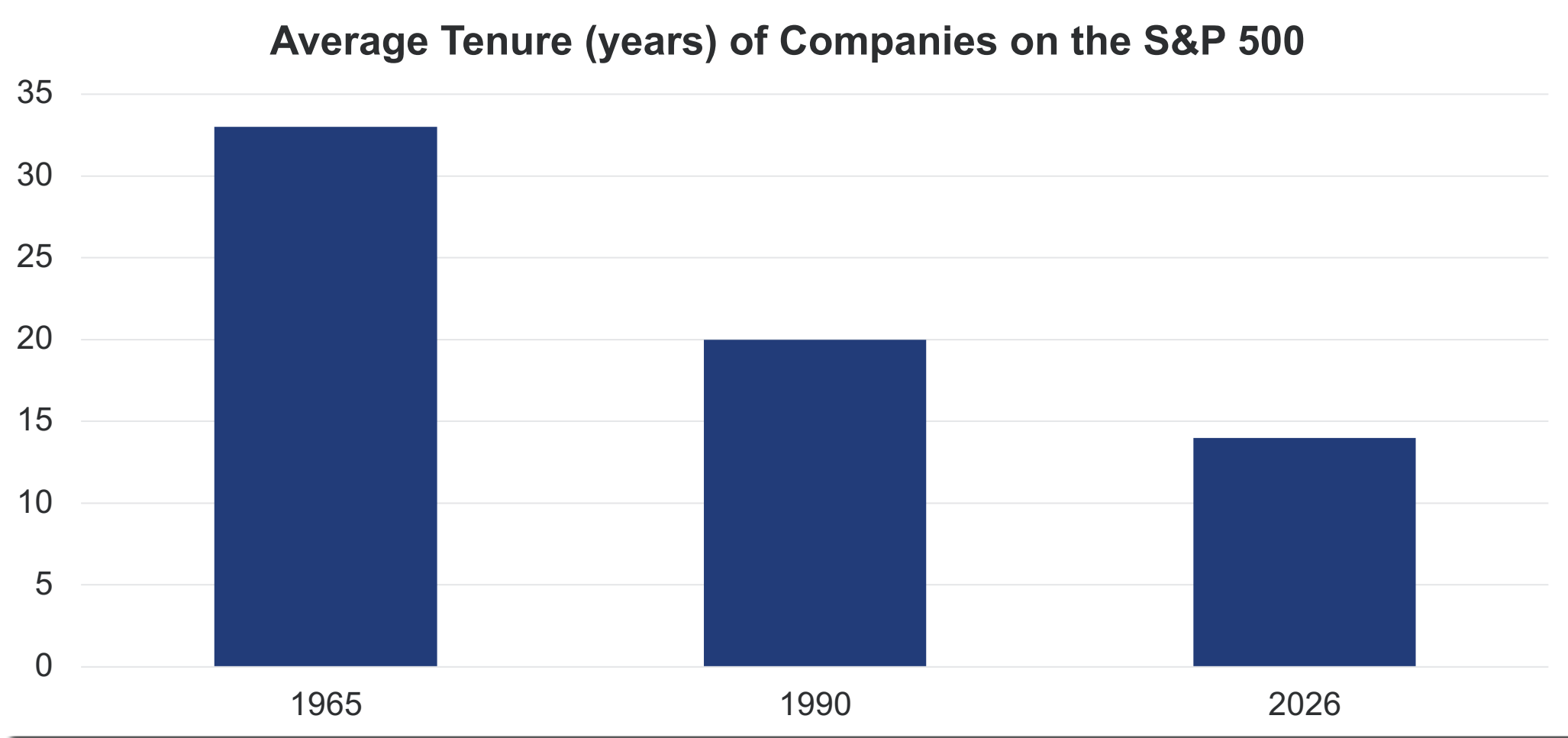




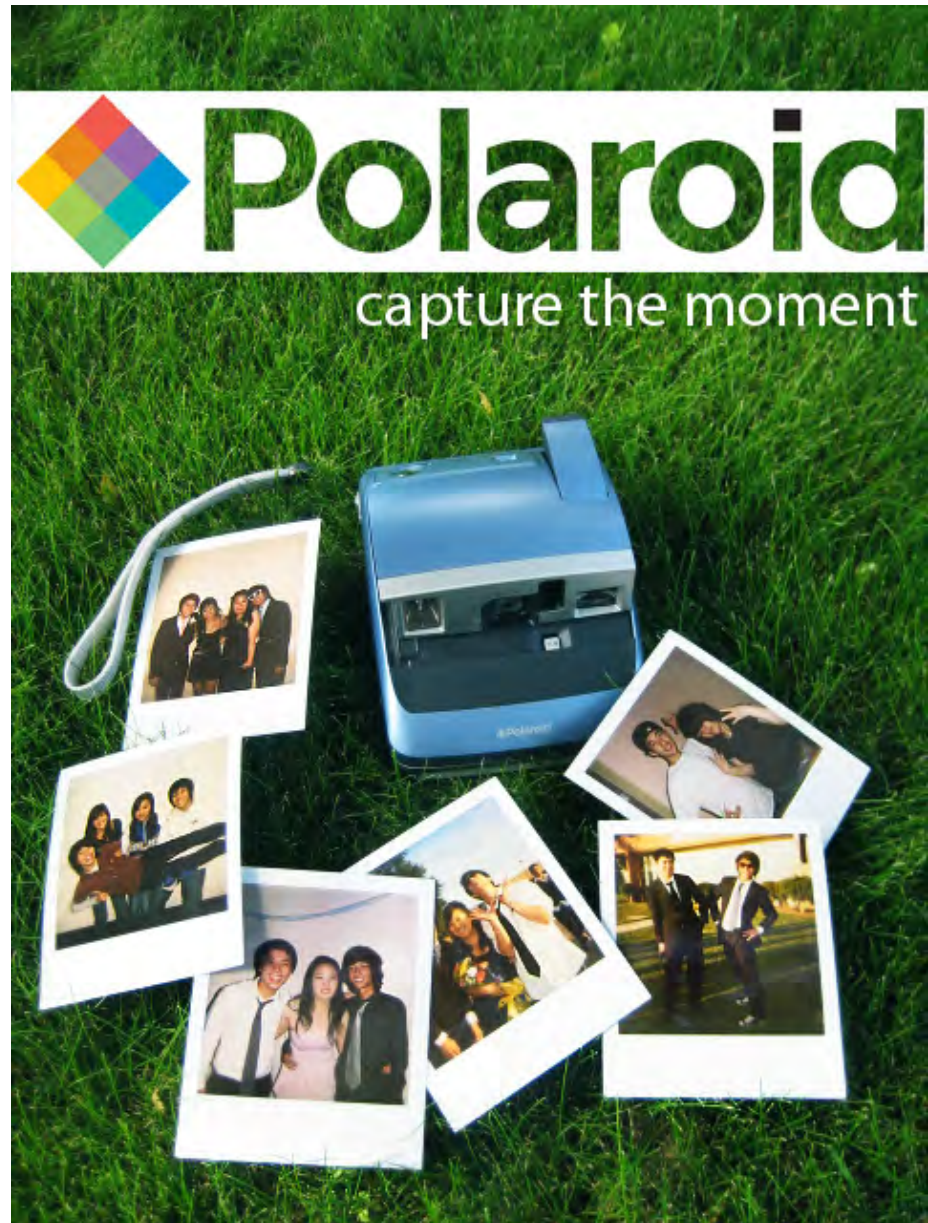
Urgency to Transform: From Data to Digital Business Model

