



# Why universities will change or they will die

## SEE Into the Future

Almaty, May 27, 2015  
(20 years left)

A photograph of a group of graduates in blue caps and gowns. They are smiling and clapping, suggesting a celebratory event like a graduation ceremony. The graduates are of various ethnicities, and the focus is on a group of young women in the foreground.

**50%** of graduates  
don't work in their field

**70%** of students  
don't get fundamentals

**80%** of graduates  
don't speak foreign language





Education for paper,  
not for knowledge

Education inflation

Education devaluation

“ I am getting more and more  
frustrated with the fact  
my university gives me no value ”

*3d year IT student  
technical university in Almaty*

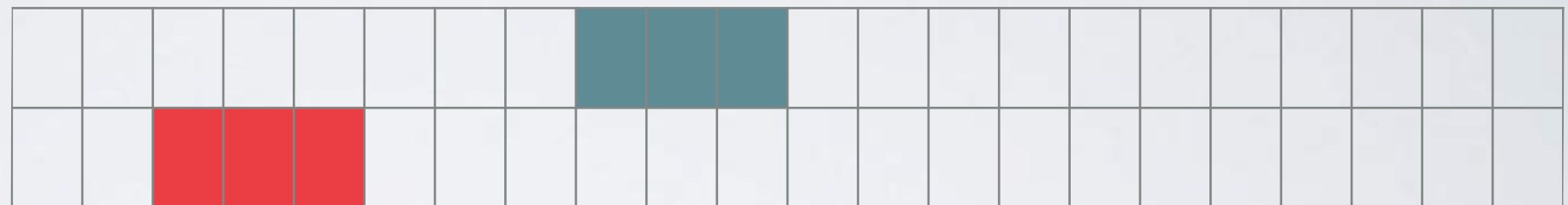
***runs own startup***

*conversation on May 16, 2015*

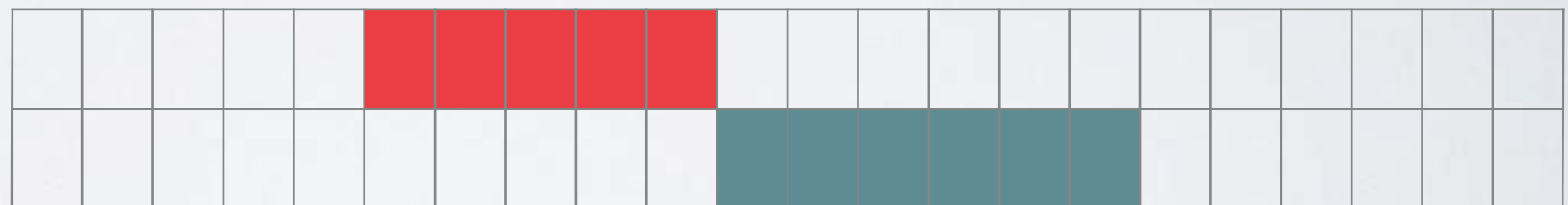


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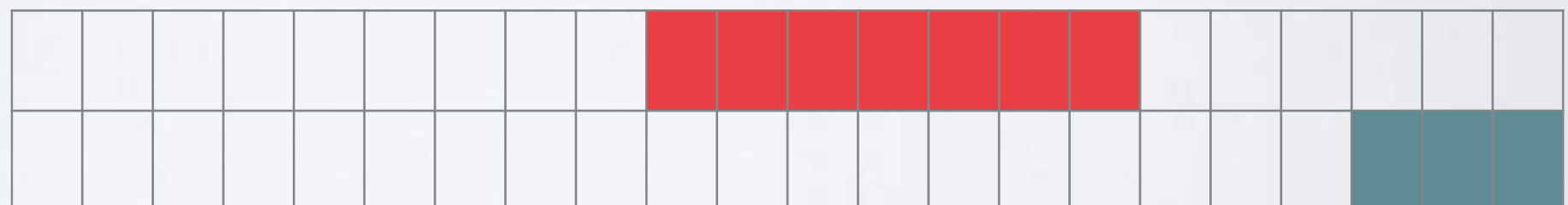
## Intro to algorithms



