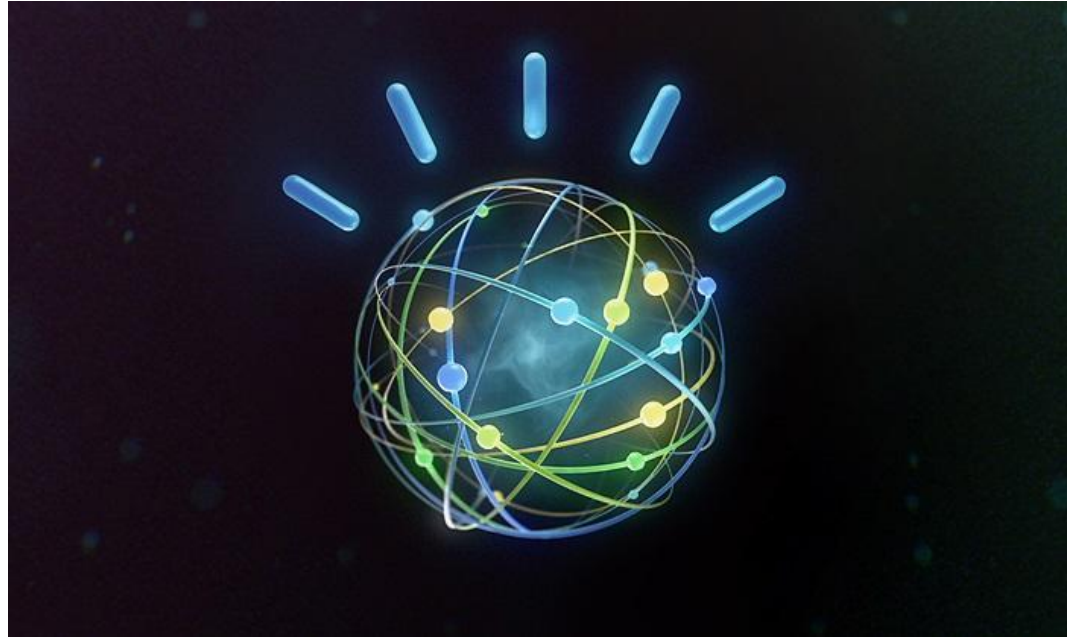
1 MINUTE READ | MAKING IT

Watch: Vibrating Gymnasts About Posture

It can also teach