Digital Disruption is Real

The largest companies are being disrupted

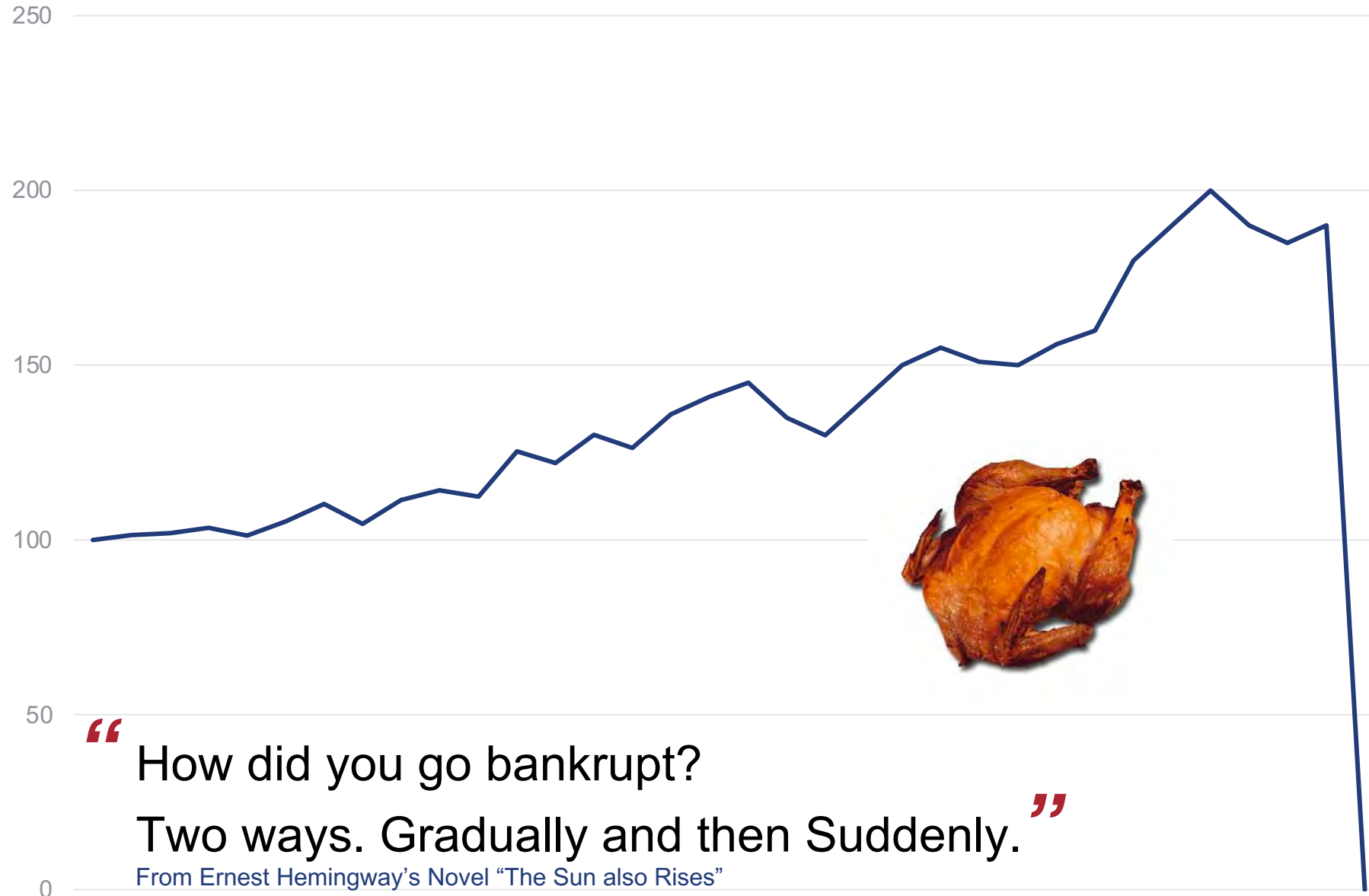


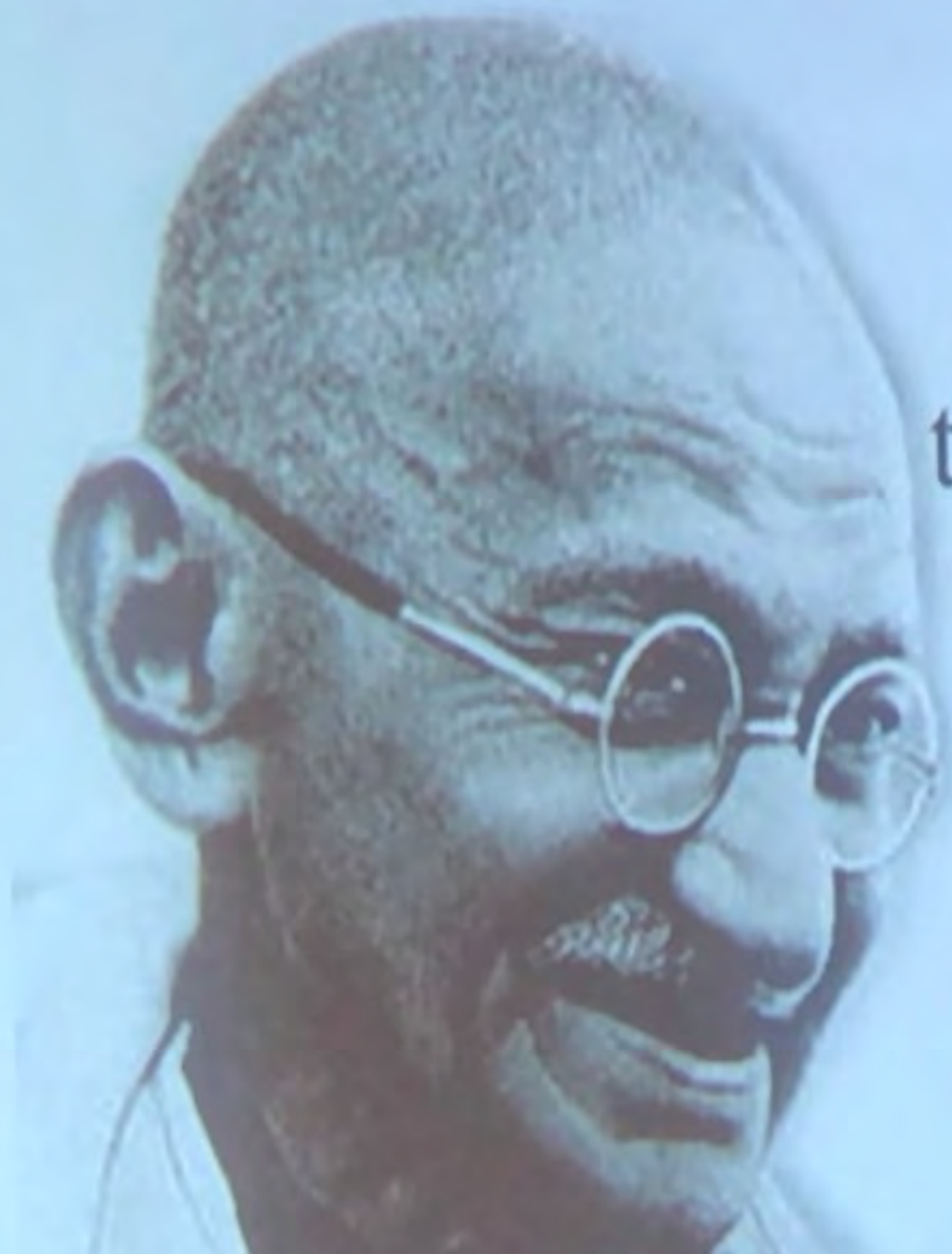
Who remembers these?



The new Kodak moment is when you realize that your customer's needs, preferences and behaviors have changed, but it is too late to make the necessary strategic moves.

Your job as a leader is to avoid this from happening



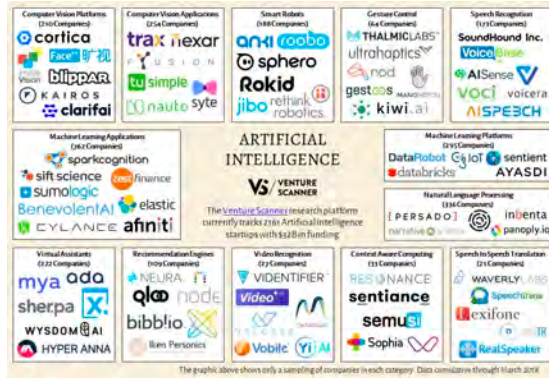


First they ignore you,
then they laugh at you,
then they fight you,
then you win.

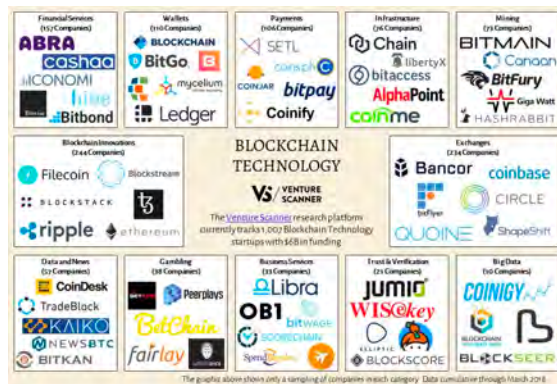
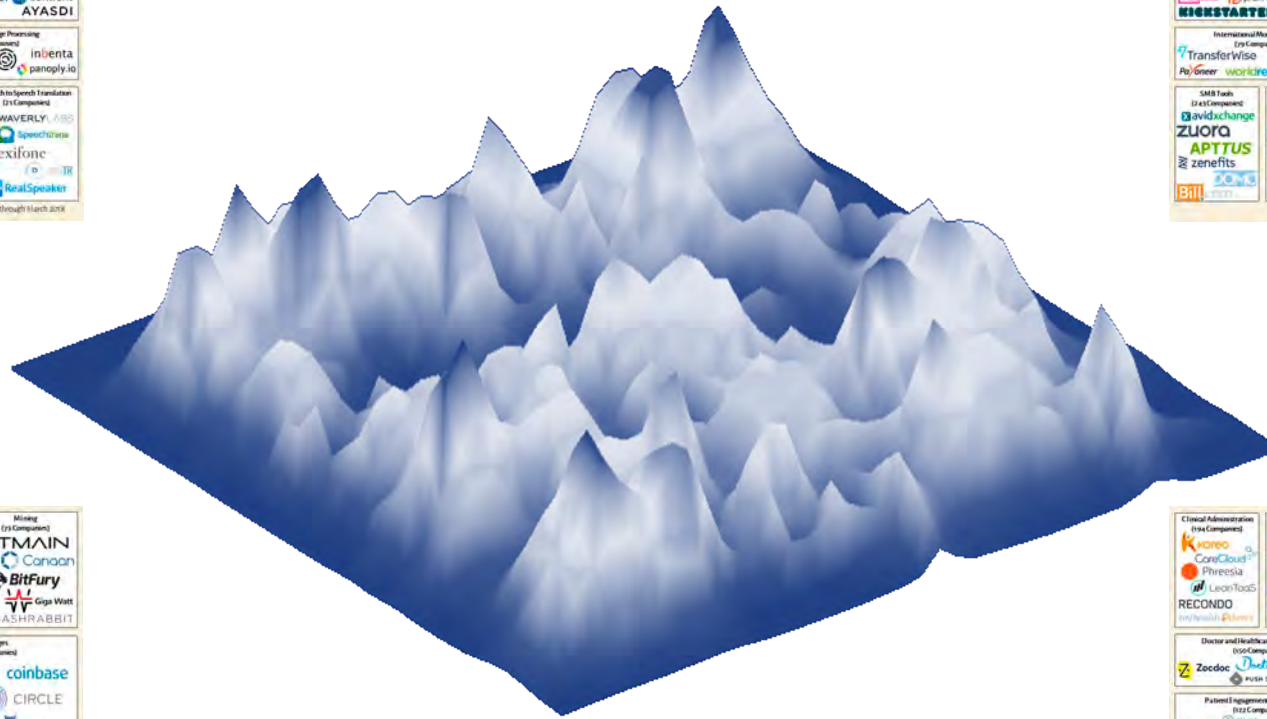
Mahatma Gandhi

What makes market leaders stumble?