## Programming & Robotics

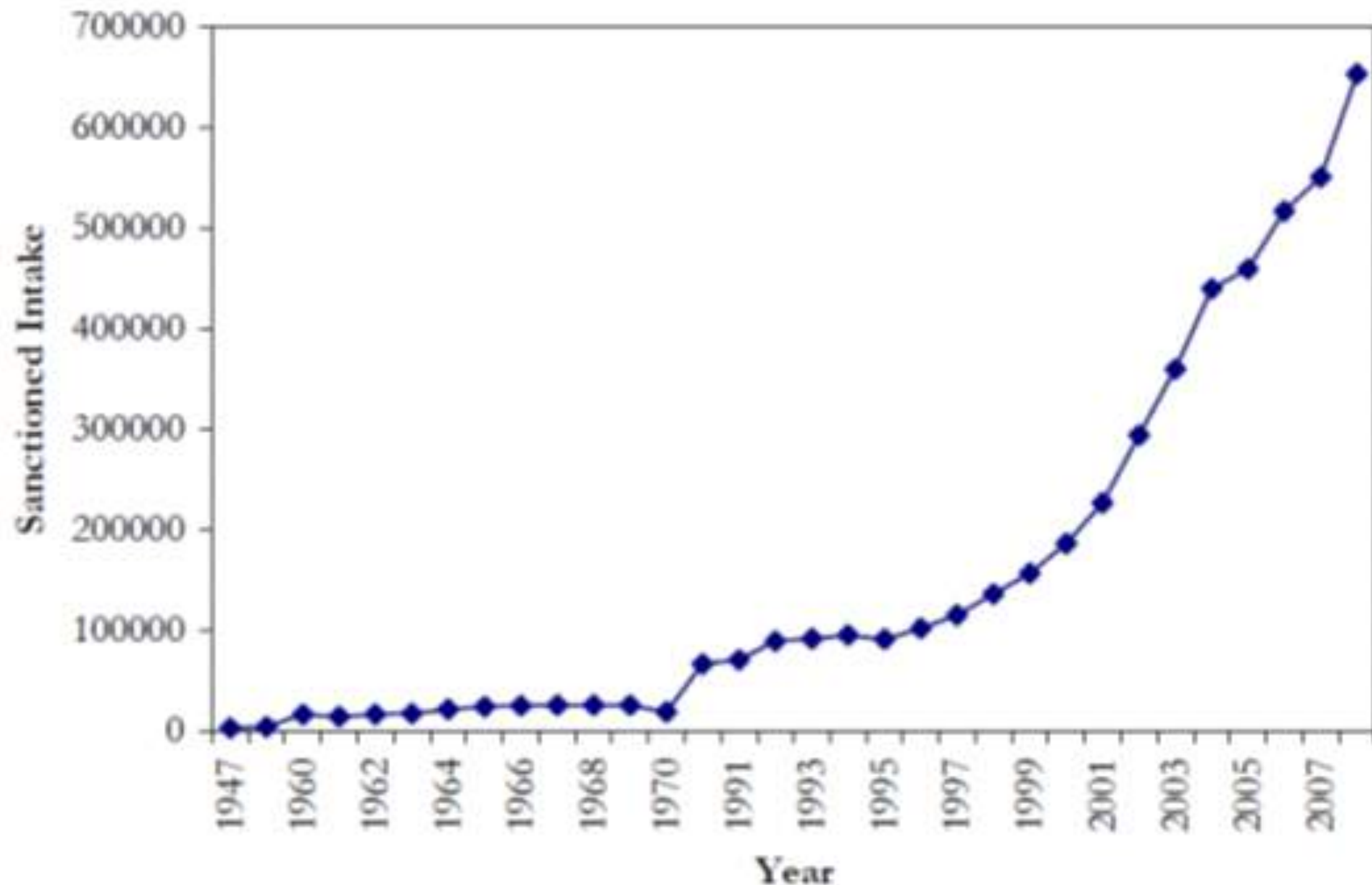


## Python programming language