almost any other ph



DISRUPTION



DISRUPTION



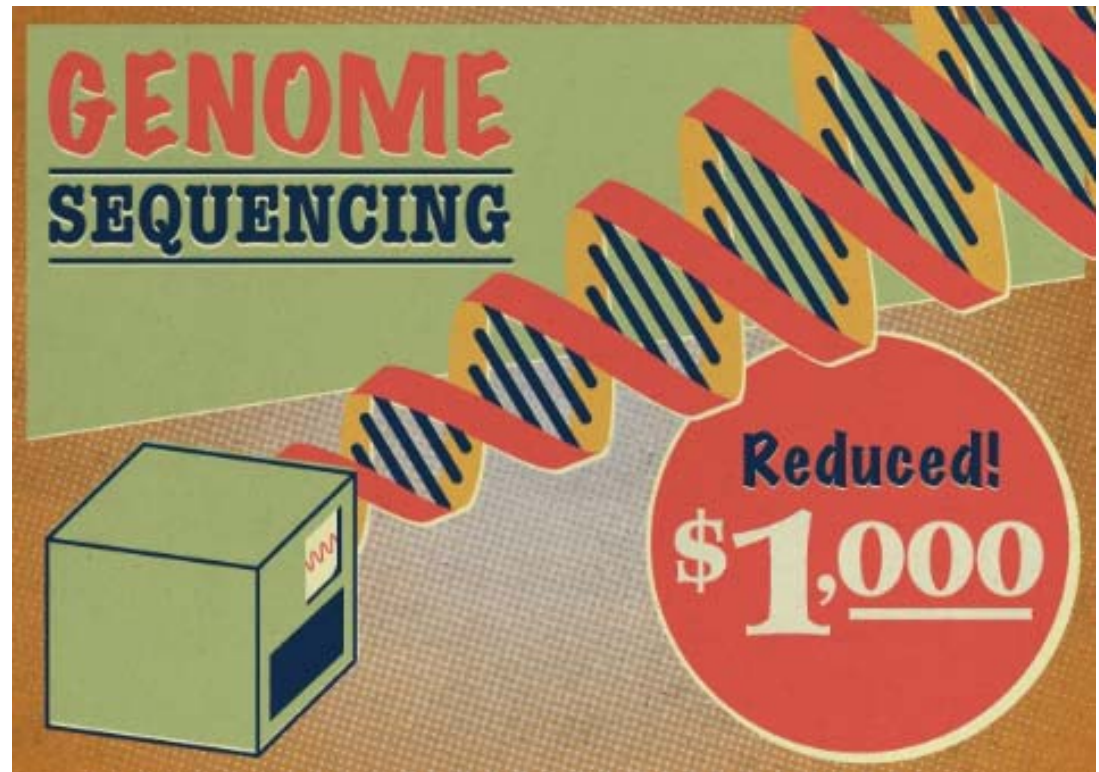
Drones

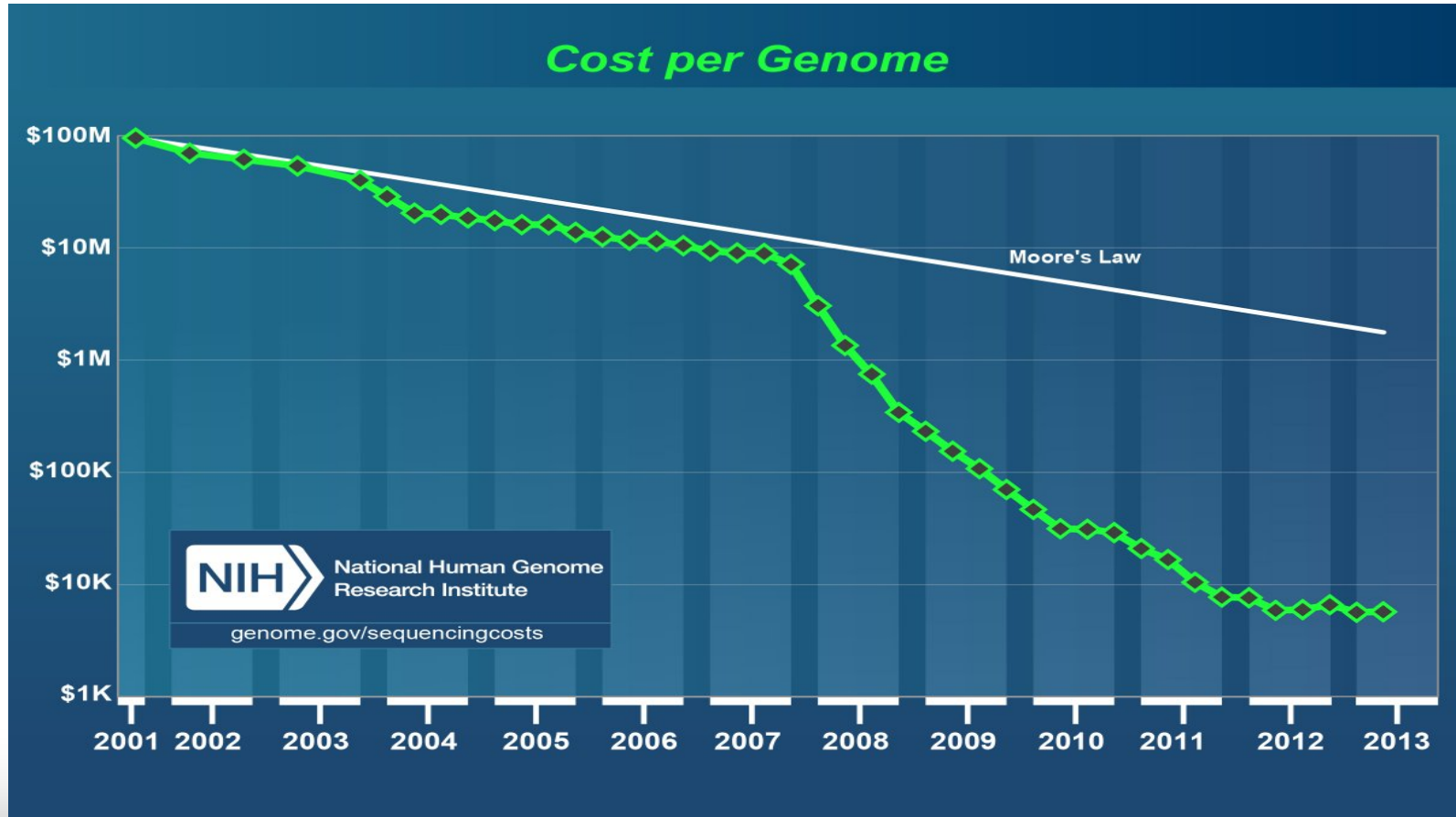