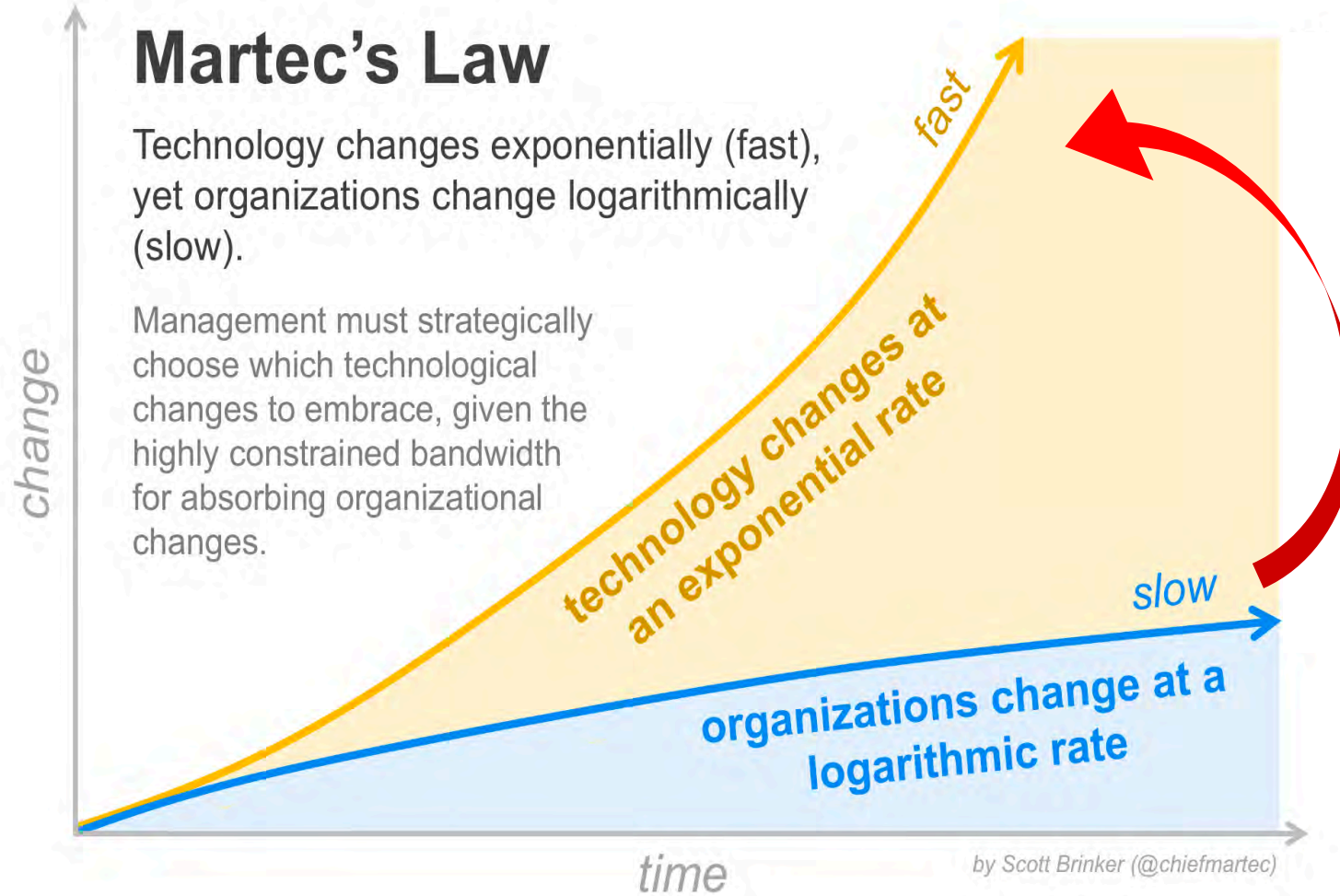
New players attack established players. But which ones are most dangerous???



Your business?



Technological Uncertainty (& Acceleration)



Leadership behavior
entrepreneurialism, agility,
responsibility, ...

Rethinking the strategy
mission, vision, business
model, operating model, ...

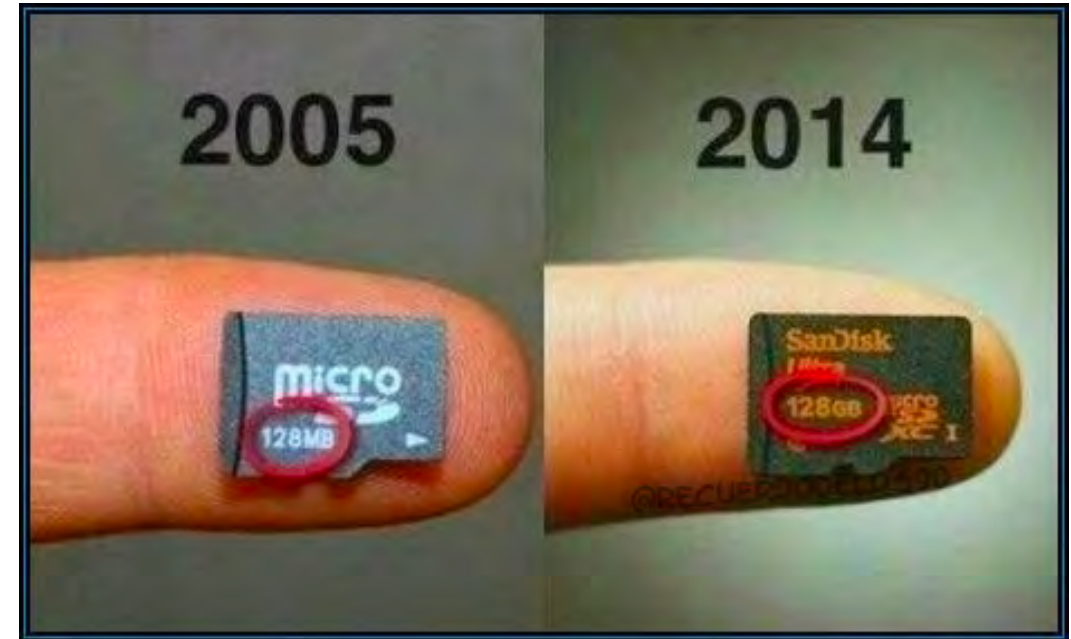
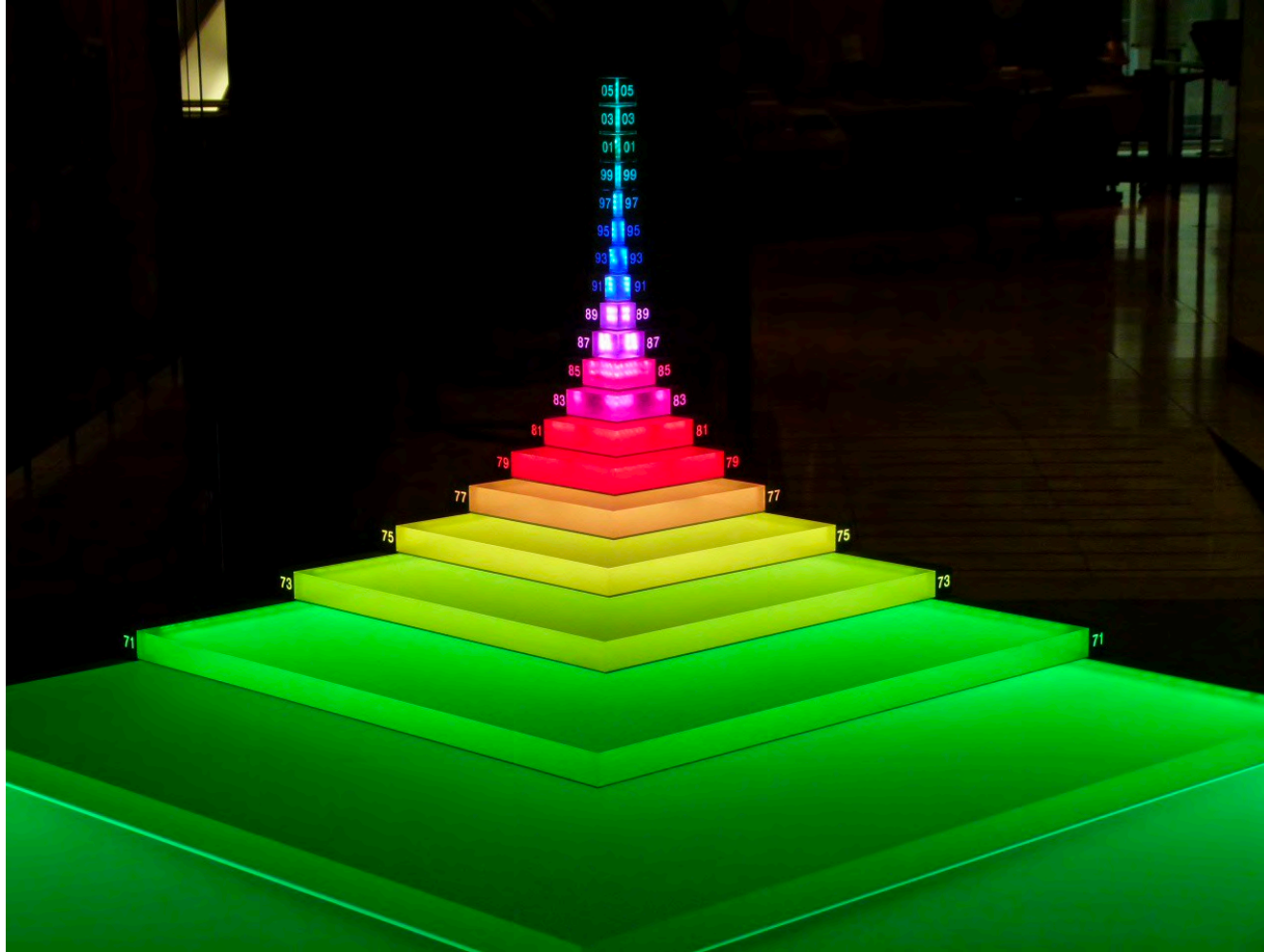
VUCA Leadership is Needed