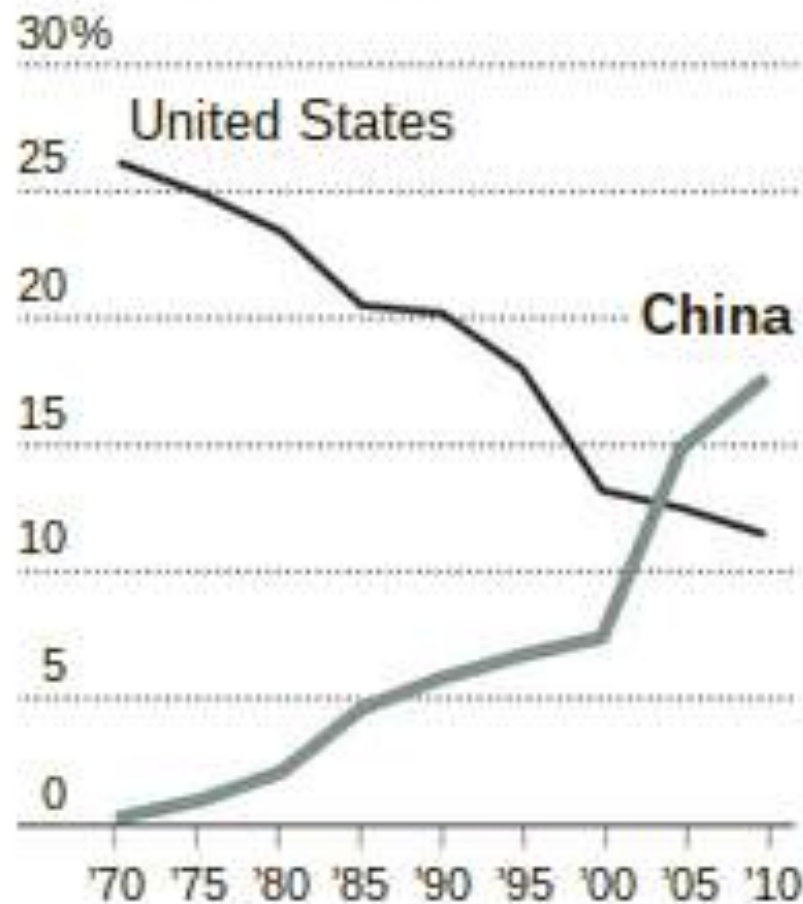
Israel, S.Korea, US, Singapore, Finland  
Kazakhstan

