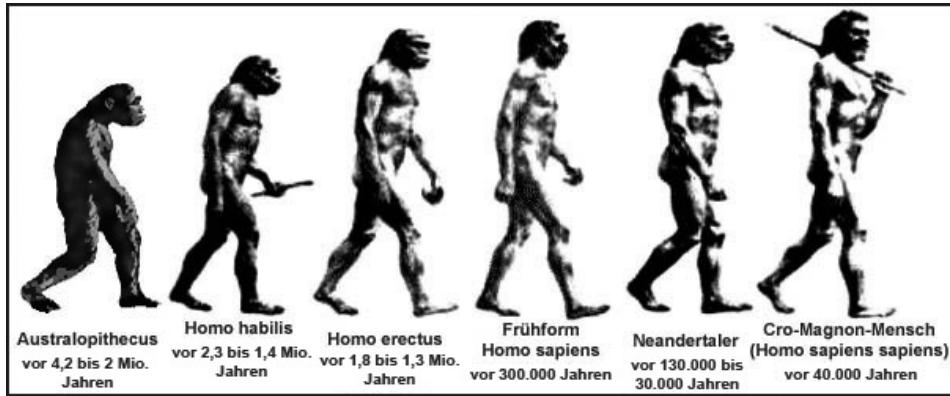


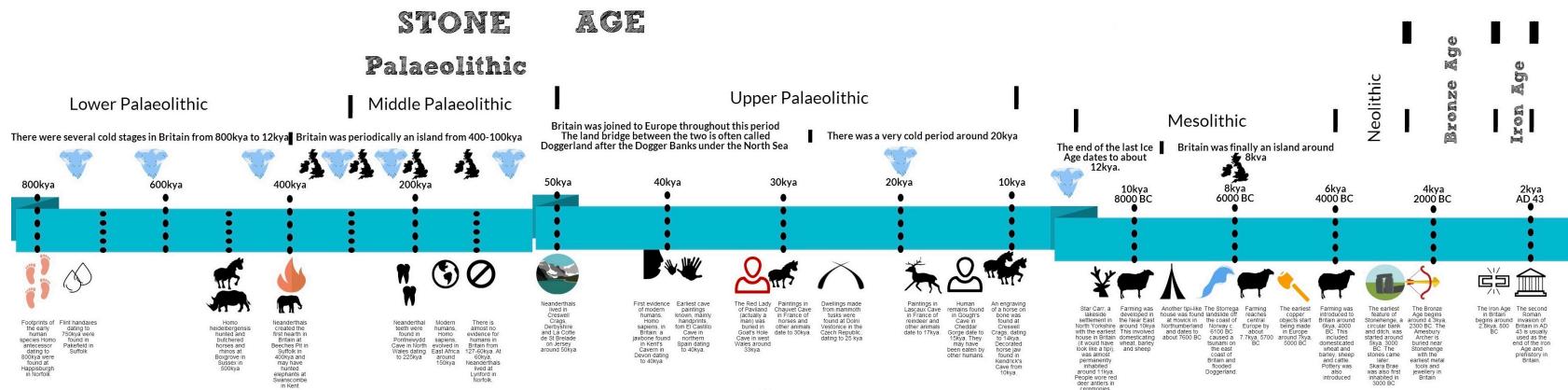
Water Profession in a New Era

our profession is being disrupted
hydroinformatics leads the way

What have been the most important developments in human history?



Homo Sapiens: 40,000 years BCE



Domestication of Animals: 8,000-6,000 BCE

Farming, Agriculture: 6,000 BCE

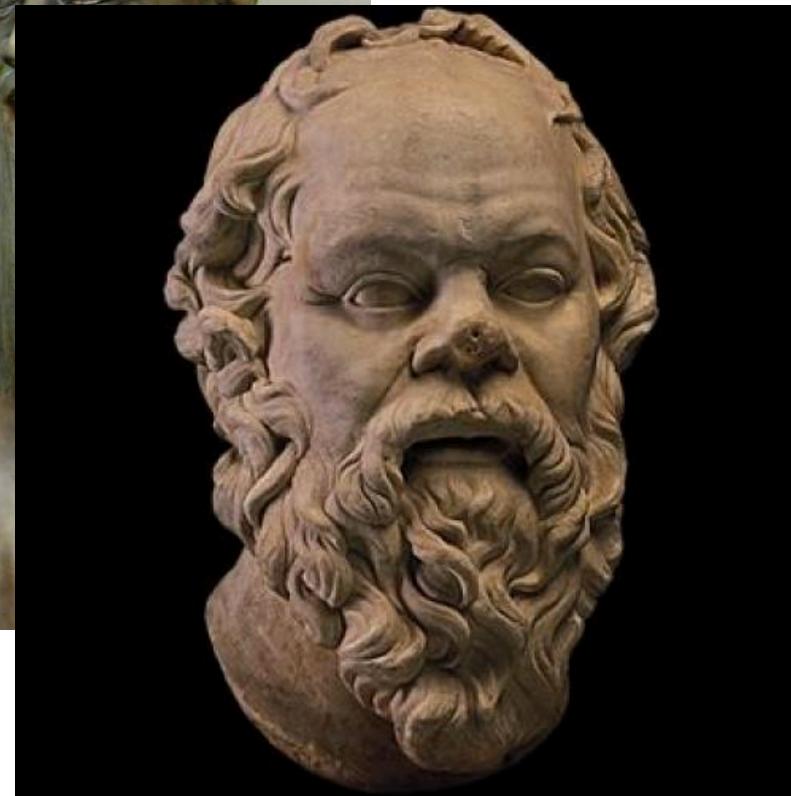
Great Ideas?



Buddha (563–483 BCE)



Confucius (551–479 BCE)



Socrates (469–399 BCE)

Writing, Counting, Democracy, Discoveries...