Volatile
Uncertain
Complex
Ambiguous



Vision
Understanding
Clarity
Agility

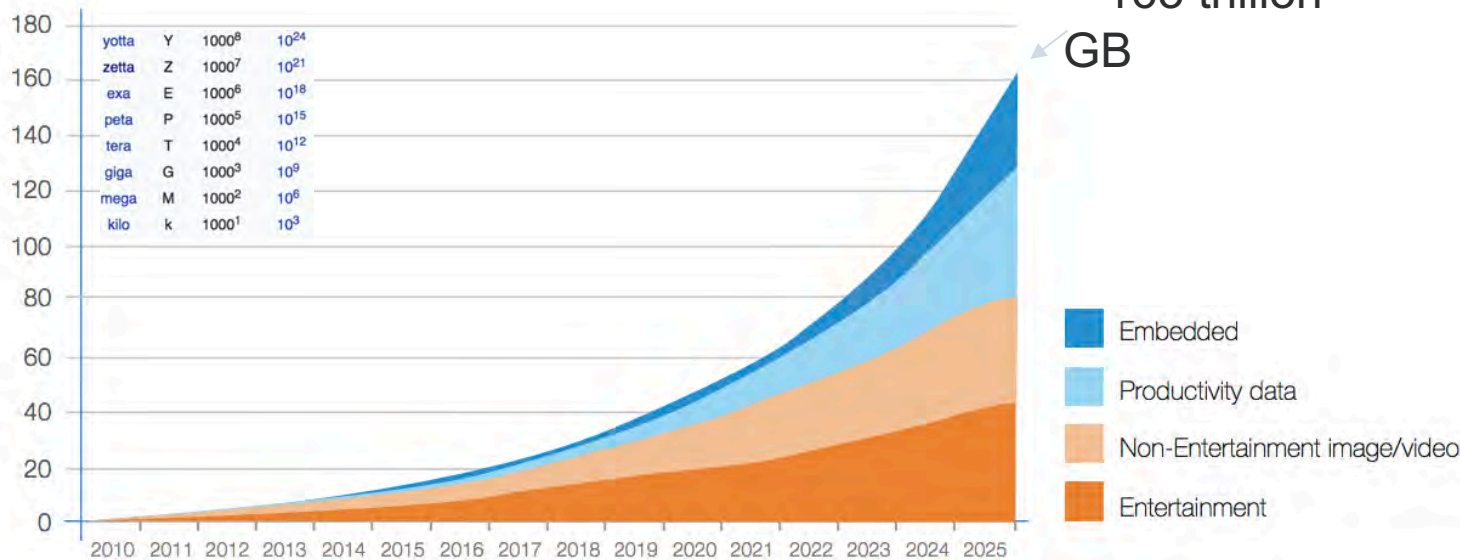
Moore's Law changes our lives



Source: Medium.com

Big data is getting bigger...

Big data is getting so big that Amazon is using trucks to move it around...



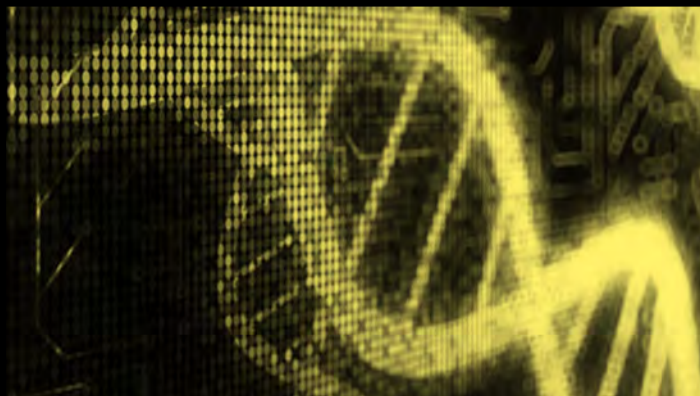
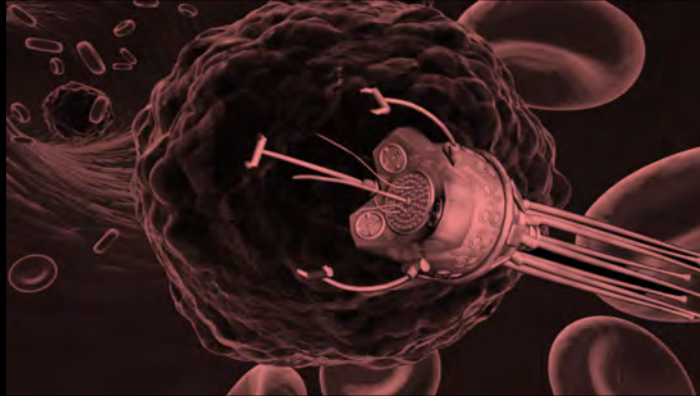
Dec 2, 2016 / by Daniel R. Stoller

BACK TO THE FUTURE: AMAZON WILL TRANSFER DATA TO CLOUD USING TRUCKS

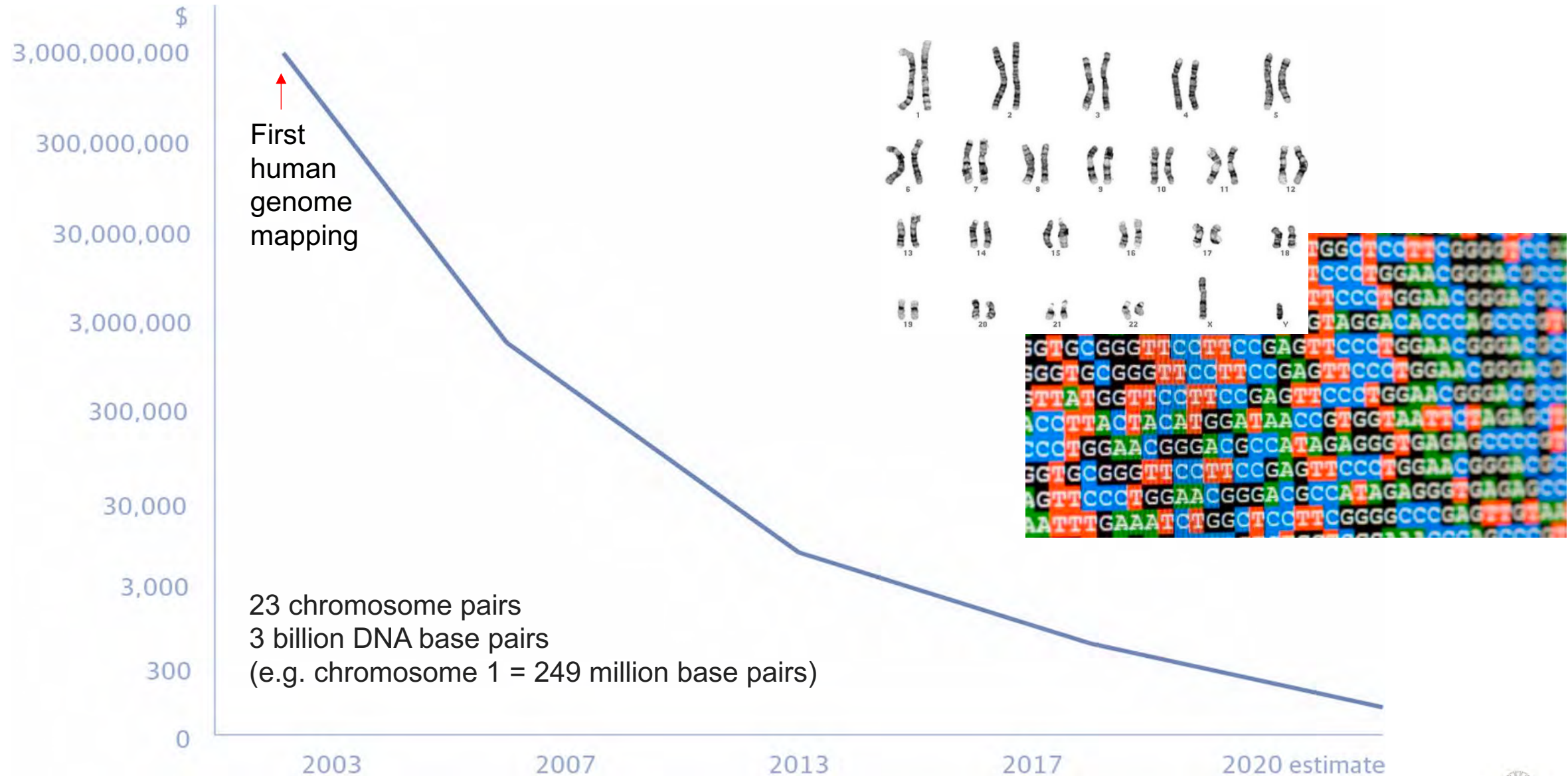


Various SciFi applications now become reality

AI
Robotics
Nanotech
Digital health
Smart cities
Smart grids
Smart factories
Autonomous vehicles
...