# Intake of Indian students for engineering

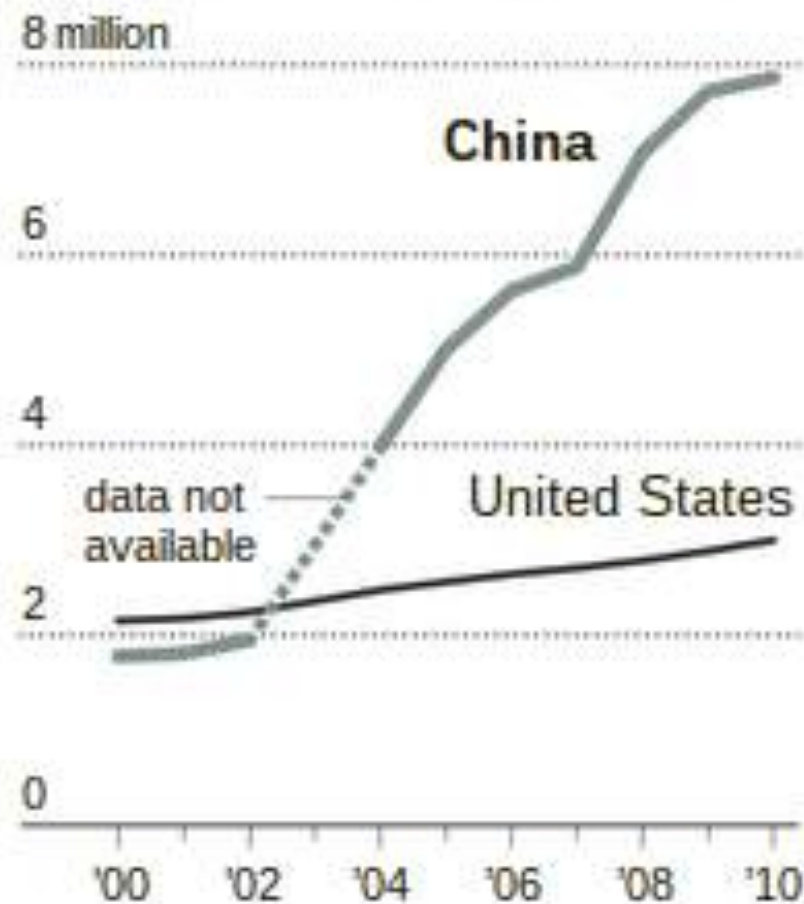


# China focuses on education

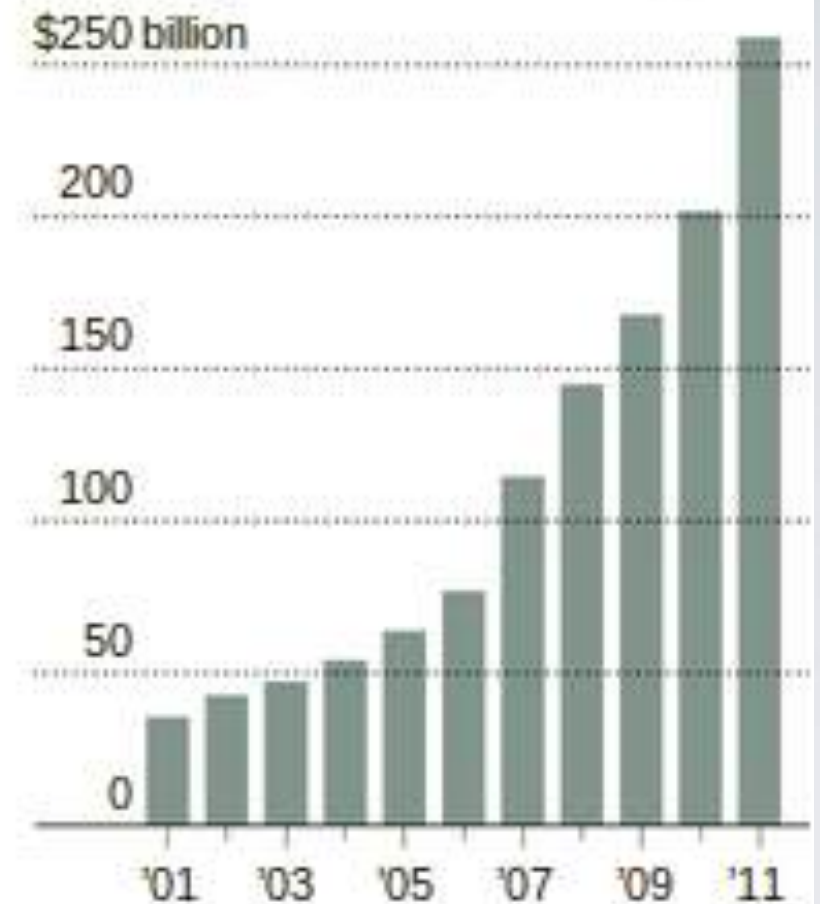
**Share of worldwide college enrollment**  
2- and 4-year colleges



**College degrees awarded**  
2- and 4-year college degrees or higher



**Education spending in China**  
By local, provincial and national gov'ts



Sources: UNESCO (degrees, enrollment); China finance ministry, via CEIC Data (spending)

# Graduates employment: considerations



School quality

Faculty training

Involvement of business

Salary, etc.