Mesopotamia, 3200 BCE

Brahmi	↓		—	=	≡	+	८	९	७	५	३	२	१	०
Hindu	↓	०	१	२	३	४	५	६	७	८	९			
Arabic	↓	•	۱	۲	۳	۴	۵	۶	۷	۸	۹			
Medieval	↓	○	I	2	3	ꝝ	ꝑ	6	ꝑ	8	9			
Modern		0	1	2	3	4	5	6	7	8	9			

© G. Sarcone, www.archimedes-lab.org

Modern numbering system, 830 CE

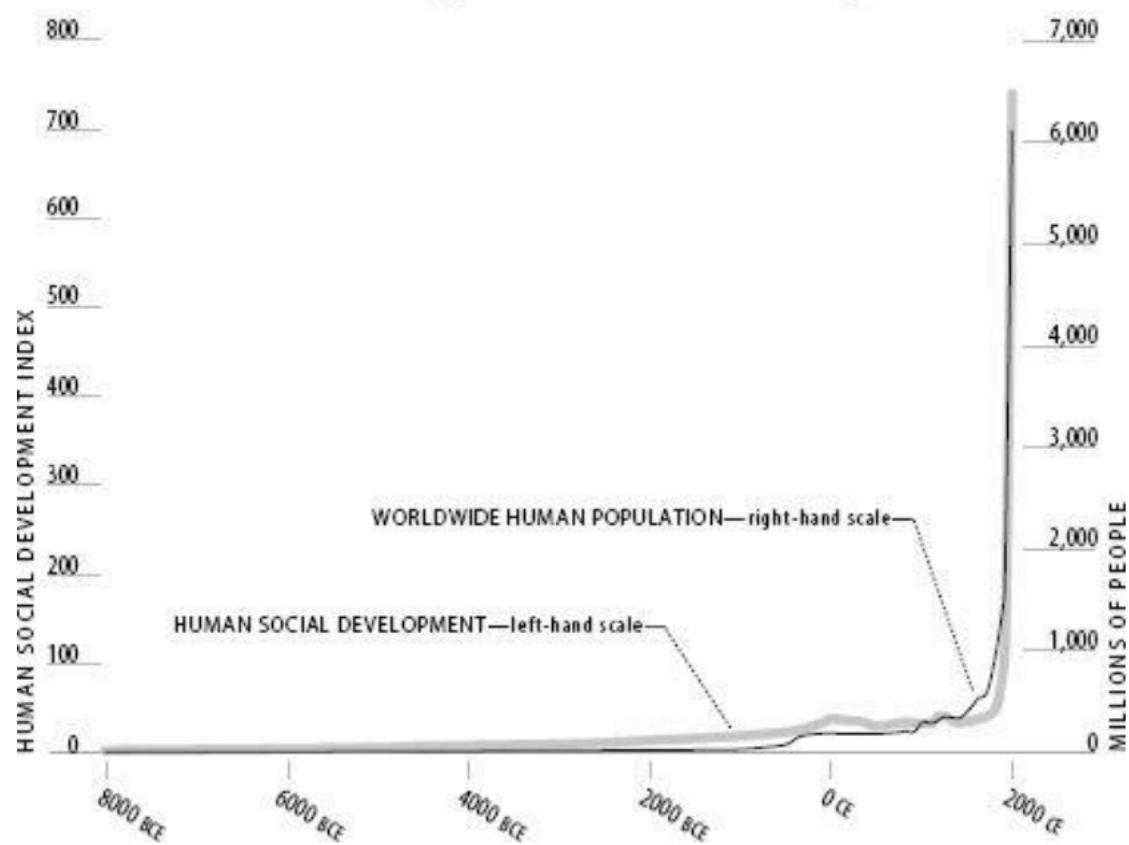
- The Athenians began to practice democracy around 500 BCE.
- The Black Death reduced Europe's population by 30% in 1300s.
- Columbus sailed the ocean in 1492,
 - interactions between the New World and the Old that transformed both

