opentext™

# We Are All Information Companies

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Certain statements in this presentation, including statements about the focus of Open Text Corporation (“OpenText” or “the Company”) in our fiscal year ending June 30, 2019 (Fiscal 2019) on growth in earnings and cash flows, creating value through investments in broader Enterprise Information Management (EIM) capabilities, distribution, the Company's presence in the cloud and in growth markets, expected growth in our revenue lines, total growth from acquisitions, innovation and organic initiatives, and distribution expansion, the focus on recurring revenues, improving efficiency, expanding cash flow and strengthening the business, adjusted operating income and cash flow, its financial condition, the adjusted operating margin target range, results of operations and earnings, announced acquisitions, ongoing tax matters, the integration of the acquired businesses, expected timing, charges and savings related to restructuring activities, declaration of quarterly dividends, future tax rates, new platform and product offerings, scaling OpenText to new levels in Fiscal 2019 and beyond, the anticipated size, benefits and timing related to our restructuring plan, and other matters, may contain words such as "anticipates", "expects", "intends", "plans", "believes", "seeks", "estimates", "may", "could", "would", "might", "will" and variations of these words or similar expressions are considered forward-looking statements or information under applicable securities laws. 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# Where Does Wealth Come From





- For many thousands of years, people worked in the fields and lived in poverty
- Life was cruel, short and miserable
- Life expectancy was 28 years in 18th century France
- There was no hope, no advancement, no “life, liberty or the pursuit of happiness”


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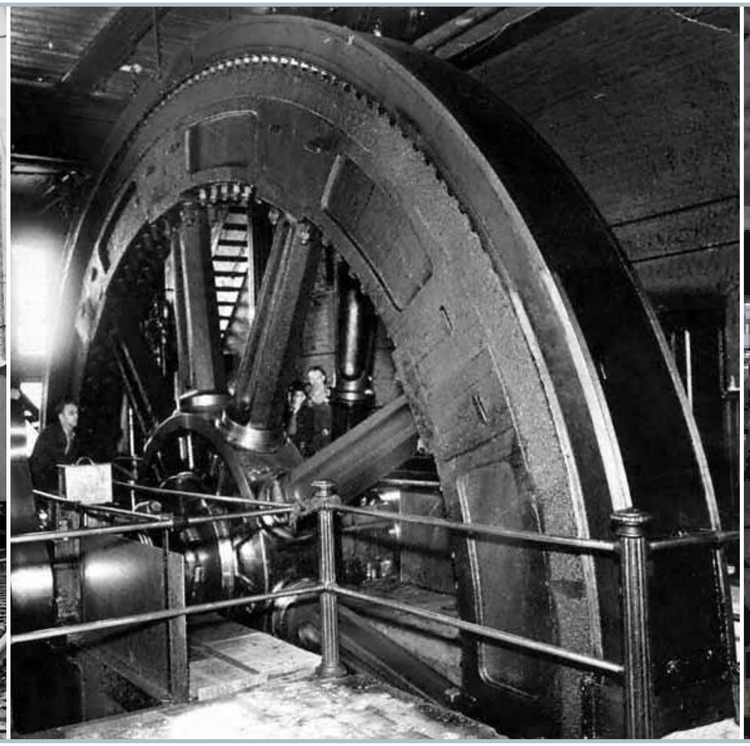
# Industry 1.0:  Steam Power Driven Production

1750 – 1840

Machines and the locomotive create the wealth of Industry 1.0, which begins to lift society from poverty and misery.







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# Industry 2.0:  Electricity Driven Production

1870 – 1969

Advances in electricity (and magnets), mass production (including fuel), Bessemer process (to create steel), telephone and automobiles created amazing wealth over 100 years.





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# Industry 3.0:  High-Tech Automated Production

1969 – Today

The greatest wealth has been created by the integrated circuit, computers, satellites, lasers, communications, cloud and our modern world.





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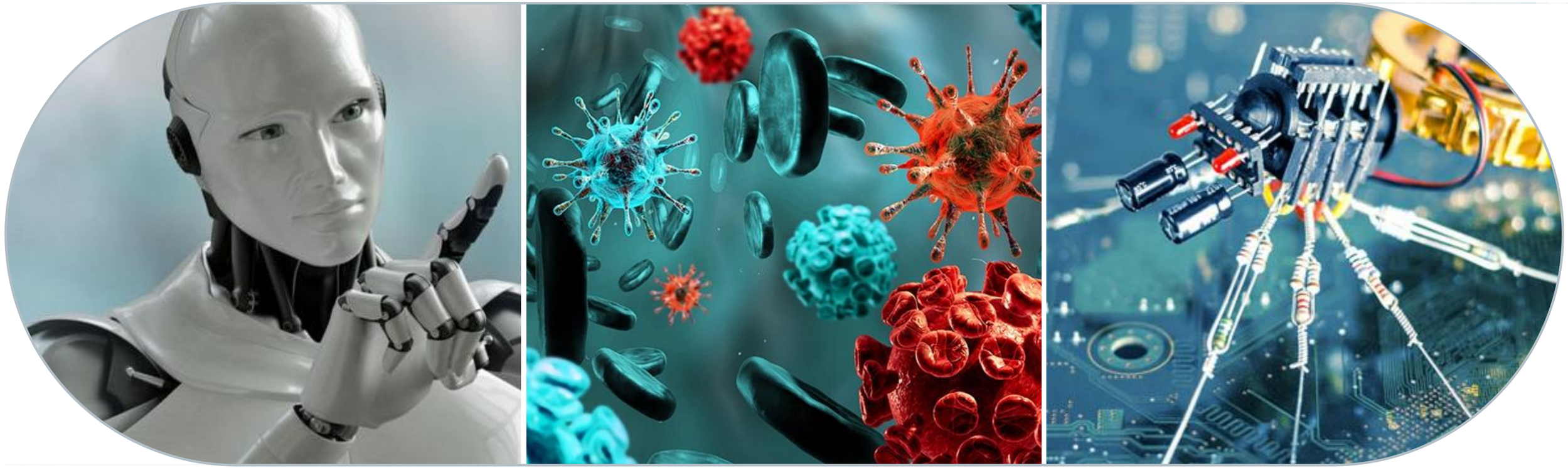
# Industry 4.0:  What drives production in the future ?

Keep reducing the Physics down to the molecular level.  Data, AI, Nano Technology, Bio Technology, Graphene's (not silicon).  “The Information Age”.