Technology

Labour mobility



Most likely you will find this fictitious



Future

# Exponential growth



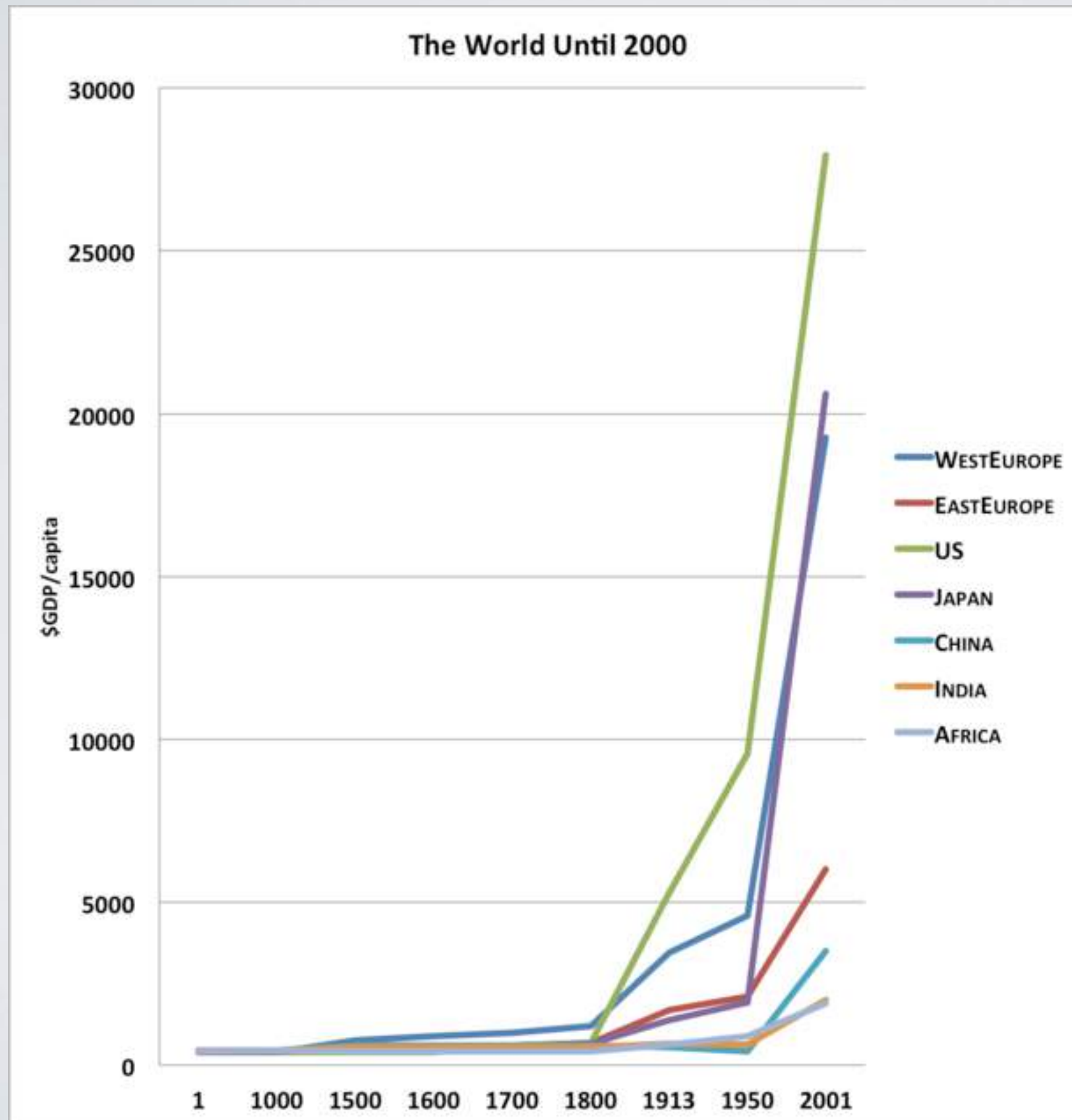
# Real GDP for the last 2000 years

in 1990 USD