Various SciFi applications now become reality

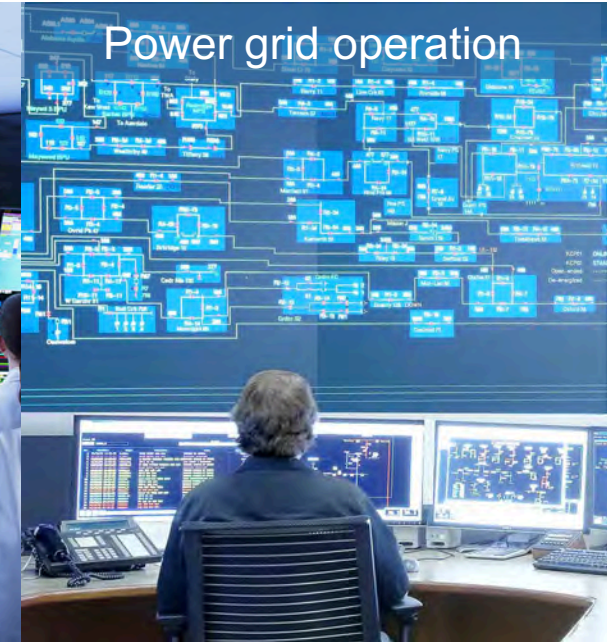


Trends: Role of Data in the World: By 2025...

Trend 1

Data becomes Life-Critical

20% of data in the global datasphere will be **critical to our daily lives** and 10% will be hypercritical.



Trends: Role of Data in the World: By 2025...

Trend 2

Mobile & Real-Time Data

Data will need to be instantly available. More than **25% of data** created in the global datasphere will be **real-time in nature**, and 95% of this will be IoT data



Trends: Role of Data in the World: By 2025...

Trend 3

Embedded Systems and IoT

Standalone analog devices give way to connected digital devices.

An average connected person will

interact

with

connected

devices

nearly 4800 times per

day (once every 18 seconds).



Trends: Role of Data in the World: By 2025...

Trend 4

Cognitive & AI Systems

Vast amount of data allows for a new set of technologies and cognitive systems, such as machine learning, natural language processing, and AI. The **amount of data subject to data analysis will grow by a factor of 50 to 5.2 ZB**



Trends: Role of Data in the World: By 2025...

Trend 5

Security as a Critical Function

All this data opens up new vulnerabilities to private and sensitive information. There's a massive (and widening) gap between the data that requires security and the amount of data actually secured. Approximately

90% of all data created will require some level of **security**, but **less than 50% will be secured.**



Most Companies sit on a lot of Data...

... but don't do much with it or the data is actually not that valuable

- You might be sitting on a lot of data, but once it's "used" (e.g., for training prediction machines), it **loses it's value** (like oil that is burned)
- You're **probably also not the only one** with that kind of data, so it's less valuable
- Truly valuable data is the one that you **collect on a daily basis** in order to further train your machines.



Example Autonomous Vehicles



Descriptive

Sensing, Streaming:

Observes, records, and keeps track of what events have been happening (hindsight).

Diagnostic

Responsive:

Takes action based upon events that are currently happening in real-time (oversight).

Predictive

Learning, Agile:

Goes beyond simple “reporting” of past events or reacting to present events, to predicting what is likely to occur next, based upon those past and current events – i.e., training data (foresight).

Prescriptive

Contextual, Optimizing:

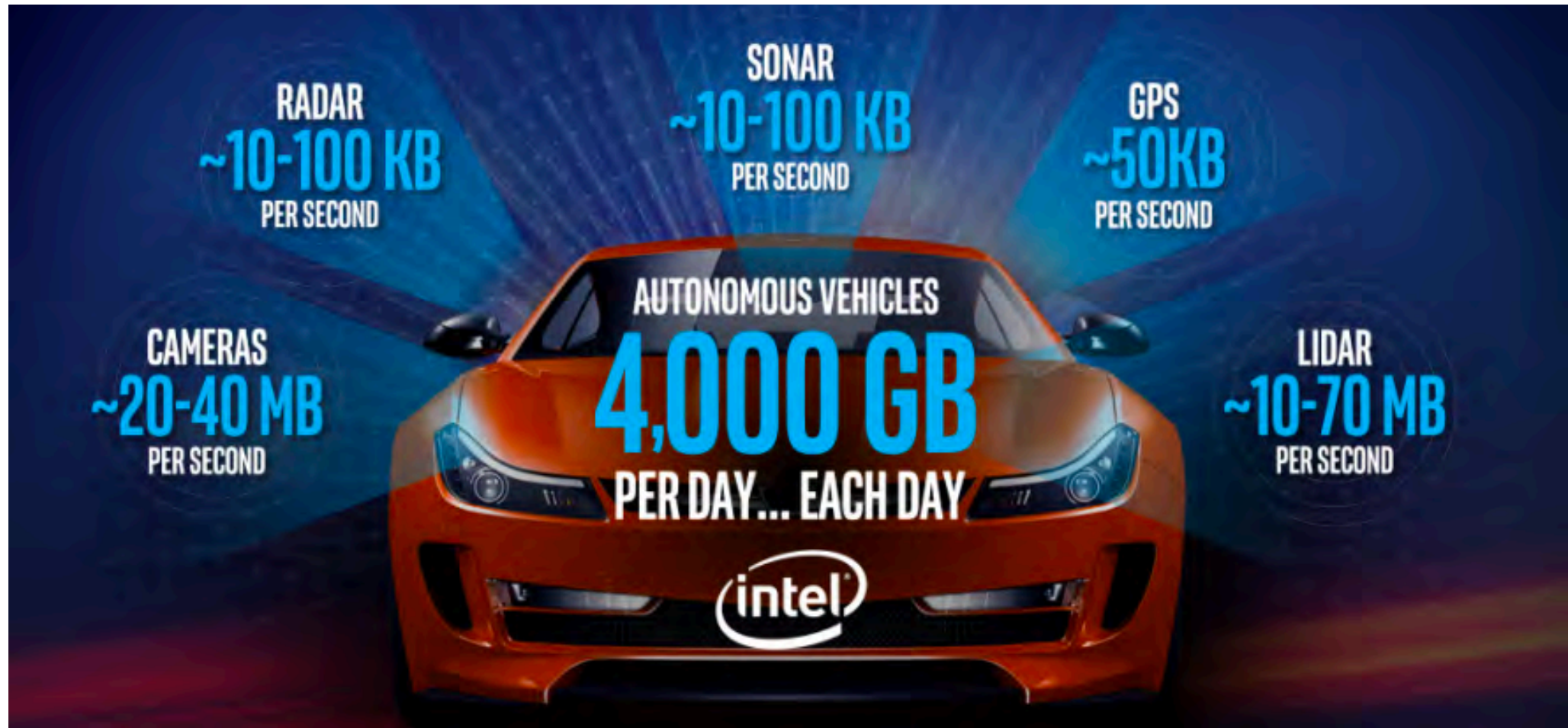
Goes beyond predictive models, to knowing how objects behave under various conditions, in order to understand objectively under what conditions will a given object in the embedded environment act (or react) in a certain way, and then seeking to set up those conditions and/or behaviors that will yield optimal outcomes (insight).

Cognitive

Deciding, Acting:

Sense-making from all of the input data, knowledge, insights, and understanding, in order to decide on the Next Best Action, and then taking the right action, at the right time, at the right place, in the right context. This may also include probing new, but safe, “what if” scenarios to explore whether there is a better NBA (right sight).

The coming flood of data in autonomous vehicles



First Cognitive Systems to Outsmart Us

IBM Deep Blue beats Garry Kasparov in chess (1997)



IBM Watson wins Jeopardy game (2011)



Cognitive Systems Outsmart Us

May 2017: Google's AlphaGo beats Ke Jie (#1) in "Go"

Computer beats Chinese master in ancient board game of Go



Go player Ke Jie, left, shakes hands with Dr David Silver after the match



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go.taboola.com/Ecommer...

By Reuters News Agency

24 MAY 2017 - 1:23AM

A Google artificial intelligence programme defeated a Chinese grand master at the ancient board game Go on Tuesday, a major feather in the cap for the firm's AI ambitions as it looks to woo Beijing to gain re-entry into the country.

In the first of three planned games in the eastern water town of Wuzhen, the AlphaGo programme held off China's world number one Ke Jie in front of Chinese officials and Google parent Alphabet's chief executive Eric Schmidt.