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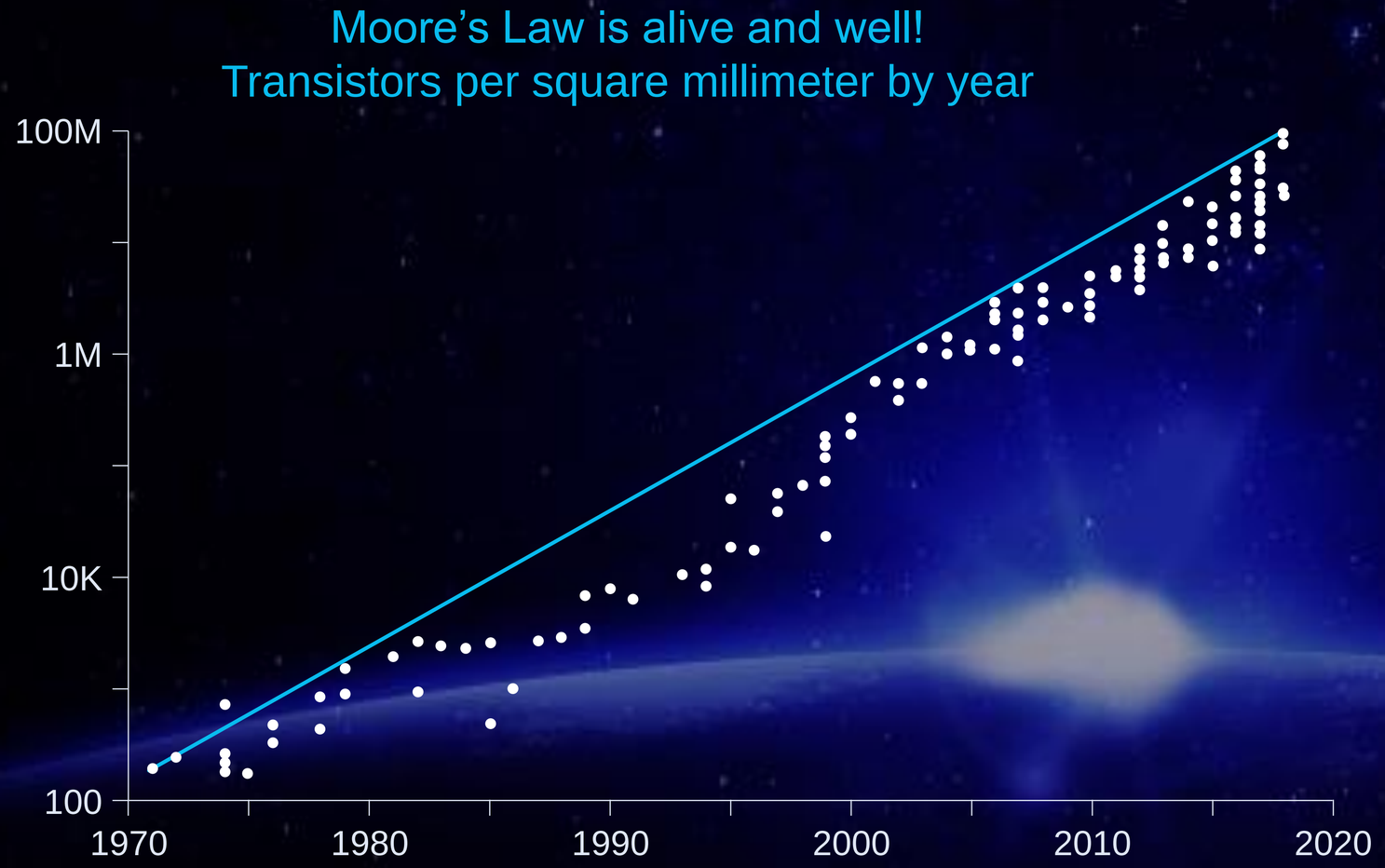
# Moore’s Law and Von Neumann.  Who surrenders first ?




- Exponential growth will last for another decade
- Chips everywhere (from engines, toilets, labels)
- Age of Silicon will end (Silicon Valley the new Rust Belt ?)
- Von Neumann yields to Quantum and the Graphene?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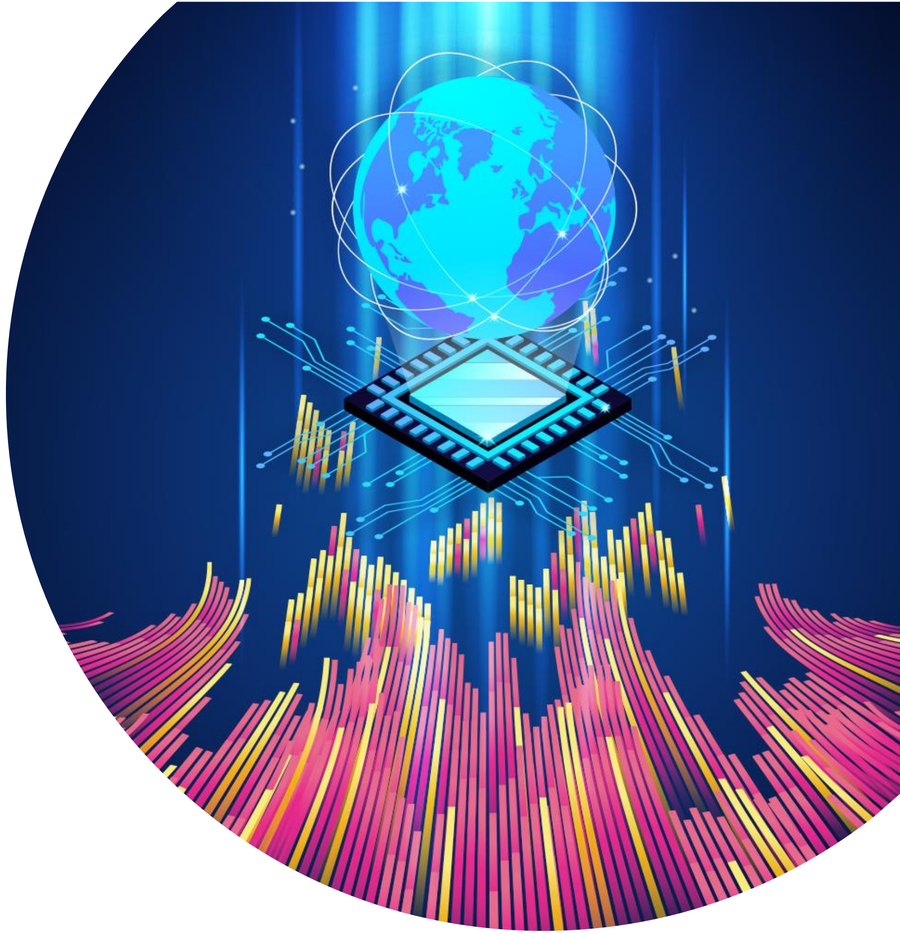
# What makes Industry 4.0 so different