How to Measure Social Development

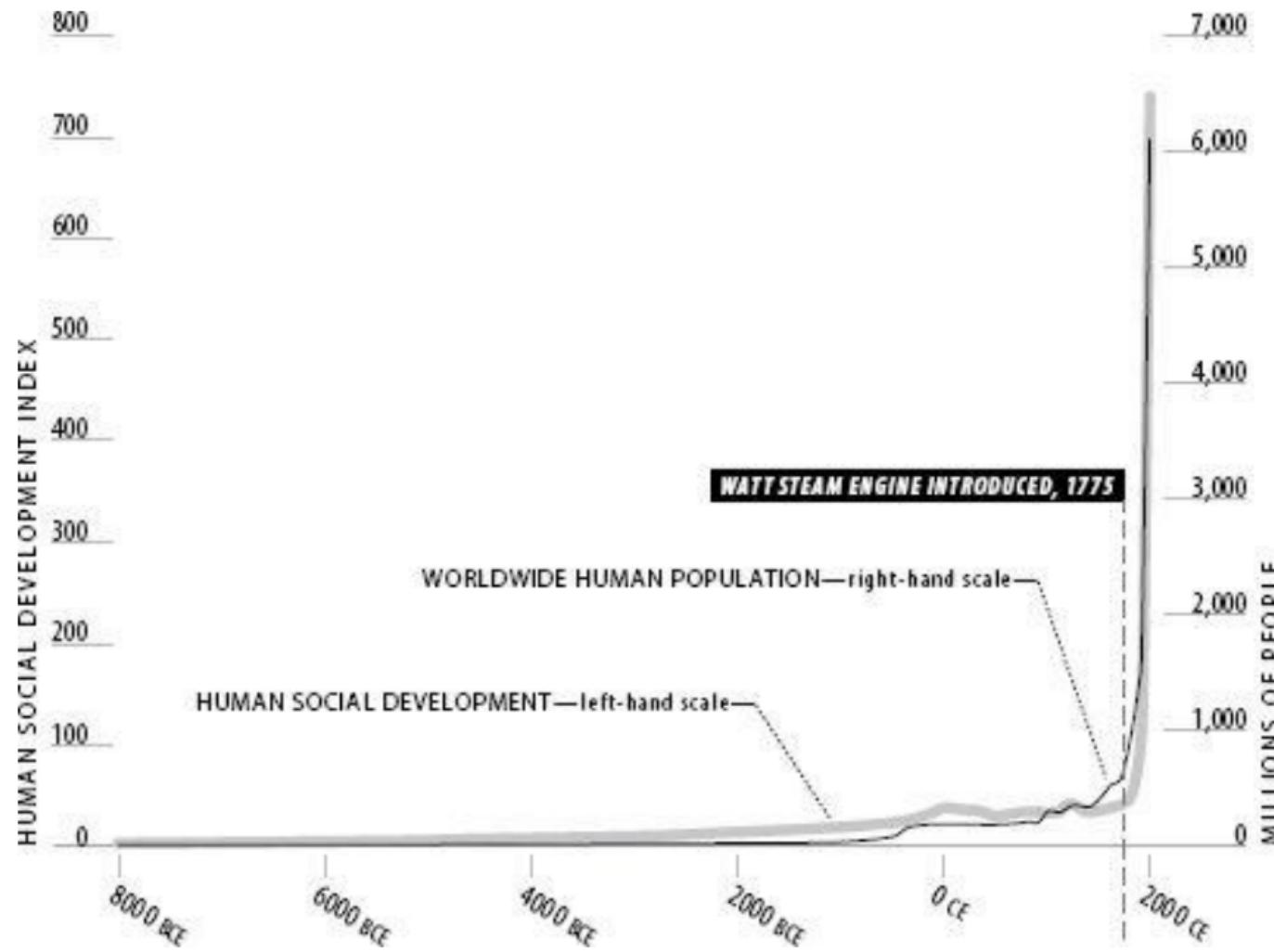
Morris (Why the West Rules – For Now, 2010)

- Energy capture (per-person calories obtained from the environment for food, home and commerce, industry and agriculture, and transportation);
- Organization (the size of the largest city);
- War-making capacity (number of troops, power and speed of weapons, logistical capabilities, and other similar factors);
- Information technology (the sophistication of available tools for sharing and processing information, and the extent of their use).

Most of Human History is “Boring”