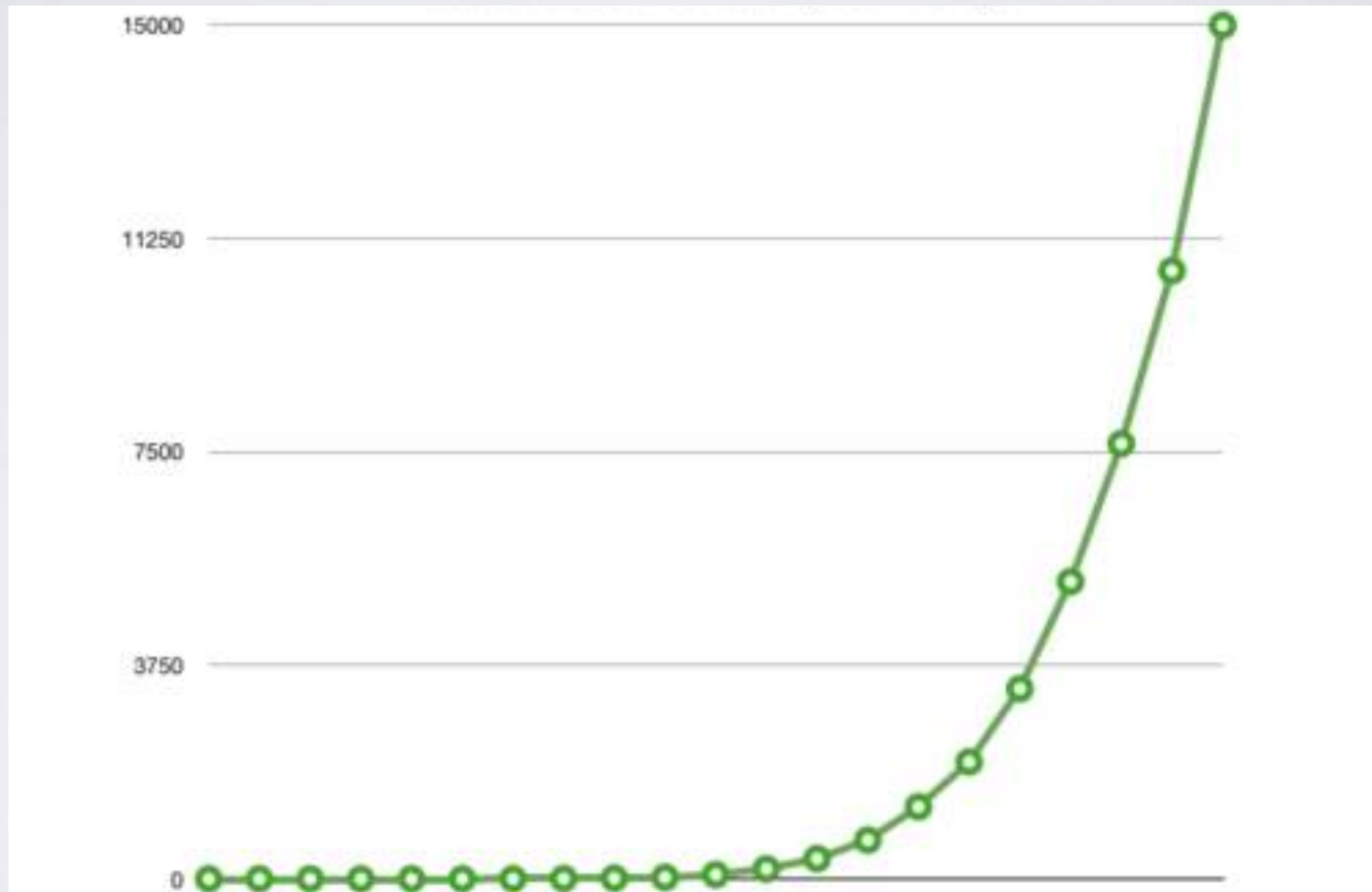
# GDP per capita by region for 2000 years



<http://www.theatlantic.com/business/archive/2012/06/the-economic-history-of-the-last-2000-years-part-ii/258762/>