- At the level of atoms ...
- It is real time …
- Unprecedented “planetary” scale
  - 5 Billion connected consumers
  - 1 Trillion devices
  - 50% plus of work will be automated
- Extremes convergence:  Connectivity, Automation, Computing Power
- Business Models redefined:  Sharing, Aggregation, Subscription –> find the inefficiency and get rid of it. If it is inefficient, it will die.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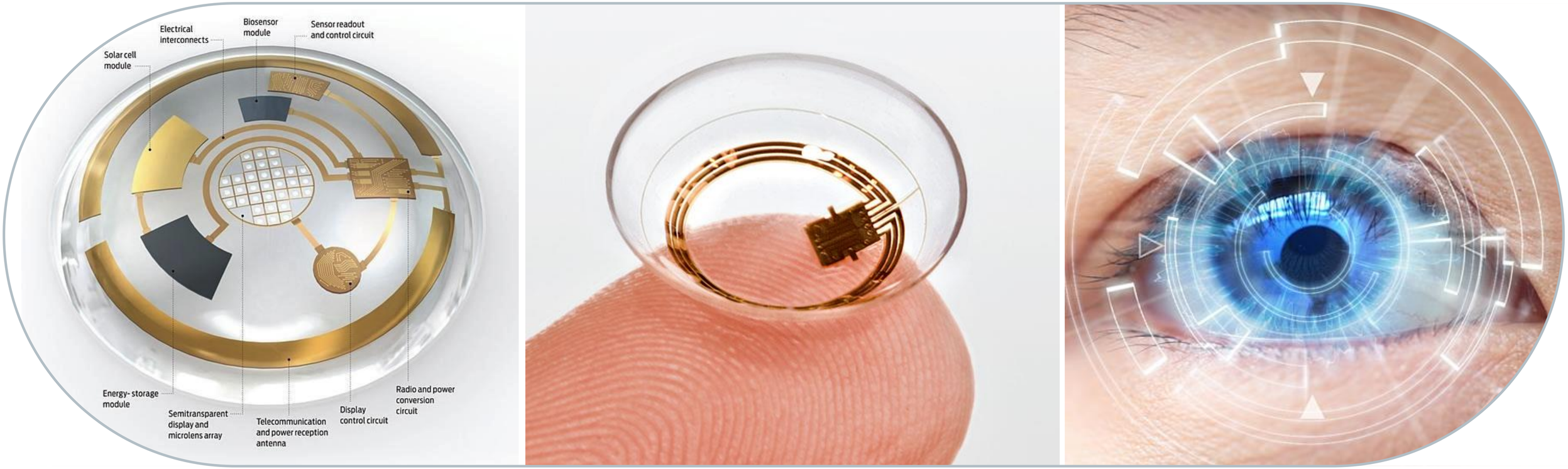
# In the blink of an eye

Blink and you are on the internet.  Recognize people, translate languages instantly.  Monitor diabetes, sugar levels, adjust your eye prescription.





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# 5G – Gigabytes in a second

Enhanced mobile broadband



**Gigabytes in a second**

**3D video, ultrahigh definition screens**





**Smart Home / Building**

Work and play in the cloud



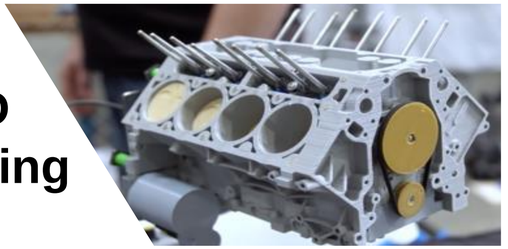
**Augmented reality**

Voice



**Smart City**

**3D Printing**



Mission critical application

Self driving car

Massive machine type communications

Ultra-reliable and low latency communications

Source: Nokia



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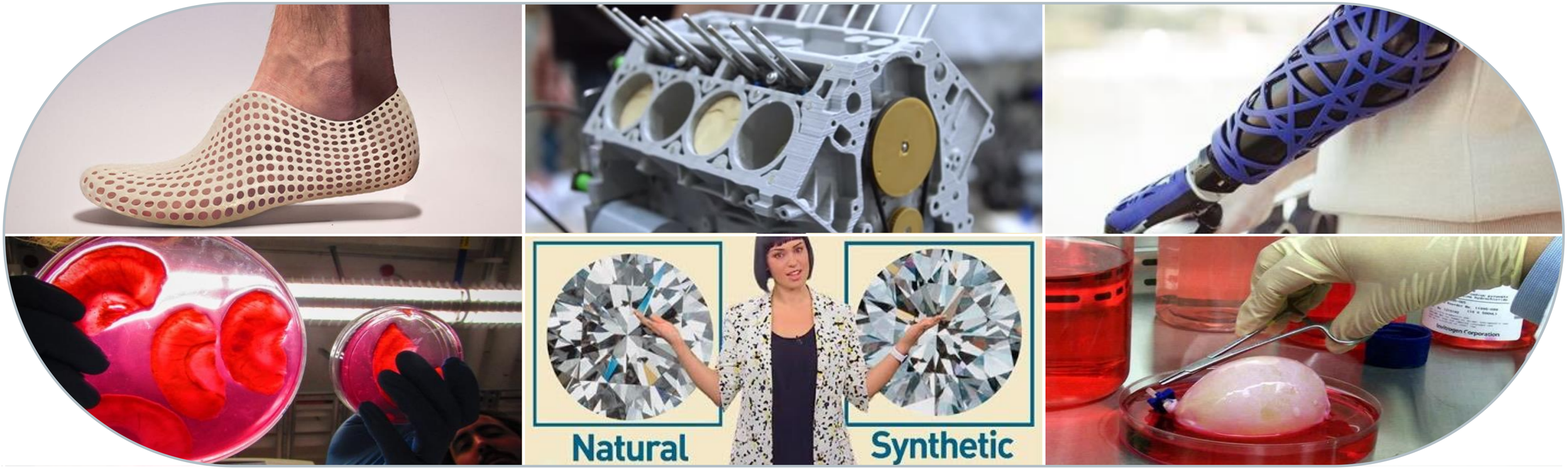
# True mass customization (not mass production): to print or to grow

Personalized shoes, prosthetics, engines.
Grow a diamond, ear or bladder.