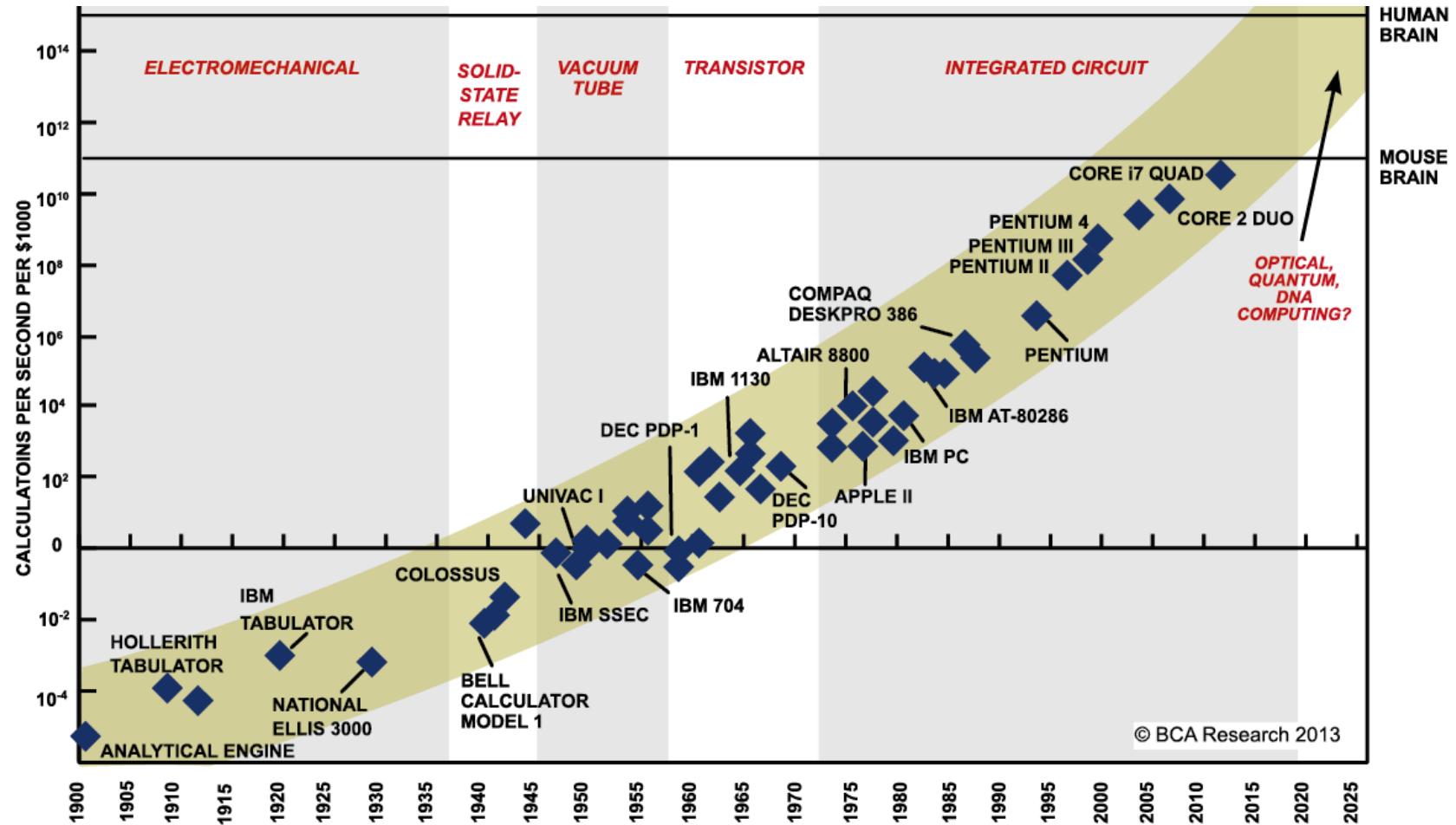


First Machine Revolution



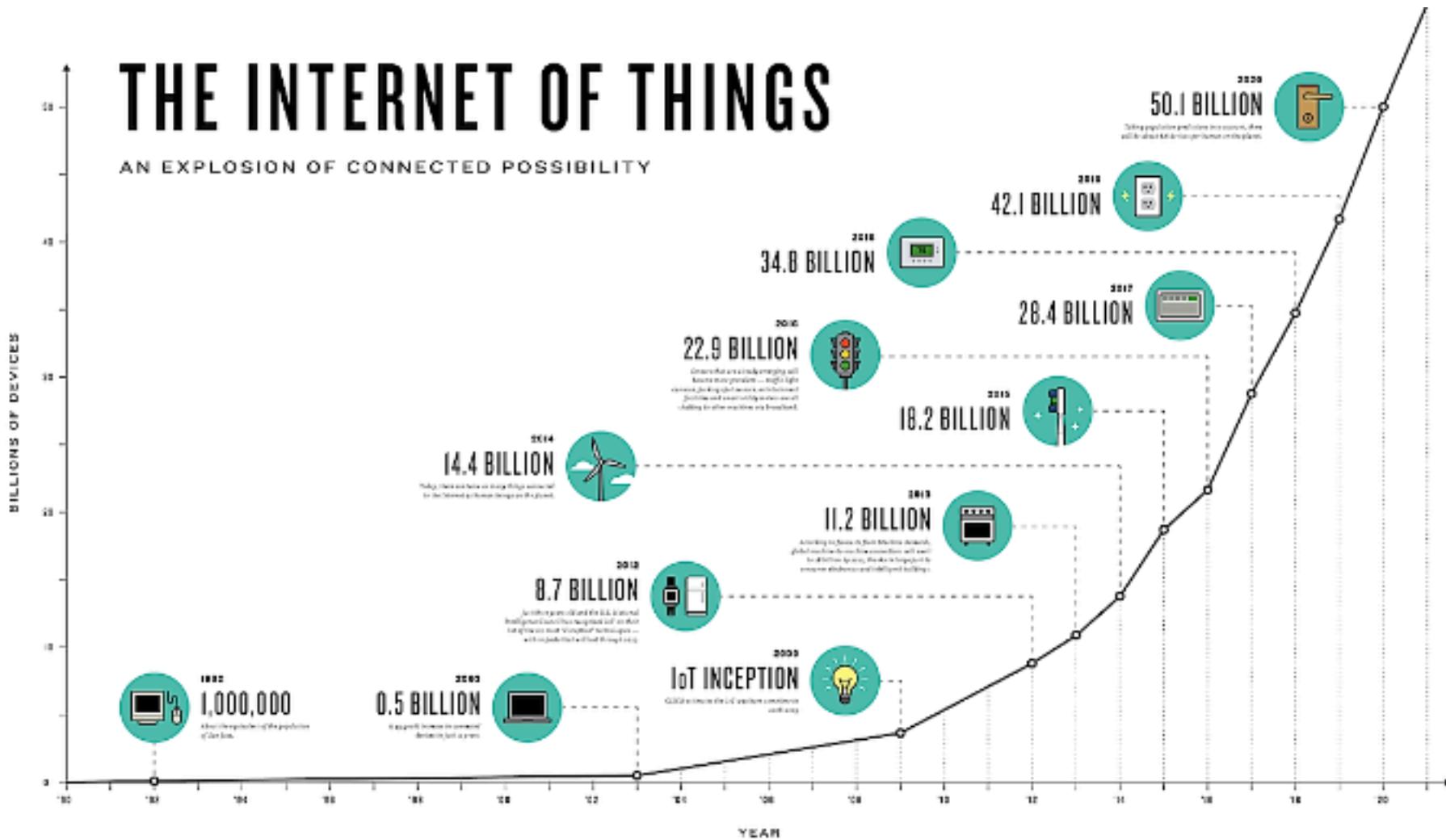
SECOND MACHINE AGE

Moore's Law



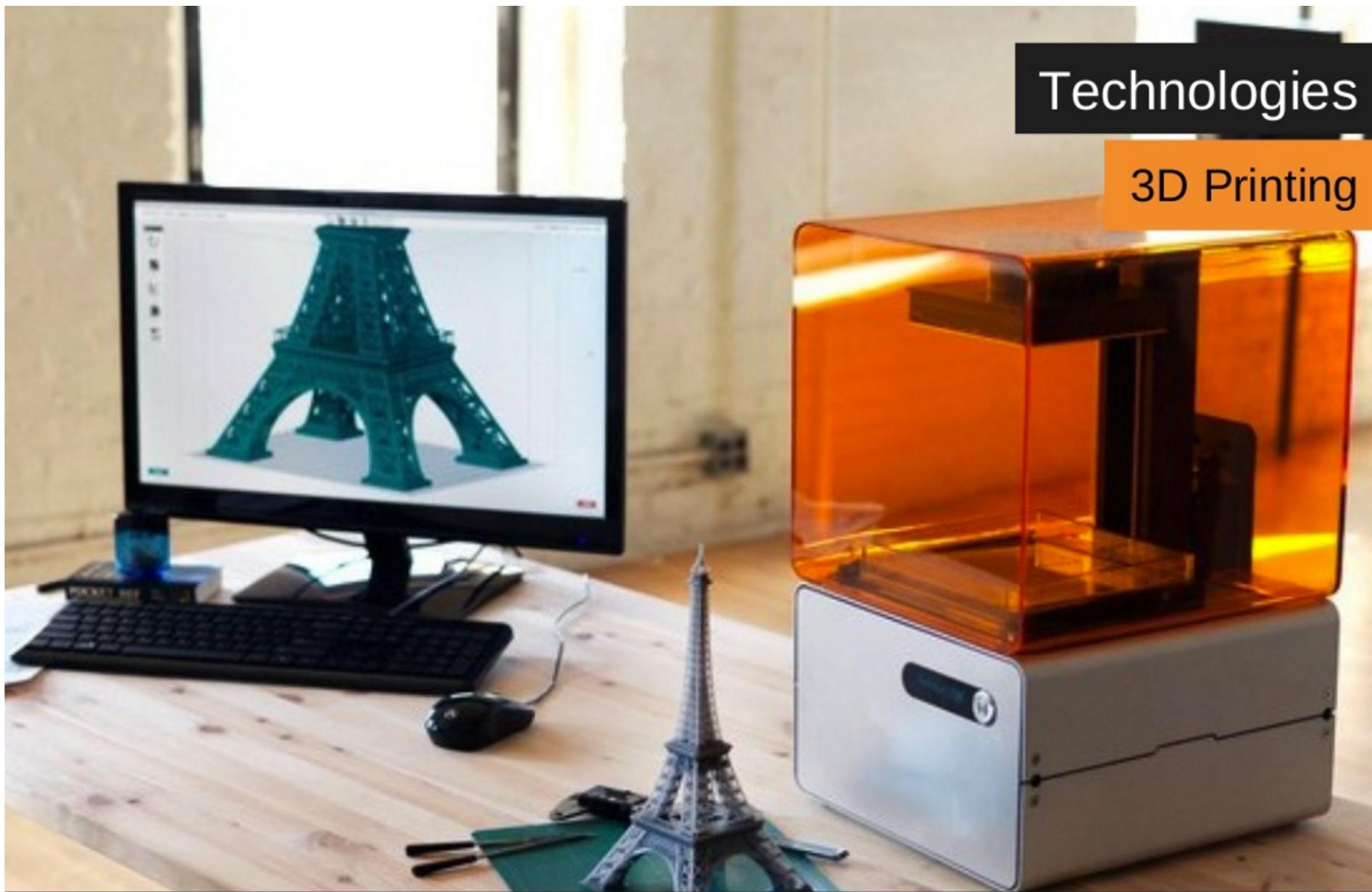
THE INTERNET OF THINGS

AN EXPLOSION OF CONNECTED POSSIBILITY



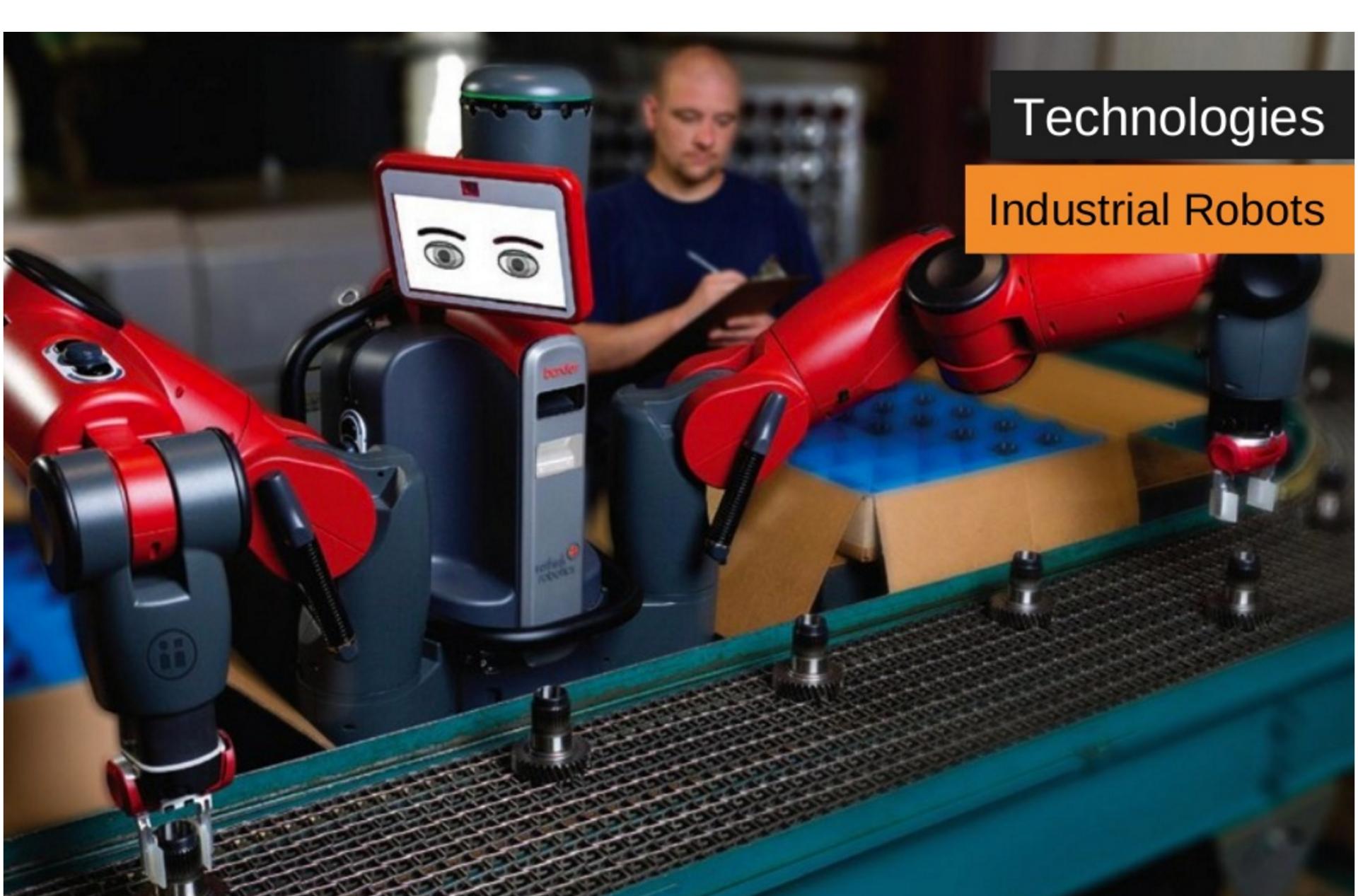
Technologies

3D Printing



\$40,000 (2007) to \$100 (2014)

400x in 7 years



Technologies

Industrial Robots