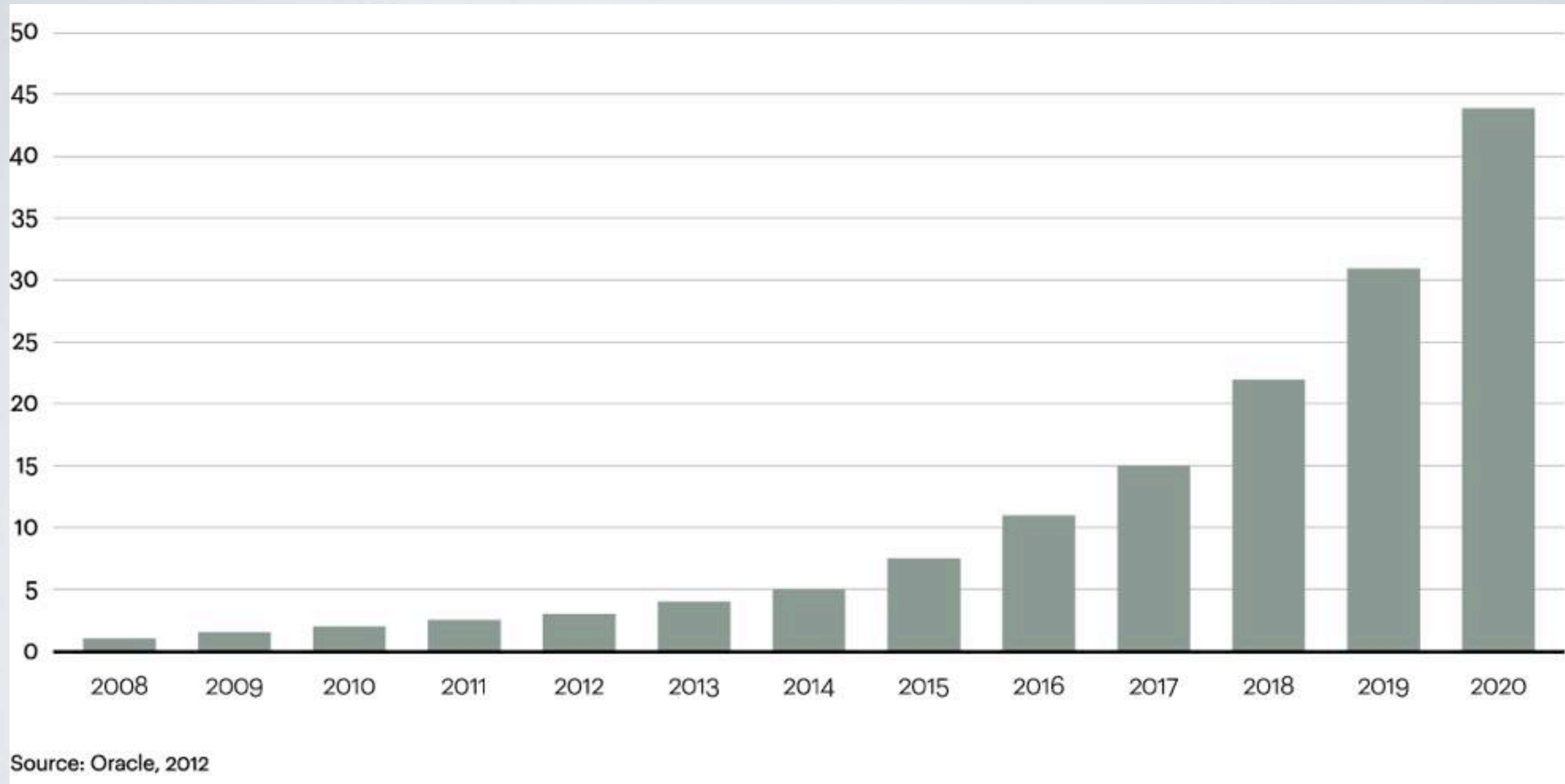
# Global data traffic (1990 - 2010)