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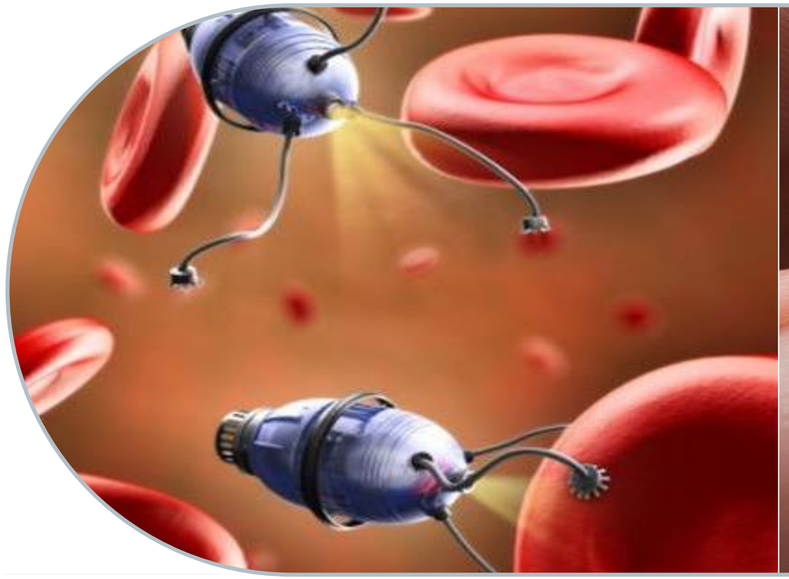
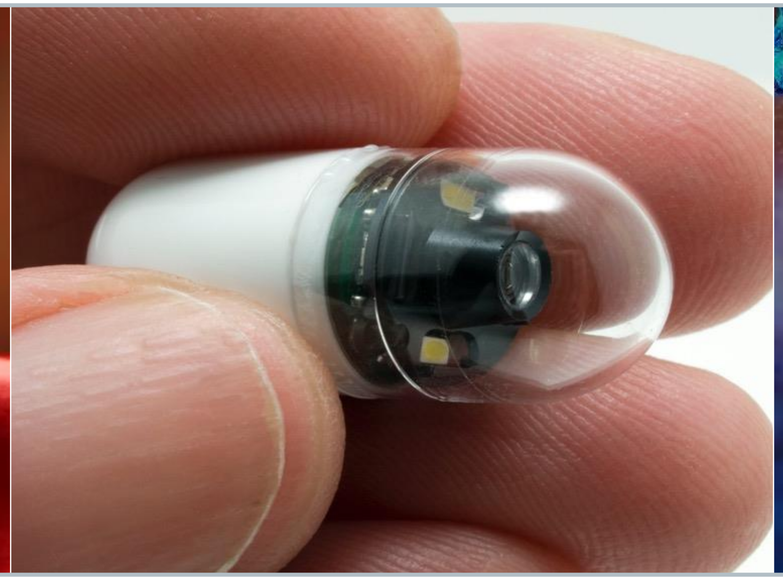
# Nanomedicine & Bio Tech – at the cellular level



Chemotherapy delivered on molecules that hone in on cancer cells.  Attack cancer cell by cell



Ingestible smart pills - with cameras, computers and guidance systems



DNA chips scanning for cancers before a tumor develops

The Digitalization of Medicine and the Human Body
Surgery, Radiation and Chemotherapy someday will be the “analog approach”

https://www.cancer.gov/sites/nano/cancer-nanotechnology/treatment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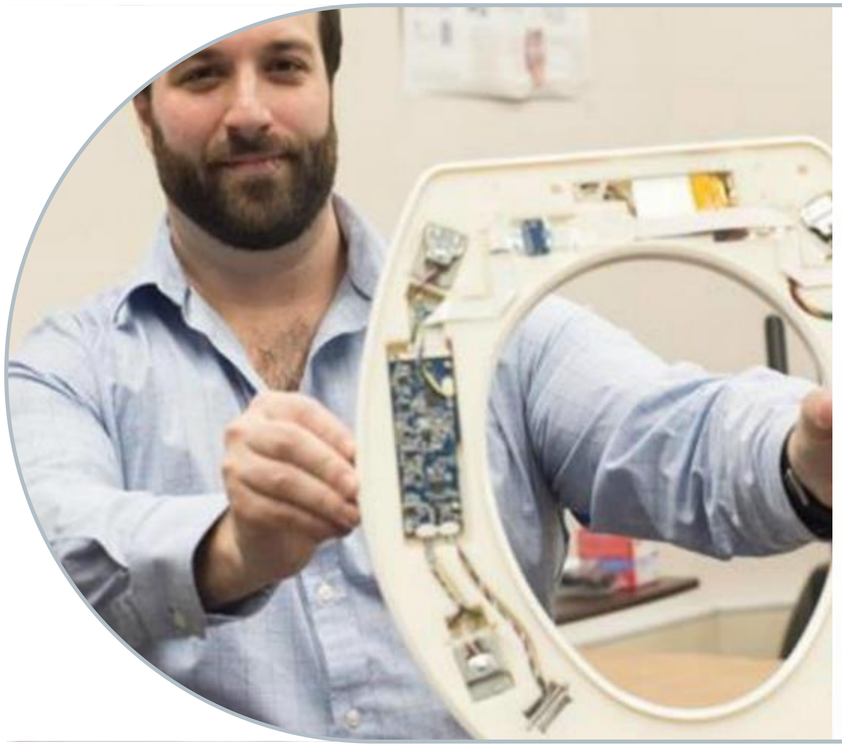
# Even the toilet will extend our lives (or reveal secrets)

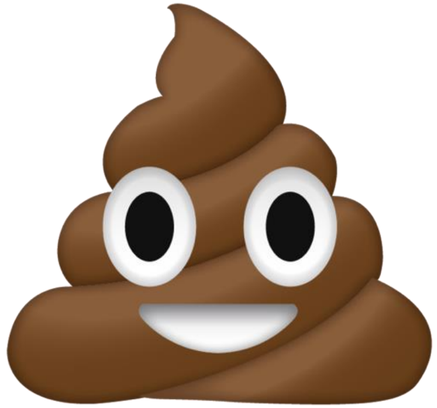


**Potty talk: the secrets Kim Jong-un could be hiding in his private portable toilet**

5 ways that studying the North Korean leader's poop could reveal sensitive information

CBC Radio · Posted: Mar 02, 2019 12:00 PM ET | Last Updated: March 1





Waste in the toilet + bio sensors + DNA scanning chips will detect cancer and extend lives (or reveal secrets).