\$500,000 (2008) to \$22,000 (2013)

23x in 5 years

Breaking News, U.S., World, Weather,

Technologies

Drones



\$100,000 (2007) to \$700 (2013)

142x in 6 years

Nokia vs. Waze



2006: valuation \$140B

Disruption: Jan 2007: announcement iPhone



Oct 2007: acquired
by Nokia for \$8.1B



waze

Dec 2007:
Waze founded

Disruption: in 4 years time 10x amount of sensors for Waze



Jun 2012: valuation \$8.2B



Apr 2014: acquires
Nokia for \$7.2B

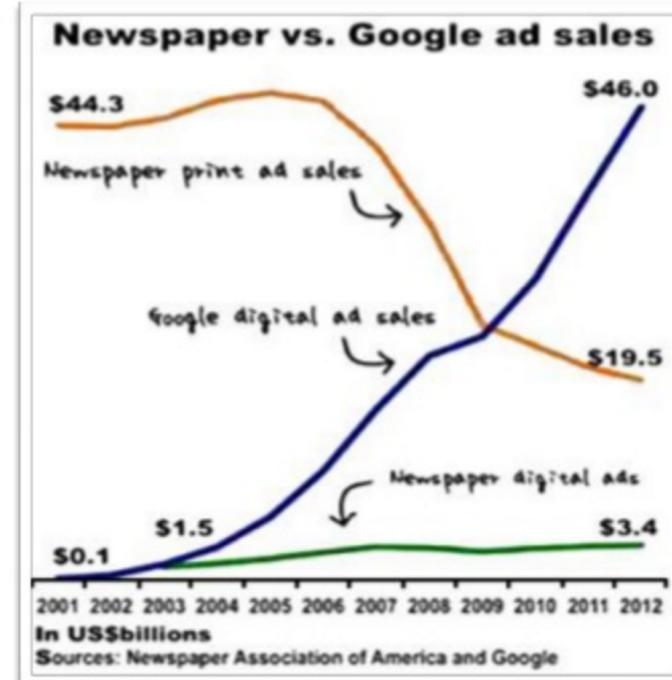
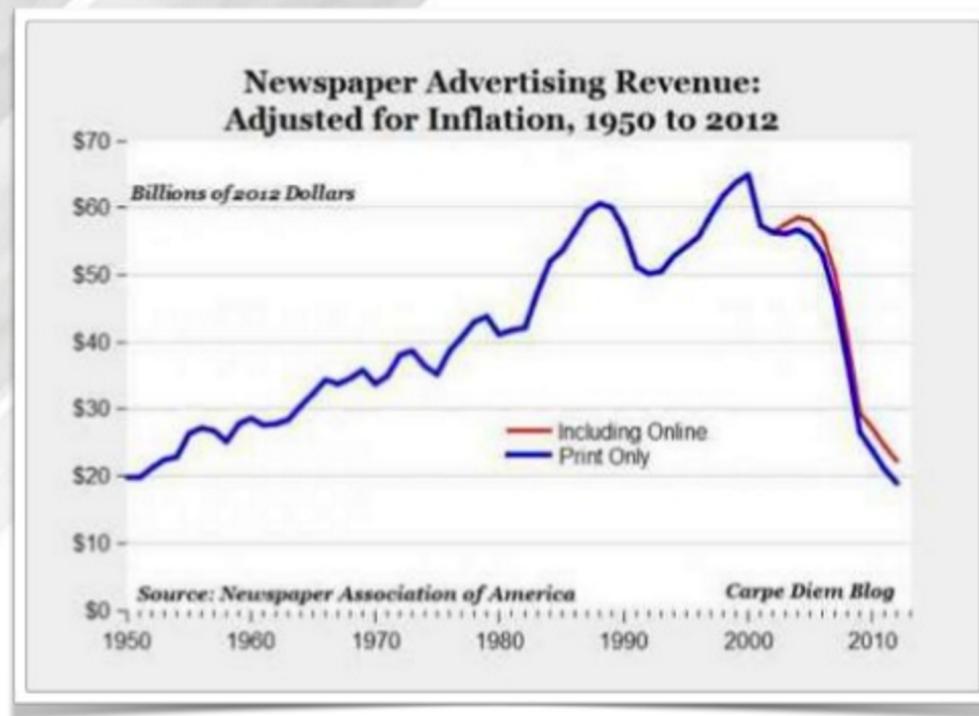


Jun 2013: acquires
Waze for \$1.1B



Uber - Uber, the on-demand car service currently valued at \$17 billion, uses interfaces to allow users to find and get matched with the best drivers. Because of this, it costs Uber essentially zero to add an additional driver.