October 2017: New (**self-trained**) version of AlphaGo (AlphaGo Zero) beats the "old version" of AlphaGo

nature
International journal of science

Article | Published: 18 October 2017

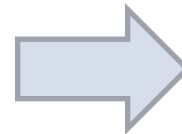
Mastering the game of Go without human knowledge

David Silver, Julian Schrittwieser, Karen Simonyan, Ioannis Antonoglou, Aja Huang, Arthur Guez, Thomas Hubert, Lucas Baker, Matthew Lai, Adrian Bolton, Yutian Chen, Timothy Lillicrap, Fan Hui, Laurent Sifre, George van den Driessche, Thore Graepel & Demis Hassabis

Nature **550**, 354–359 (19 October 2017) | Download Citation ↓

Abstract

A long-standing goal of artificial intelligence is an algorithm that learns, *tabula rasa*, superhuman proficiency in challenging domains. Recently, AlphaGo became the first program to defeat a world champion in the game of Go. The tree search in AlphaGo evaluated positions and selected moves using deep neural networks. These neural networks were trained by supervised learning from human expert moves, and by reinforcement learning from self-play. Here we introduce an algorithm based solely on reinforcement learning, without human data, guidance or domain knowledge beyond game rules. AlphaGo becomes its own teacher: a neural network is trained to predict AlphaGo's own move selections and also the winner of AlphaGo's games. This neural network improves the strength of the tree search, resulting in higher quality move selection and stronger self-play in the next iteration. Starting *tabula rasa*, our new

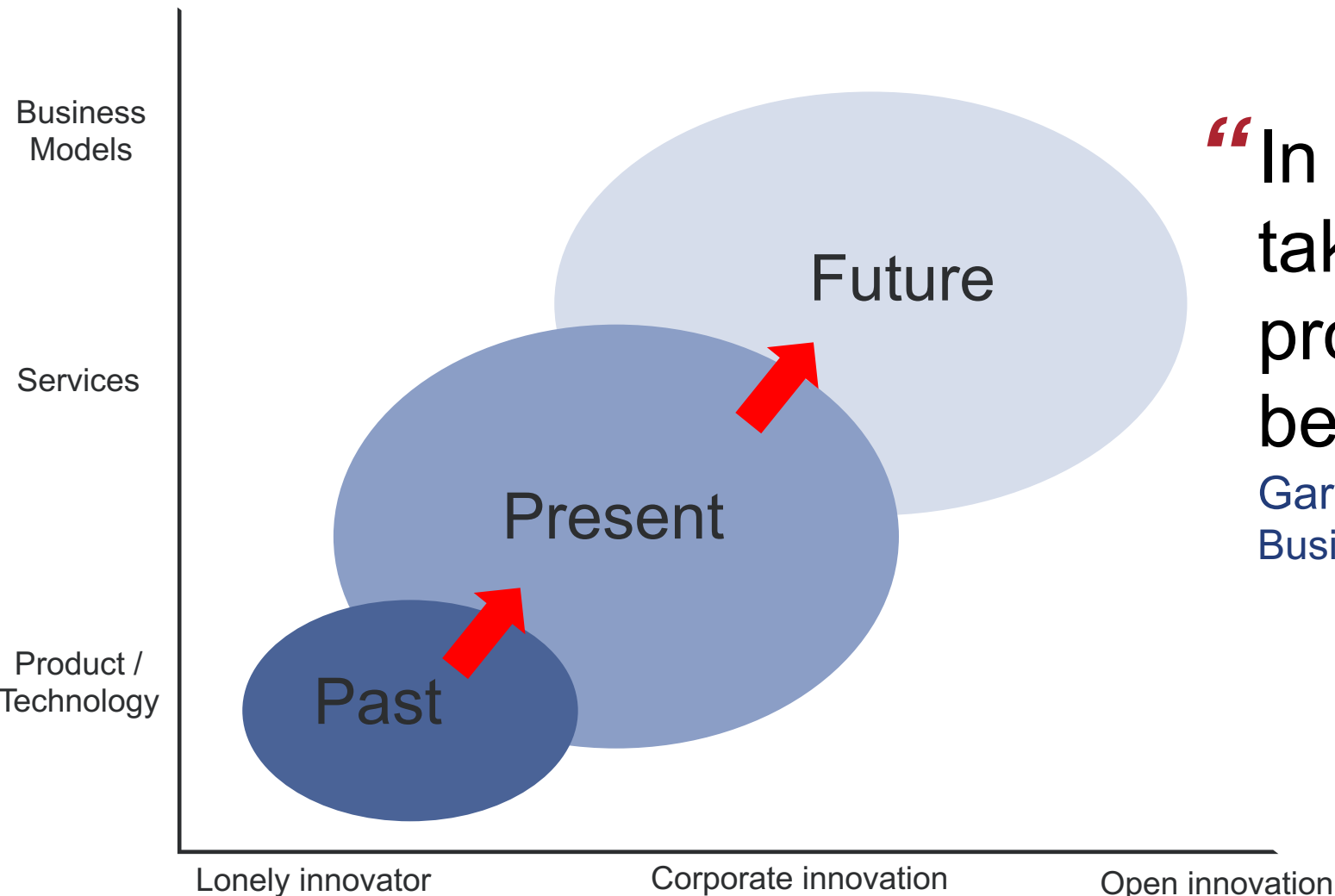




FROM DATA TO DIGITAL BUSINESS MODEL

Evolution of Innovation Management

Evolution towards open innovation and business model innovation

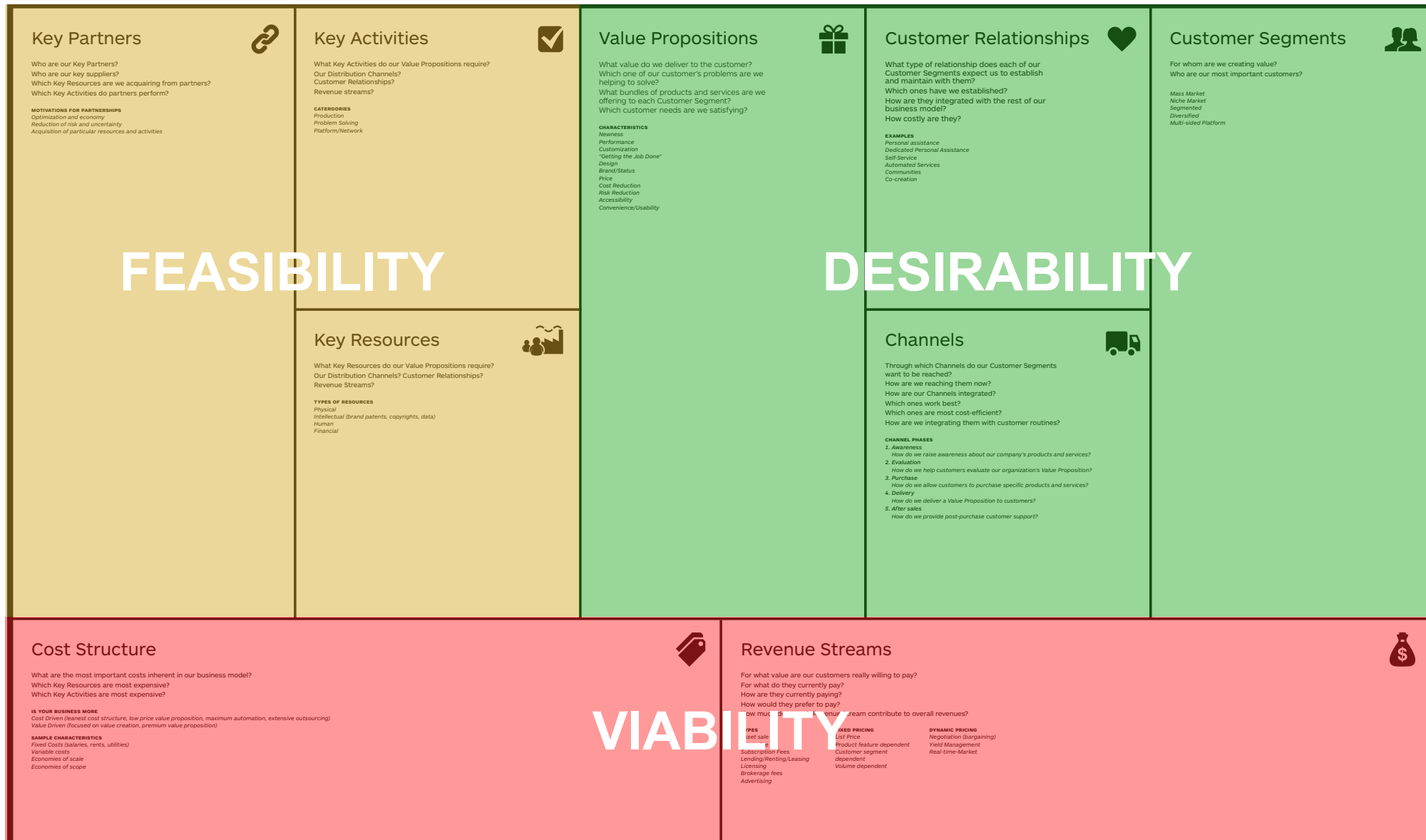


“In the future, competition takes place not between products or services, but between business models”