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# Robotics




Robotics set to outpace auto industry

Testing emotional robots in schools and nursing homes

Take over the dirty / dangerous jobs – cleaning up the Fukushima nuclear disaster

Displace 20% of human work, the repetitive tasks


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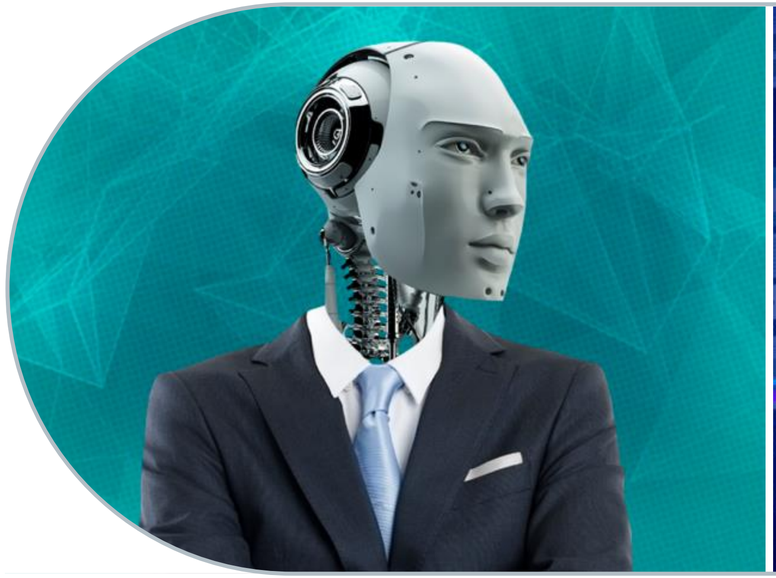
# Already started …








## Robot-Lawyer



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Incorporating The European Lawyer

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Home › Big stories › SFO using AI to replace lawyers

SFO using AI to replace lawyers

By Dr David Cowan
davidcowan@globalcitymedia.com

11 April 2018 at 07:29 BST

**The Serious Fraud Office (SFO) is using Artificial Intelligence to replace work carried out by lawyers following its successful use in Rolls-Royce investigation.**

A new AI document review system is being used by the Serious Fraud Office (SFO) on all casework from this month, leading to the processing of half a million documents a day. The system will eventually replace work done by independent barristers. AI technology leads to quicker investigations, reduced costs and a lower error rate than the work done by human lawyers, the SFO stated.

*AI replacing lawyers at SFO*

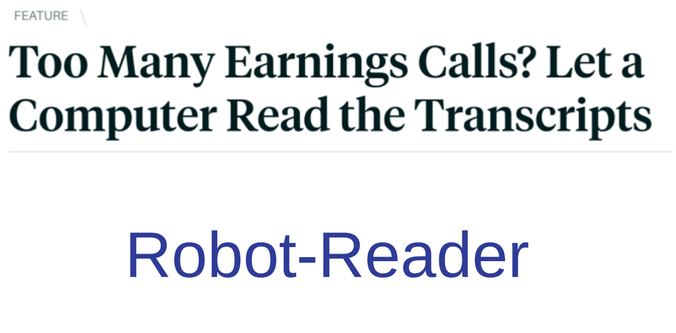
Editor's picks

EXPANSION

OSBORNE CLARKE OPENS UP DELHI OFFICE

WELLNESS

## Robot-Reporter



FEATURE

Too Many Earnings Calls? Let a Computer Read the Transcripts

## Robot-Reader

## Robot-Chef





https://www.spyce.com/

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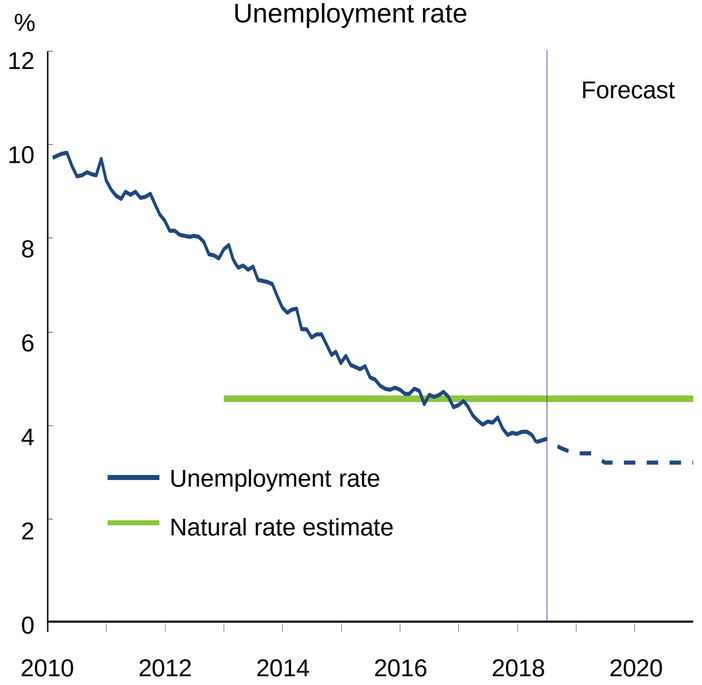
# The Workforce of the Future

## Full Human Employment Today

Full Employment in US

Unemployment below sustain levels




Source: Bureau of Labor Statistics and FRBSF staff

## 600 Million Robots enter workforce by 2030



## 61 Million Gen Z enter workforce by 2025

Energy of a Thousand Suns

A new generation has begun to enter the workforce: **GENERATION Z.**

There are

**61 MILLION**

Gen Zers in the U.S. – larger than Gen X and two-third the size of the baby boomers. By next year, Gen Z will outnumber millennials, comprising 32% of the global population.



Source: LinkedIn Learning



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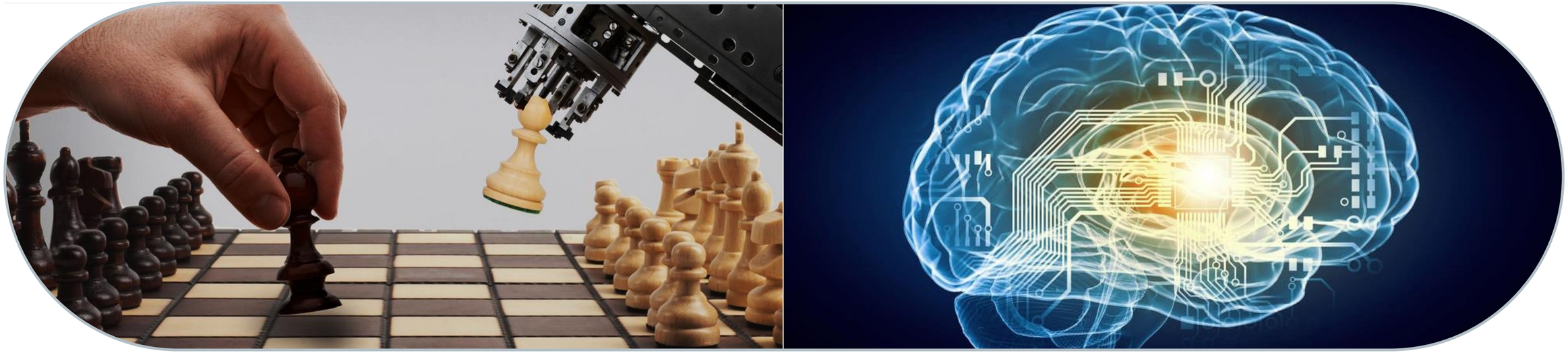
# Jobs of the future will be those that robots cannot perform