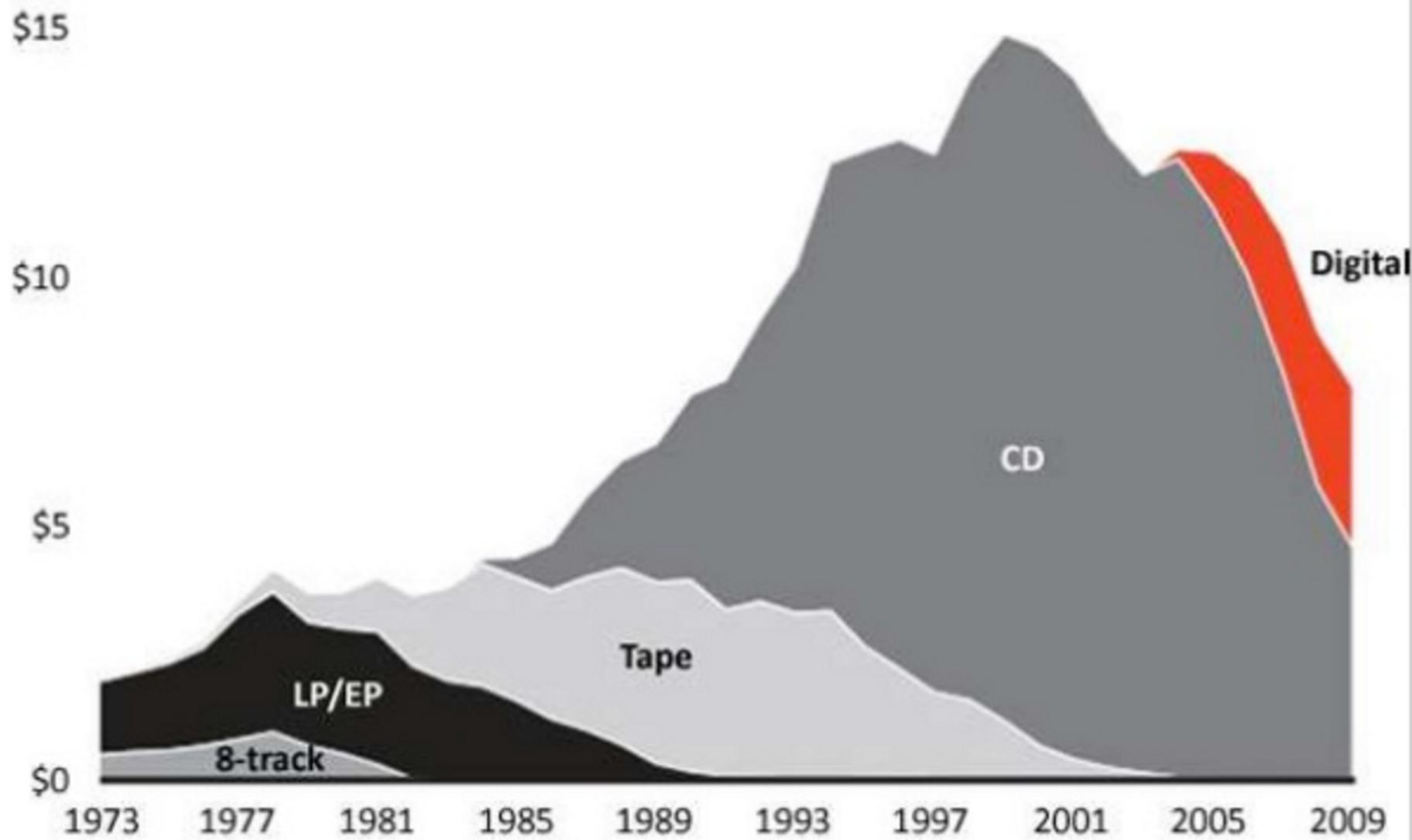
Newspapers



Global Music Industry Turnover (1973-2009)

In Billions

Source: RIAA year-end shipment statistics; Bain analysis



LINEAR → EXPONENTIAL



1996

MarketCap: **\$28B**

Employees: **140,000**



2012

Bankrupt



April 2012

MarketCap: **\$1B**

Employees: **13**

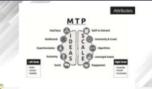


C coursedot

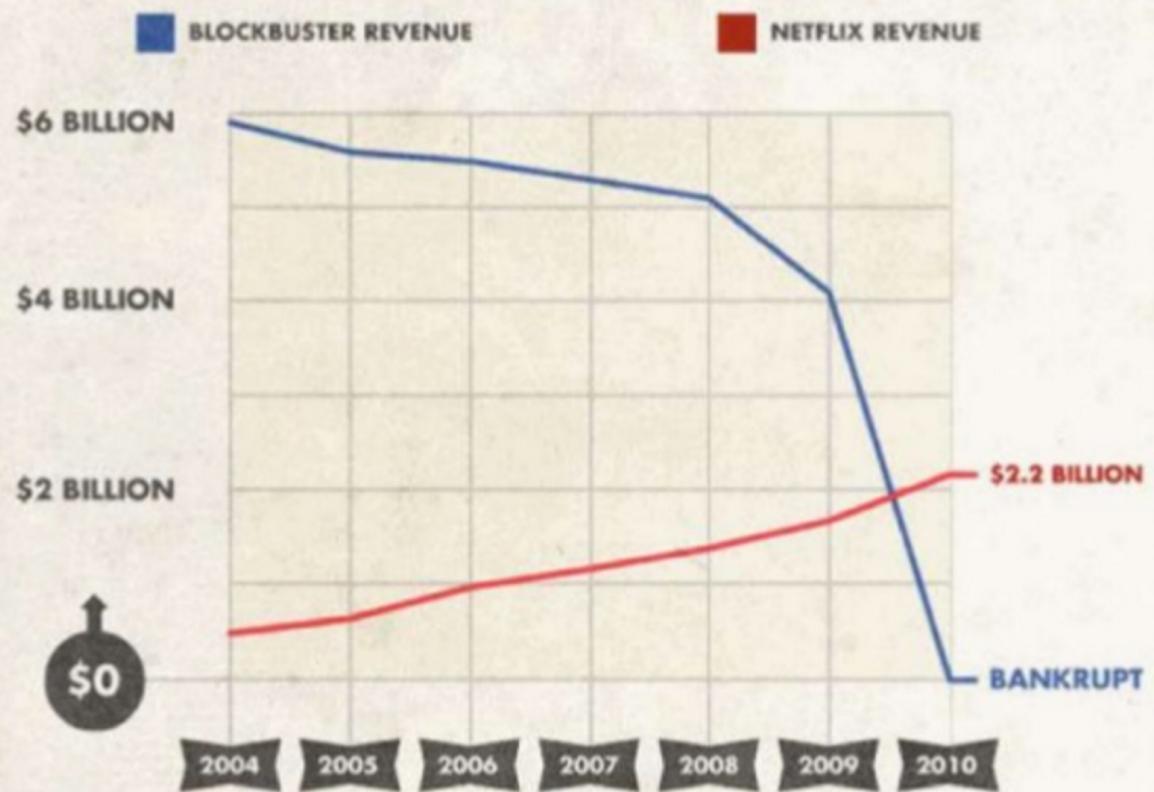
- We are building the first global online marketplace for IT training courses
- Connecting customers from over 25 countries to training companies, incl. 10 of the top 20 IT companies
- CourseDot helps professionals and their managers search for the best training courses they need – at the time, location, and price they want.