© Biology Forums



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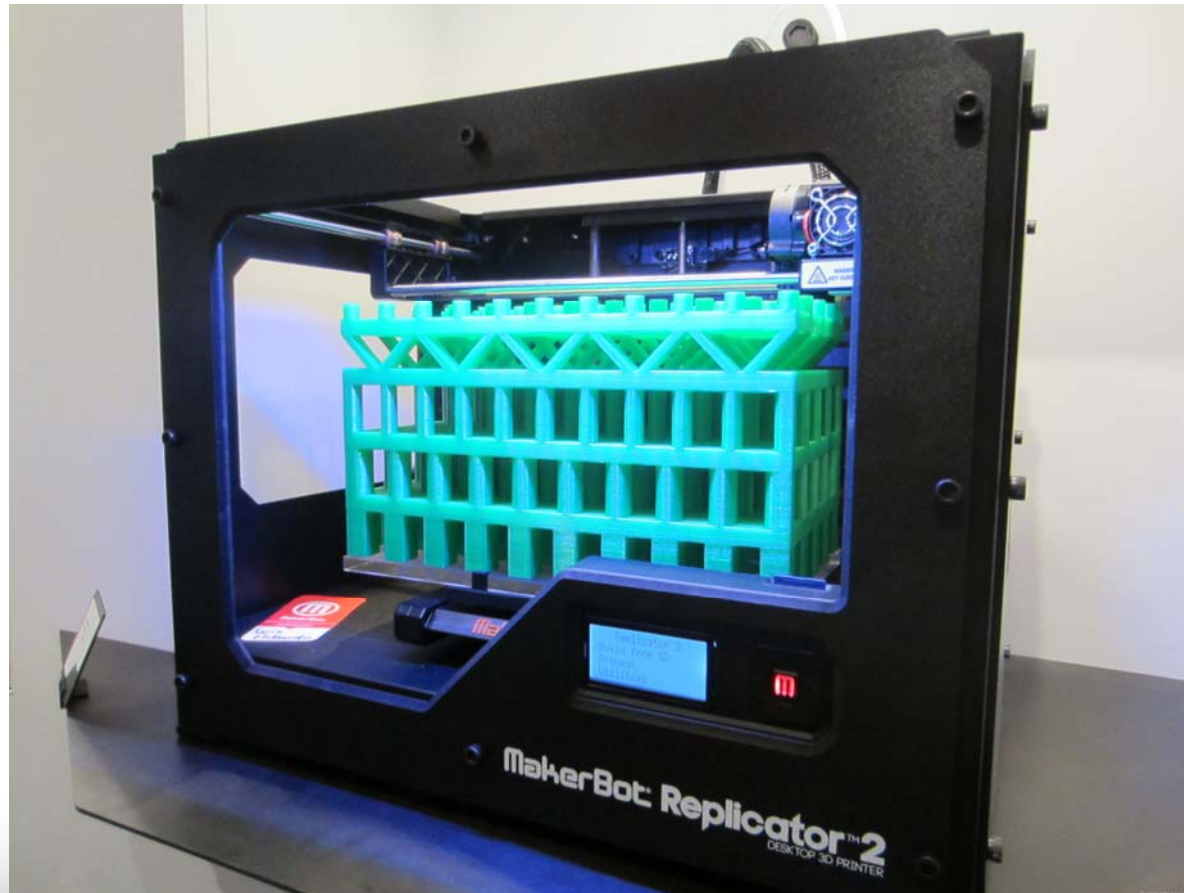