**Disadvantaged:** repetitive workers, middle men

**Winners:** semi-skilled laborers, middle men who grasp intellectual capitalism, workers with human skills.

- semi-skilled manual labor (carpenter, plumber)
- jobs involving human interactions (lawyer, counselor)
- intellectual capitalist (analyst, scientist, artist)

AI can give us better:

- Analytics
- Algorithms
- Data Mining
- Big Data
- Machine Learning

AI will not give us:

- Creativity, humanoid robots, human emotions and personality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# Genetic & Digital Immortality:
## Live to 120 (4x life span over 200 years)



- Greenland sharks live to 500 years old
- Upload DNA sequences and analyze the genes of millions of seniors, and then youth - we could find the genes which may control/cure aging
- Or we could store / transfer a person's personality digitally


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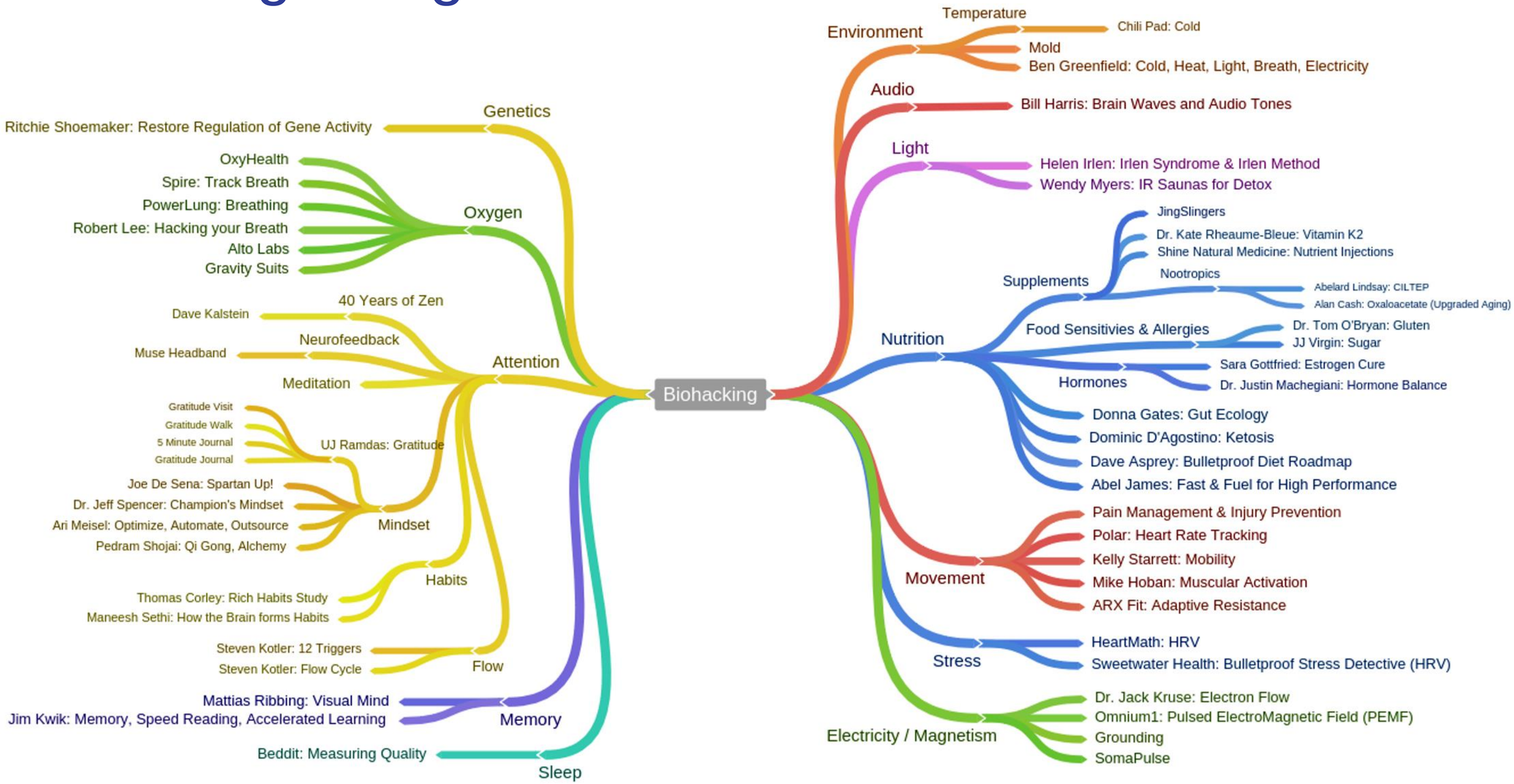
# Bio Hacking is Big !




https://blog.bulletproof.com/beginners-guide-to-biohacking-101/

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# Digitization of the Human Mind



- Neurohacking - computers reading human thoughts
- Human Connectome Project mapping the human brain
- Printing of memories
- Cure for mental illness ?
- Uploading of memories and experiences
- Combined with imagines and holograms
- Digitalization of the human mind


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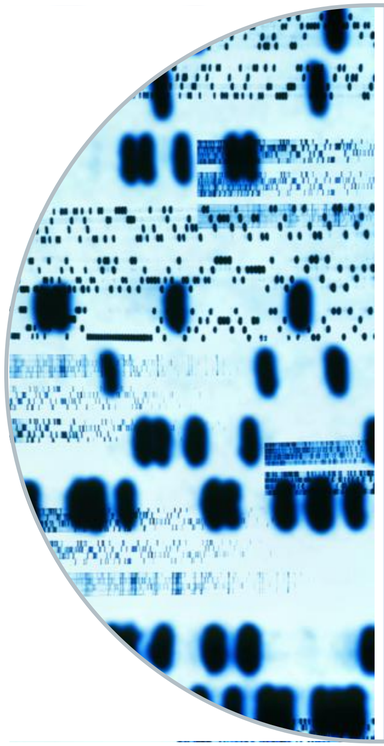
# 20 Million People have uploaded their DNA. But wait … there is more !!!

The California Killer. Preserved DNA, 30 years later, was uploaded to a “genealogy” website – and a match was found.