VS.

It's just like [theBooking.com](#) for IT training courses.



NETFLIX VS. BLOCKBUSTER (2004-2010)



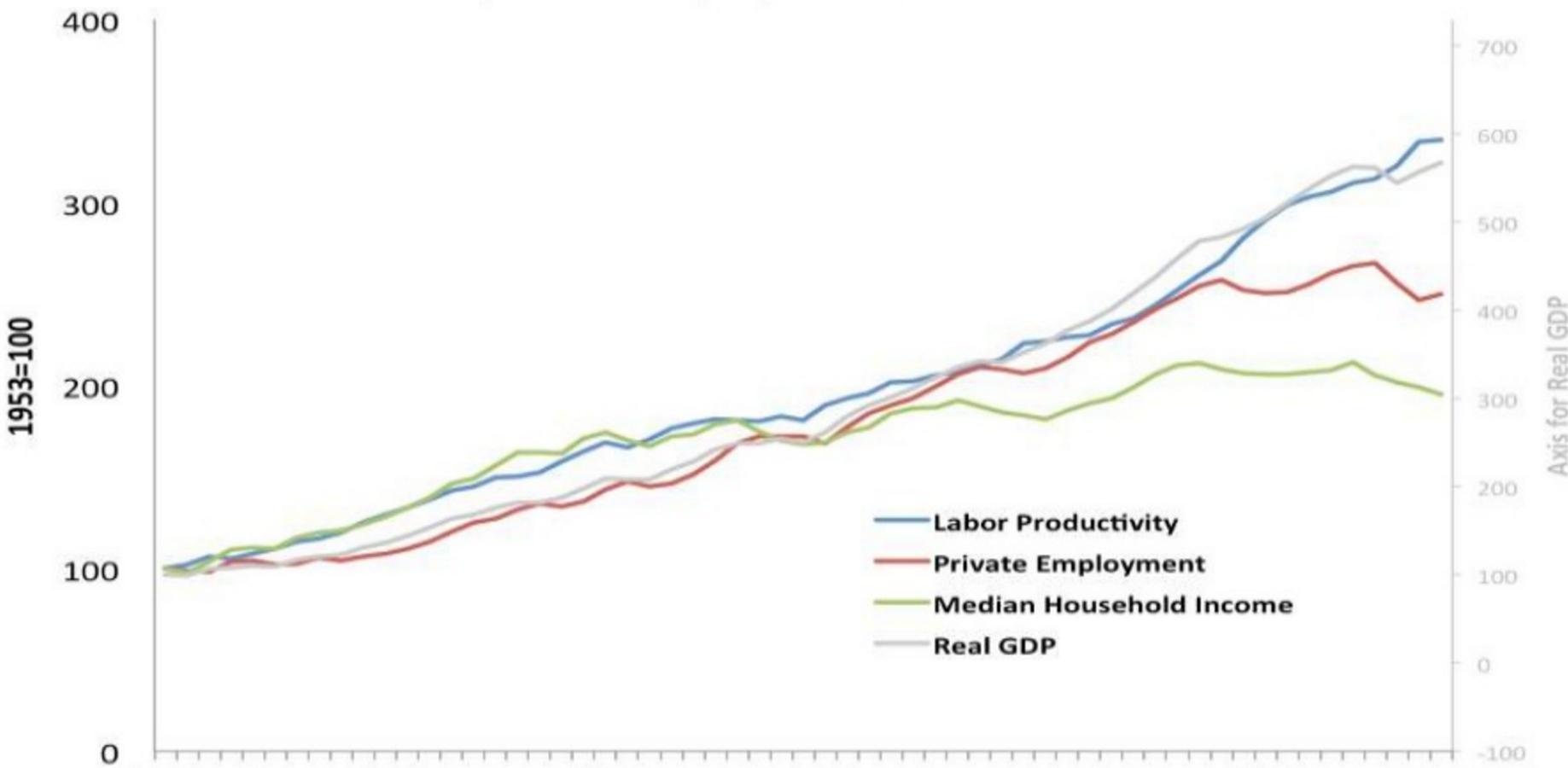
Netflix
4 billion
hours in Q1 2013

Will Humans Go Way of Horses?



The Great Decoupling

US Productivity, GDP, Employment, and Income: 1953-2011



Skill Disparities



It is Good to be Hydroinformatician

or at least to attend a course on
Hydroinformatics