Death is Obsolete
How to live longer through science & technology



DISRUPTION





3D Printed homes





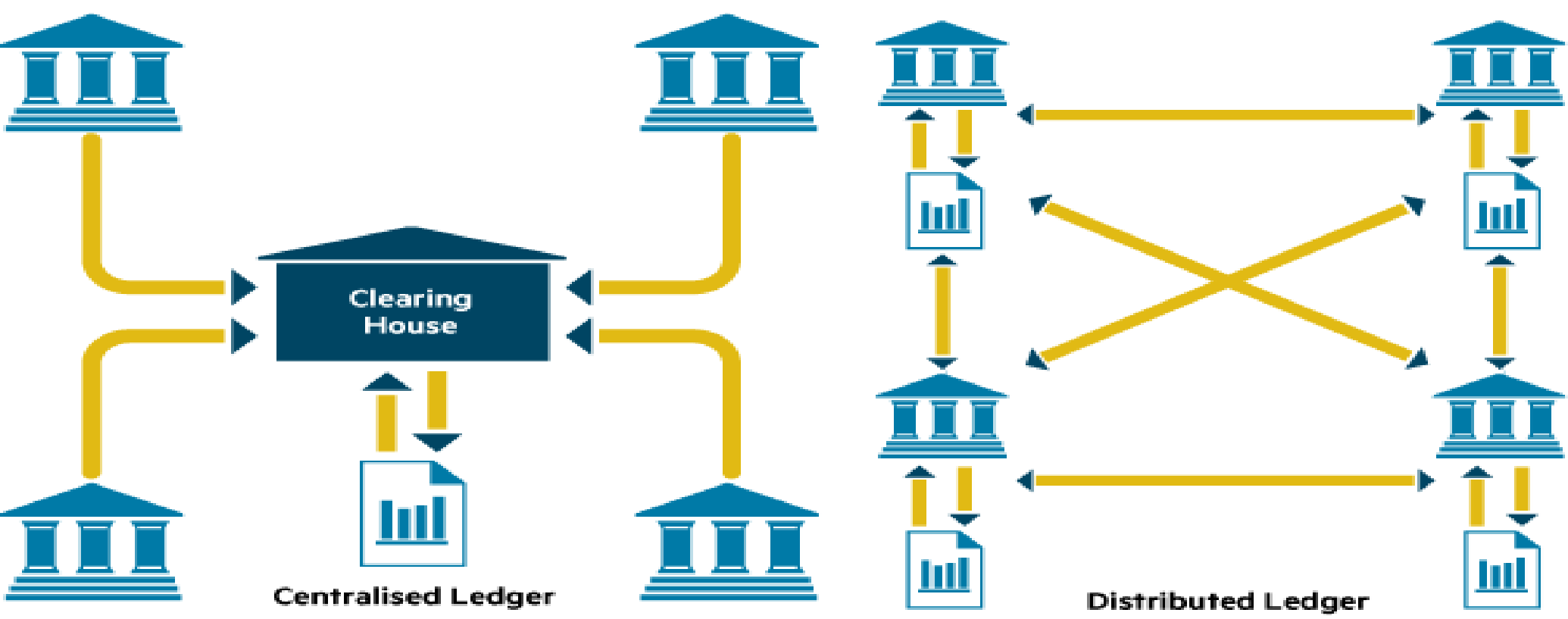
DISRUPTION



Blockchain aka Mutual Distributed
Ledgers

Embedding distributed ledger technology

A distributed ledger is a network that records ownership through a shared registry



In contrast to today's networks, distributed ledgers eliminate the need for central authorities to certify ownership and clear transactions. They can be open, verifying anonymous actors in the network, or they can be closed and require actors in the network to be already identified. The best known existing use for the distributed ledger is the cryptocurrency Bitcoin

FT graphic. Source: Santander InnoVentures, Oliver Wyman & Anthemis Partners

"Ledgers are the infrastructure of finance. Mutual distributed ledgers are pervasive and permanent. They will transform all financial trust architectures - exchanges, insurers, banks, and information providers." Professor Michael Mainelli, Executive Chairman of Z/Yen (2015)



Nick Szabo
@NickSzabo4

 Follow

Decentralization is what allows Bitcoin to substitute an army of computers for an army of accountants, investigators, and lawyers.

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9:57 PM - 3 Sep 2015