Gary Hamel

Business Thinker and Entrepreneur

True value creation needs three things

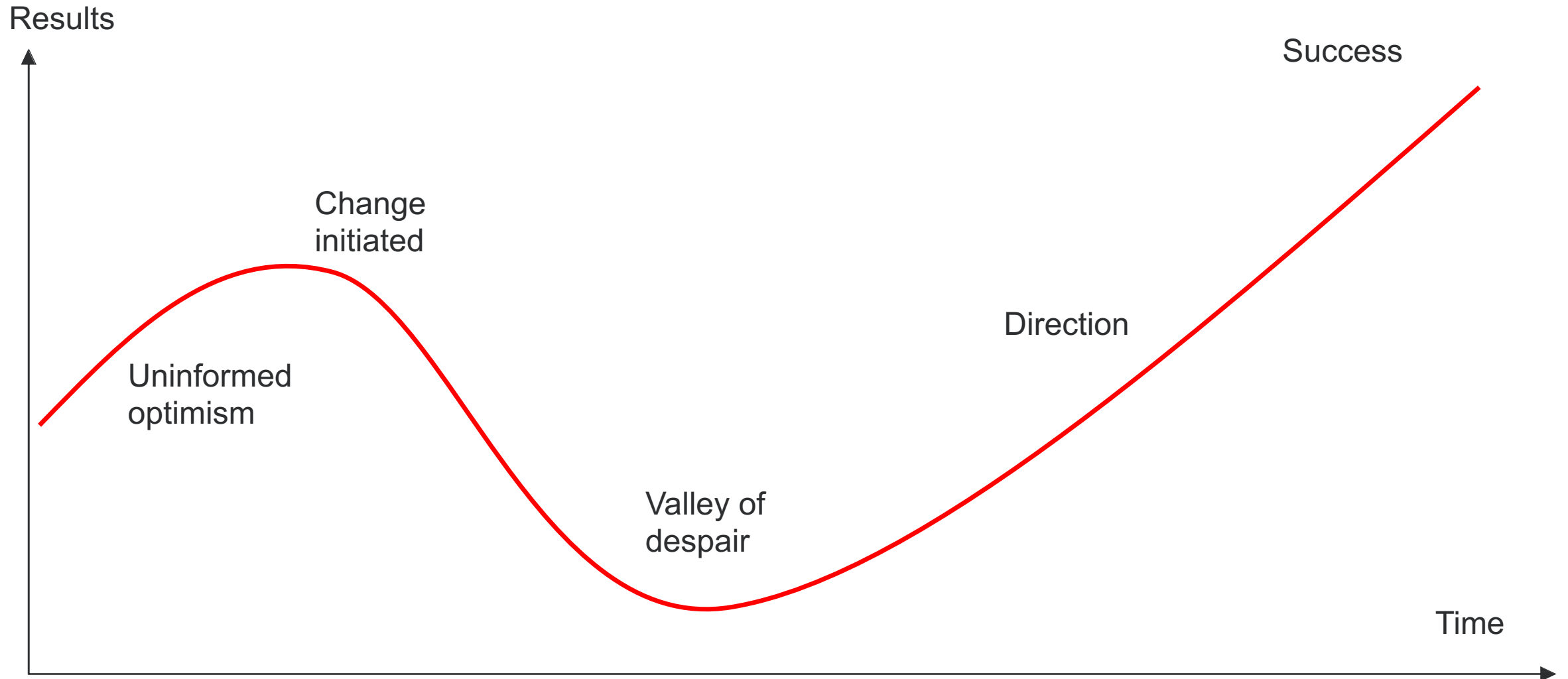


Business Model Transformations

Can you transform your BM fast enough to stay competitive?



Transformation needs persistent leaders



From tobacco to ...

What's the issue they're facing?



The screenshot shows the top portion of a CNBC news article. The header includes the CNBC logo and navigation links for Markets, Business, Investing, Tech, Politics, and CNBC TV. Below the header is a news ticker with headlines such as 'The only way out of Brexit sign, Niall...', 'Iraq is pumping record oil, a 'fully-blown migraine' for OPEC's...', 'Growing backlash in China against A.I. and facial recognition', and 'Former president of Mugabe dies at the...'. A purple banner for 'WOMEN OF THE FUTURE' by Accenture is also visible. The main article title is 'Tobacco stocks tumble as cigarette sales decline', published on Tuesday, May 28, 2019, at 3:31 PM EDT. The author is Angelica LaVito. A 'KEY POINTS' section is partially visible at the bottom.

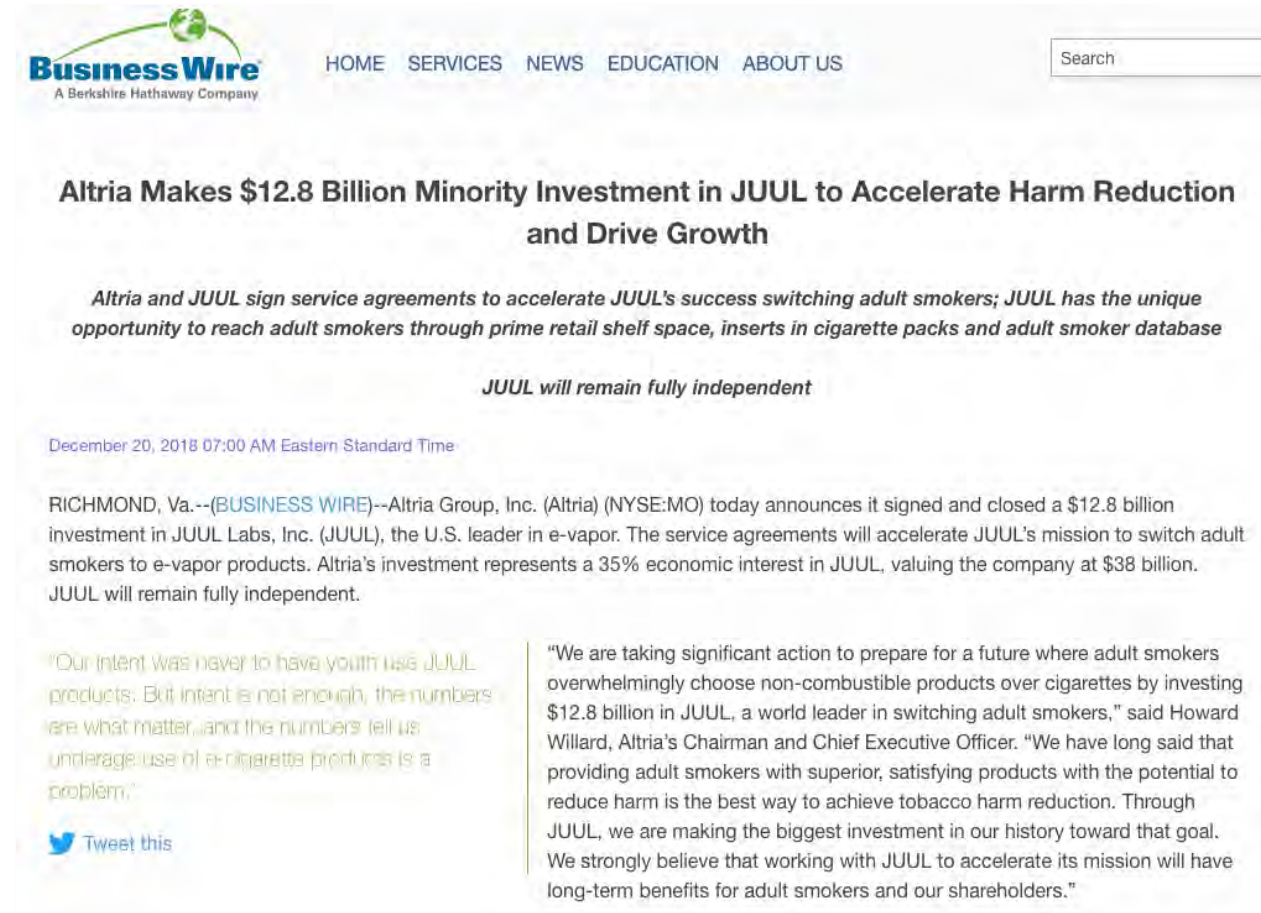
HEALTH AND SCIENCE

Tobacco stocks tumble as cigarette sales decline

PUBLISHED TUE, MAY 28 2019 • 3:31 PM EDT | UPDATED TUE, MAY 28 2019 • 5:51 PM EDT

KEY POINTS

- Altria and British American Tobacco shares fell Tuesday.
- Cigarettes volumes fell 11.2% in the four-week period ended May 18, according to Nielsen data published Tuesday.
- Tobacco companies' core cigarette businesses are shrinking faster than expected.



The screenshot shows a BusinessWire press release. The header includes the BusinessWire logo and navigation links for Home, Services, News, Education, and About Us. The main headline is 'Altria Makes \$12.8 Billion Minority Investment in JUUL to Accelerate Harm Reduction and Drive Growth'. A sub-headline reads: 'Altria and JUUL sign service agreements to accelerate JUUL's success switching adult smokers; JUUL has the unique opportunity to reach adult smokers through prime retail shelf space, inserts in cigarette packs and adult smoker database'. A quote states: 'JUUL will remain fully independent'. The date is December 20, 2018, 07:00 AM Eastern Standard Time. The body text states: 'RICHMOND, Va.--(BUSINESS WIRE)--Altria Group, Inc. (Altria) (NYSE:MO) today announces it signed and closed a \$12.8 billion investment in JUUL Labs, Inc. (JUUL), the U.S. leader in e-vapor. The service agreements will accelerate JUUL's mission to switch adult smokers to e-vapor products. Altria's investment represents a 35% economic interest in JUUL, valuing the company at \$38 billion. JUUL will remain fully independent.' A quote from Howard Willard, Altria's Chairman and Chief Executive Officer, is provided: 'Our intent was never to have youth use JUUL products. But intent is not enough, the numbers are what matter, and the numbers tell us underage use of e-cigarette products is a problem.' Another quote from Willard states: 'We are taking significant action to prepare for a future where adult smokers overwhelmingly choose non-combustible products over cigarettes by investing \$12.8 billion in JUUL, a world leader in switching adult smokers,' said Howard Willard, Altria's Chairman and Chief Executive Officer. 'We have long said that providing adult smokers with superior, satisfying products with the potential to reduce harm is the best way to achieve tobacco harm reduction. Through JUUL, we are making the biggest investment in our history toward that goal. We strongly believe that working with JUUL to accelerate its mission will have long-term benefits for adult smokers and our shareholders.'