**New questions around Bio-data:**

- DNA – genealogy sites
- Voice – Smart assistants
- Fingerprints – phones
- Retinal – ATM machines







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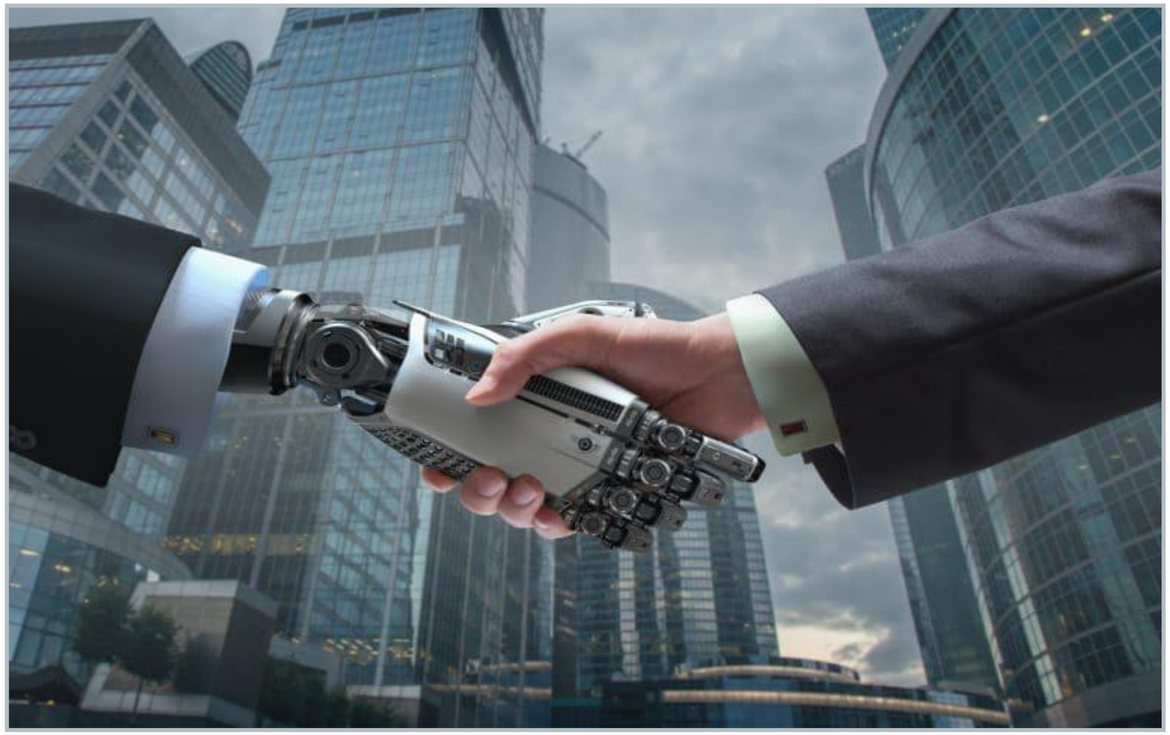
# Industry 4.0:  What drives production in the future ?



- Keep reducing the Physics down to the molecular level (Data, Nano, Bio Tech, etc)
- New Era of Enterprise Software Companies
- A New Capital Model Emerges (information management, security, AI, ML)

## “We are all Information Companies”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# We are all Information Companies

## Commodity Capital



## Information Capital





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# Commodity Capital v. Information Capital

## All WW Coal Companies

USD $200 Billion Market Cap



## Next Generation Enterprise Software 20x the Value

opentext™ · ORACLE · Office 365 · Google Cloud · Adobe · salesforce · SAP · vmware · workday. · aws · servicenow · IBM



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# Think like an information disruptor - Auto

**Average Speed:**

1819 Horse and Buggy: 10 miles / hour
2019 Car in Central London: 8 miles / hour



Horse & Buggy



First Car



Assembly Plant



Modern Car “Software”



Future Car “Autonomous”



Insurance Company

- User driving information
- Car & road data
- Locations, speeds, traffic
- Passages, health, video



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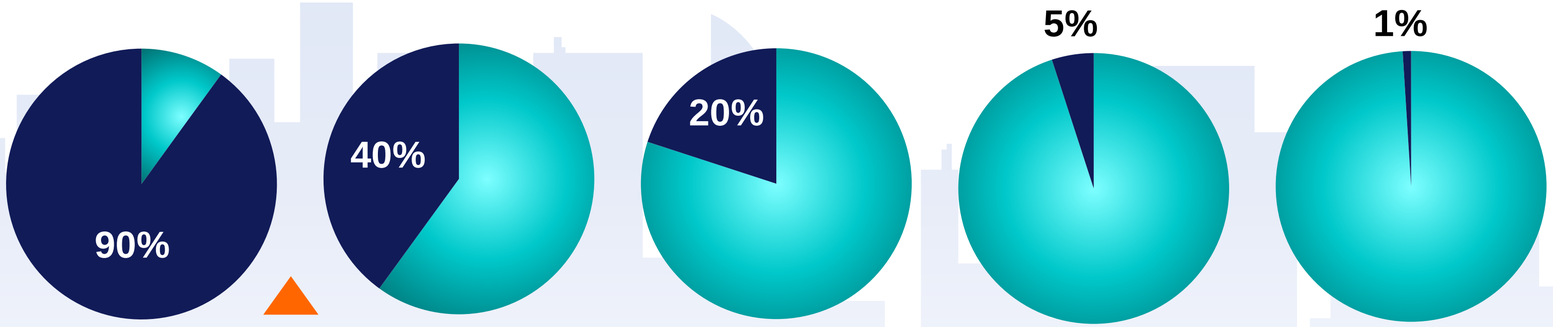
# Think like an information disruptor – Capital Markets




**Human** **Algorithm** **NYSE & NASDAQ become for-profit organizations**

| 1792 | 1800 | 1880 | 1918 | 1971 | 2000 | 2010 | 2020 | 2025 |
|---|---|---|---|---|---|---|---|---|
| Trading under a Tree | Bucket Trading | Paper | Ticker Tape | Wall Street | NASDAQ public | Quants & Algo trading | Wayne's World | Zero Arbitrage, Zero Hedge Funds |
| | | | | First Computer | 95% volume by humans | High Frequency Trading | One millionth-of-a-second trading<br>95% volume by machines | 1% Human<br>99% Machine |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# Information drives 6 disruptive models

Information and analytics fuel 6 disruptive models that change the nature of competition





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# For example: Enhanced decision making

Insight-driven use cases create value by either supporting growth (top line) or reducing costs (bottom line)

| Top Line | | |
|---|---|---|
| Use Cases | Reference Impact | |
| | Sales Impact | Margin Impact |
| Assortment Optimization | 2.0% | 1.0ppt |
| Cross-and Upsell | 2.0% | |
| Churn Prevention | 1.5% | |
| Pricing | 2.0% | 1.0ppt |
| Stock and Replenishment Optimization | 2.0% | 0.5ppt |
| Promotion Optimization | 1.5% | 1.0ppt |
| Space and Shelf Optimization | 1.5% | |

| Bottom Line | |
|---|---|
| Use Cases | Reference Impact |
| | Cost Reduction |
| Predictive Maintenance | 20-50% of call center costs |
| Marketing Spend Effectiveness | 5-10% of marketing costs |
| Demand Planning | 20-30% of warehousing costs |
| Fraud Prevention | 1-5% of fraud loss |
| Bad Debt Management | 10-20% of bad debt loss |
| Workforce Planning | 10-20% of service costs |
| Supply Chain Optimization | 10-30% of logistics costs |

**Impact values not additive and only achieved in case of investment and change management!**

Source: McKinsey Advanced Analytics


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# What's a terabyte of data worth?

## Early Attempts to Value Data Capital

Massachusetts Institute of Technology



**84%**

Percentage of the **market value of S&P 500 companies** that comes from intangible assets, including data and software



**$8 trillion**

Possible **value of intangible assets**, including data, in the United States

## 2030: IoT Data Marketplace

accenture



Value of Data Marketplace **$3.6** Trillion



Yearly Traded Data **4.38** Zettabytes

https://www.accenture.com/us-en/insights/high-tech/dawn-of-data-marketplace


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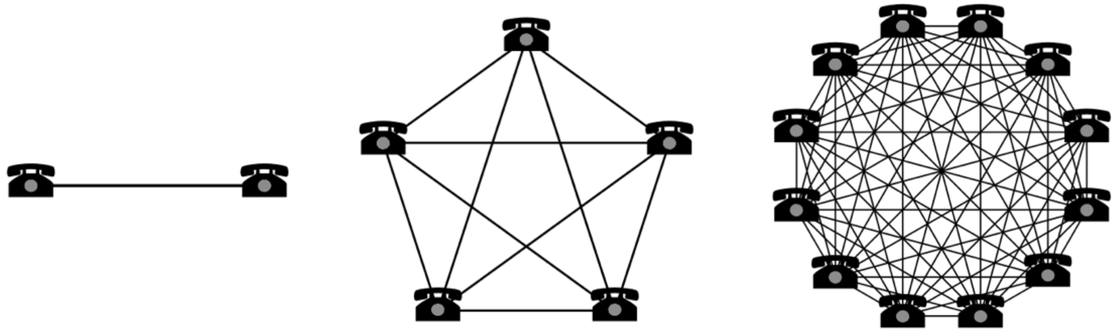
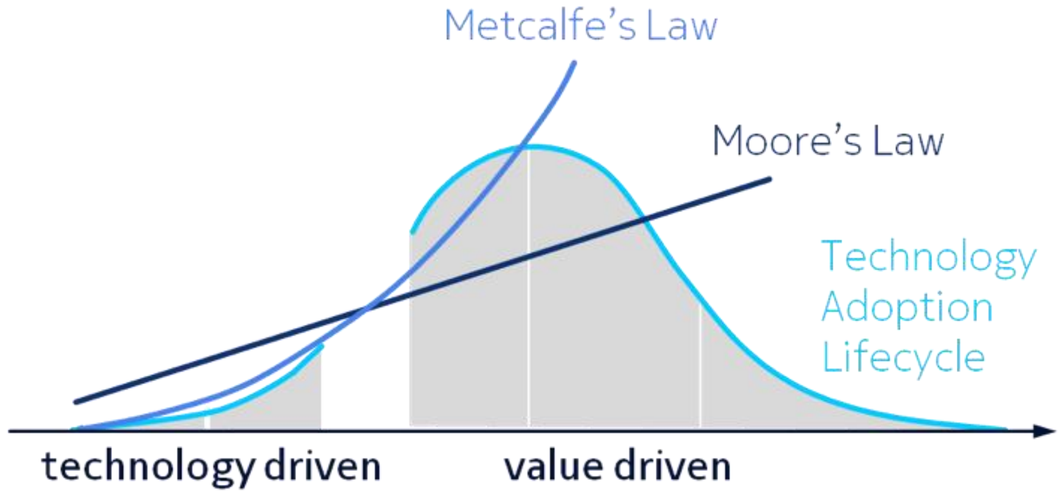
# Metcalfe's Law and valuations



Two telephones can make only one connection, five can make 10 connections, and twelve can make 66 connections.




- Last century leaders (telco networks)
- Current social consumer companies
- The future value of enterprise software and information companies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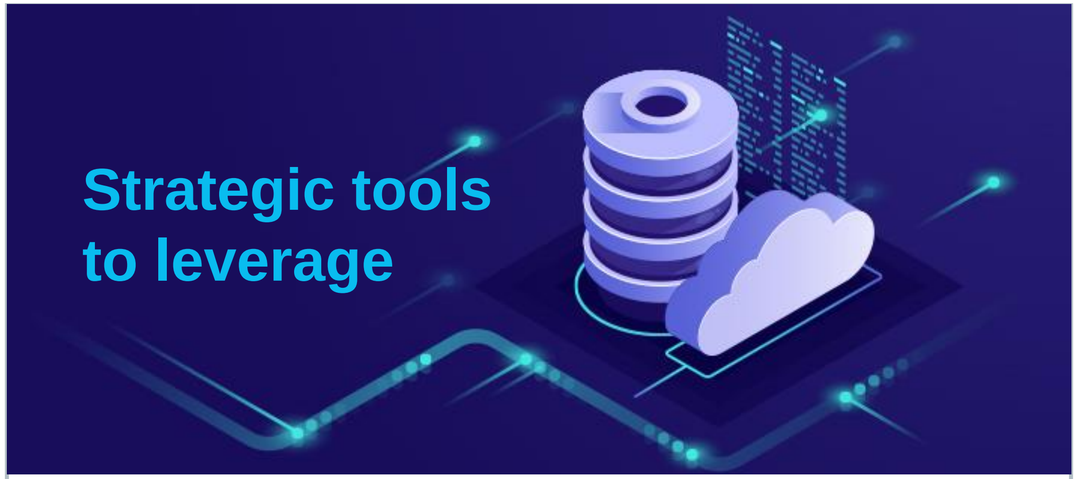
# The Information Advantage is key in Industry 4.0




- Analytics
- AI
- Machine Learning
- Algorithms
- Robotics
- IOT
- Smart End Points
- Quantum
- Cloud




**Consider:**

- Are you a payroll company, or an information giant on income analysis and jobs
- Are you a car company, or an insurance company
- Are you a ride sharing company, or a logistics giant
- And so on …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# In conclusion

- Industry 4.0 is unifying around the principle that the Physics are down to the molecular level - Data, AI, Nano Technology, Bio Technology
- Information Capital replaces Commodity Capital
- Moore’s and Metcalfe’s Laws are still relevant and scaling
- New class of Enterprise Software companies enable Industry 4.0
- We are all Information Companies





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