Altria Makes \$12.8 Billion Minority Investment in JUUL to Accelerate Harm Reduction and Drive Growth

Altria and JUUL sign service agreements to accelerate JUUL's success switching adult smokers; JUUL has the unique opportunity to reach adult smokers through prime retail shelf space, inserts in cigarette packs and adult smoker database

JUUL will remain fully independent

December 20, 2018 07:00 AM Eastern Standard Time

RICHMOND, Va.--(BUSINESS WIRE)--Altria Group, Inc. (Altria) (NYSE:MO) today announces it signed and closed a \$12.8 billion investment in JUUL Labs, Inc. (JUUL), the U.S. leader in e-vapor. The service agreements will accelerate JUUL's mission to switch adult smokers to e-vapor products. Altria's investment represents a 35% economic interest in JUUL, valuing the company at \$38 billion. JUUL will remain fully independent.

"Our intent was never to have youth use JUUL products. But intent is not enough, the numbers are what matter, and the numbers tell us underage use of e-cigarette products is a problem."

"We are taking significant action to prepare for a future where adult smokers overwhelmingly choose non-combustible products over cigarettes by investing \$12.8 billion in JUUL, a world leader in switching adult smokers," said Howard Willard, Altria's Chairman and Chief Executive Officer. "We have long said that providing adult smokers with superior, satisfying products with the potential to reduce harm is the best way to achieve tobacco harm reduction. Through JUUL, we are making the biggest investment in our history toward that goal. We strongly believe that working with JUUL to accelerate its mission will have long-term benefits for adult smokers and our shareholders."

[Tweet this](#)

From tobacco to ... something better

What are the big 5 Tobacco companies doing about this?

Trying to make a U-turn with a supertanker that is about to hit the rocks!!!



Designing a Smoke-Free Future

How long will PMI be in the cigarette business?

We've built the world's most successful cigarette company, with the world's most popular and iconic brands.

— Now we've made a dramatic decision.

We will be far more than a leading cigarette company. We're building PMI's future on smoke-free products that are a much better choice than cigarette smoking.

Indeed, our vision - for all of us at PMI - is that these products will one day replace cigarettes.

Why are we doing this?

From Selling Books to Anticipatory Shipping



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These are the books we love, offered at Amazon.com low prices. The spotlight moves EVERY day so please come often.

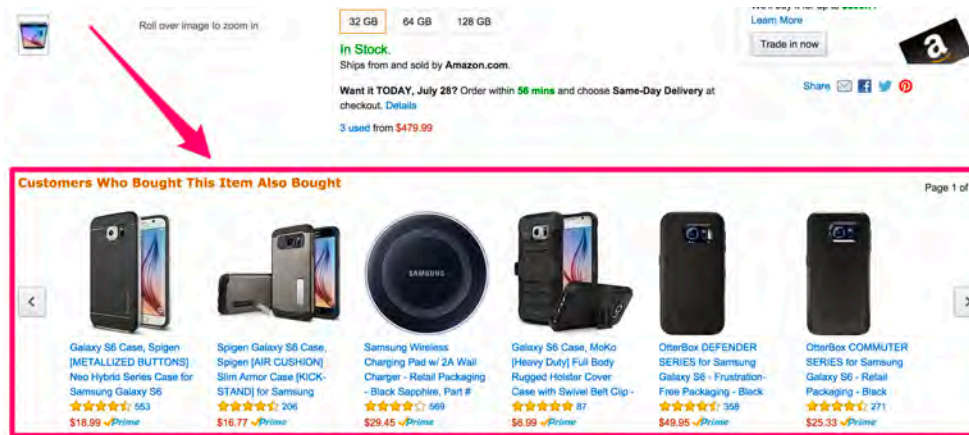
ONE MILLION TITLES

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Cognitive

Proactive systems, mimicking human behavior (combining AI and machine learning) to answer what to do, why and how?



Roll over image to zoom in







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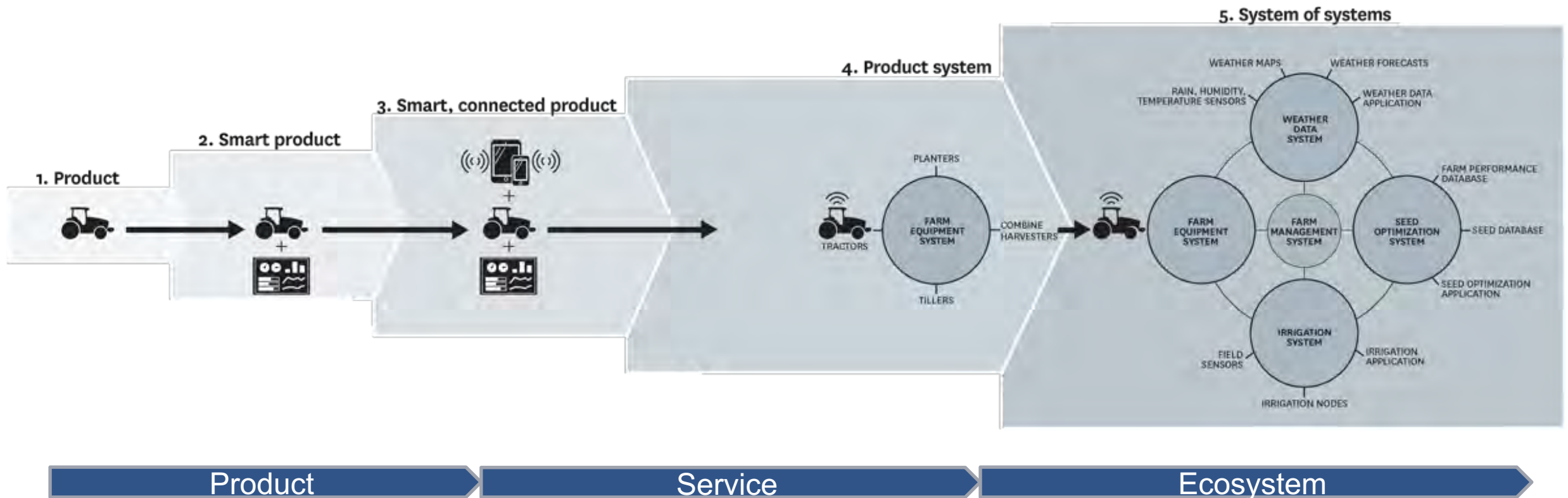
 <p>Galaxy S6 Case, Spigen [METALLIZED BUTTONS] Neo Hybrid Series Case for Samsung Galaxy S6 ★★★★★ 553 \$18.99 ✓Prime</p>	 <p>Spigen Galaxy S6 Case, Spigen [AIR CUSHION] Slim Armor Case [KICK-STAND] for Samsung ★★★★★ 296 \$16.77 ✓Prime</p>	 <p>Samsung Wireless Charging Pad w/ 2A Wall Charger - Retail Packaging - Black Sapphire, Part # N910 ★★★★★ 569 \$29.45 ✓Prime</p>	 <p>Galaxy S6 Case, Moko [Heavy Duty] Full Body Rugged Holder Cover - Case with Swivel Belt Clip - Black ★★★★★ 87 \$6.99 ✓Prime</p>	 <p>OtterBox DEFENDER SERIES for Samsung Galaxy S6 - Frustration-Free Packaging - Black ★★★★★ 358 \$48.95 ✓Prime</p>	 <p>OtterBox COMMUTER SERIES for Samsung Galaxy S6 - Retail Packaging - Black ★★★★★ 271 \$25.33 ✓Prime</p>
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“Think of receiving toilet paper or paper towels shortly after you inform Alexa that you’ve run out” (SmartDataCollective)

From Tractors to Agricultural System of Systems

Transformation Example: John Deere – From Tractor to Systems Platform



Biggest Barriers to Innovation & Transformation

- Banks have by and large woken up to the need to innovate, but many are neglecting one important factor: **culture**.
- Several elements typically found in **banking culture** are **proving hindrances to innovation**. Some are the result of their **size**, while others stem from the **age** of the organization, and the **lack of a pressing need to change** until recently.
- Citi, DBS, and ING are viewed as leaders when it comes to innovation in banking.
- A failure to consider operating culture is already hurting banks' innovation projects. Just 17% of the industry majority have managed to launch five or more digitally driven products since the start of their innovation efforts, and only 16% have implemented five or more digital mid- or back-office solutions.



PIYUSH GUPTA
CEO OF DBS BANK, THE WORLD'S LEADING DIGITAL BANK & THE LARGEST BANK IN SOUTH-EAST ASIA

BANK OF THE FUTURE

Piyush Gupta is the Chief Executive of DBS Group - the largest bank in South-East Asia. Since 2009, Mr. Gupta has transformed DBS from a traditional financial institution into the World's leading digital bank.

Date:
Wednesday 8th May 2019

Time:
18:00-21:30

- <https://www.strategy-business.com/article/Transforming-a-Traditional-Bank-into-an-Agile-Market-Leader?gko=0fb33>
- Business Insider

Let's continue the conversation!

PETER VOGEL

Professor of Family Business and Entrepreneurship
Director Global Family Business Center

peter.vogel@imd.org

<https://www.imd.org/gfbc>



[linkedin.com/in/vogelpeter](https://www.linkedin.com/in/vogelpeter)

“Only those who dare to fail greatly will ever achieve greatly” (Robert Kennedy)