in petabytes / mo

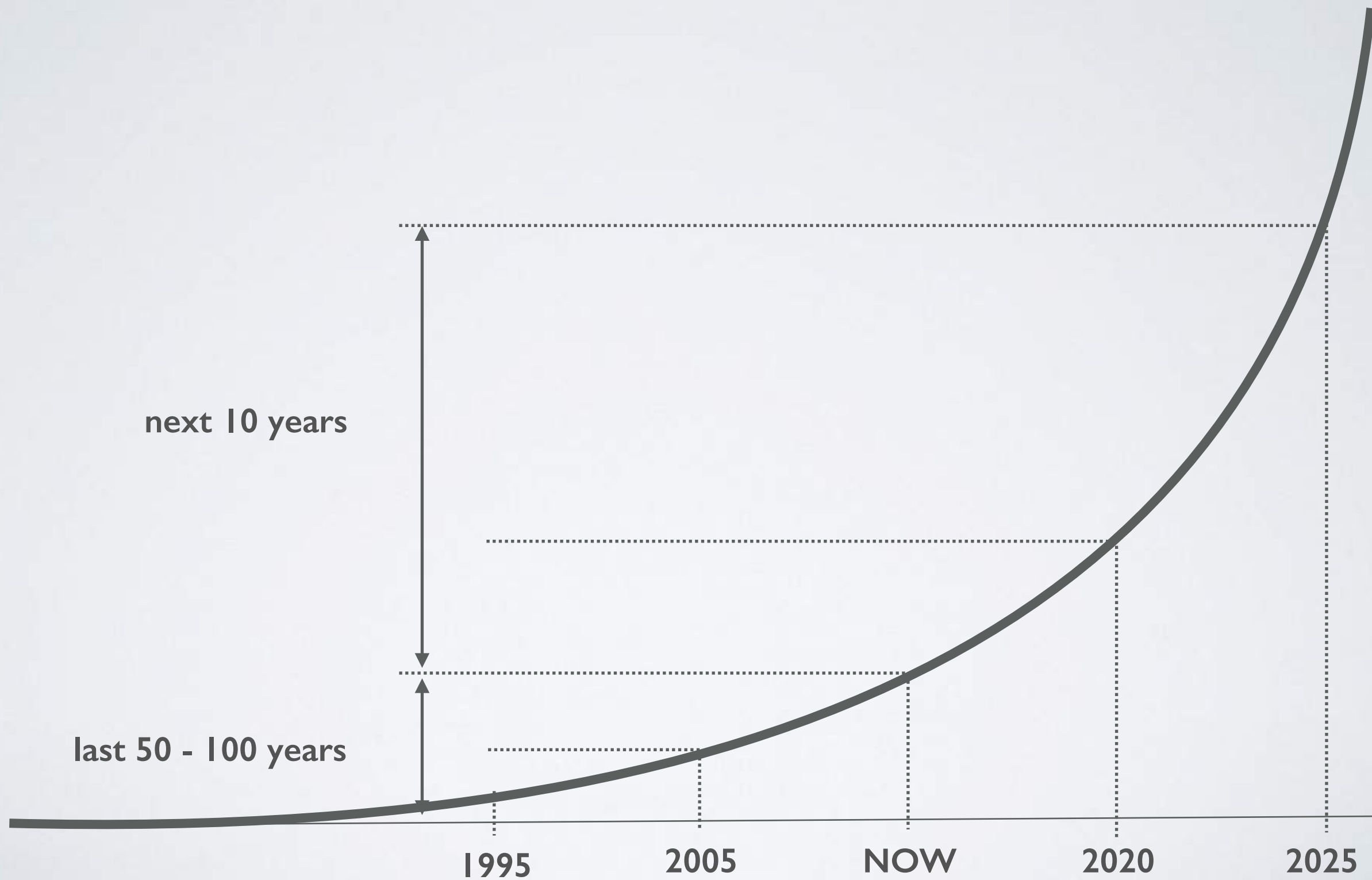


# Data produced

in zettabytes



# Machine age









**David Yegembayev**

my son

born Jan 2015



4 mo

2015



5 y.o.

2020



15 y.o.

2030



25 y.o.

2040



4 mo



5 years



15 years



25 years

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**before 2015**



Kasparov lost to computer

smartphones took over the market

computers understand human speech

robotic vacuum cleaners selling to consumers

voice calling is free



4 mo



5 years



15 years



25 years

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**2015**



consumer laptop app wins any human in chess play

90% of car production is robotised

3 - 4 min human operates jet in the air

smartphone prices fell below \$100

IT companies are valued the most





4 mo



5 years



15 years



25 years

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**2037**



population 8.7 bln

50% of work done by machines

driving cars by human will become illegal

nano-robots inside human body

physical human brain connected to virtual brain



4 mo



5 years



15 years



25 years

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**2037**



50% of work done by machines

**Financial analysts**

**Accountants**

**Programmers**

**Consultants**

**Doctors (partially)**

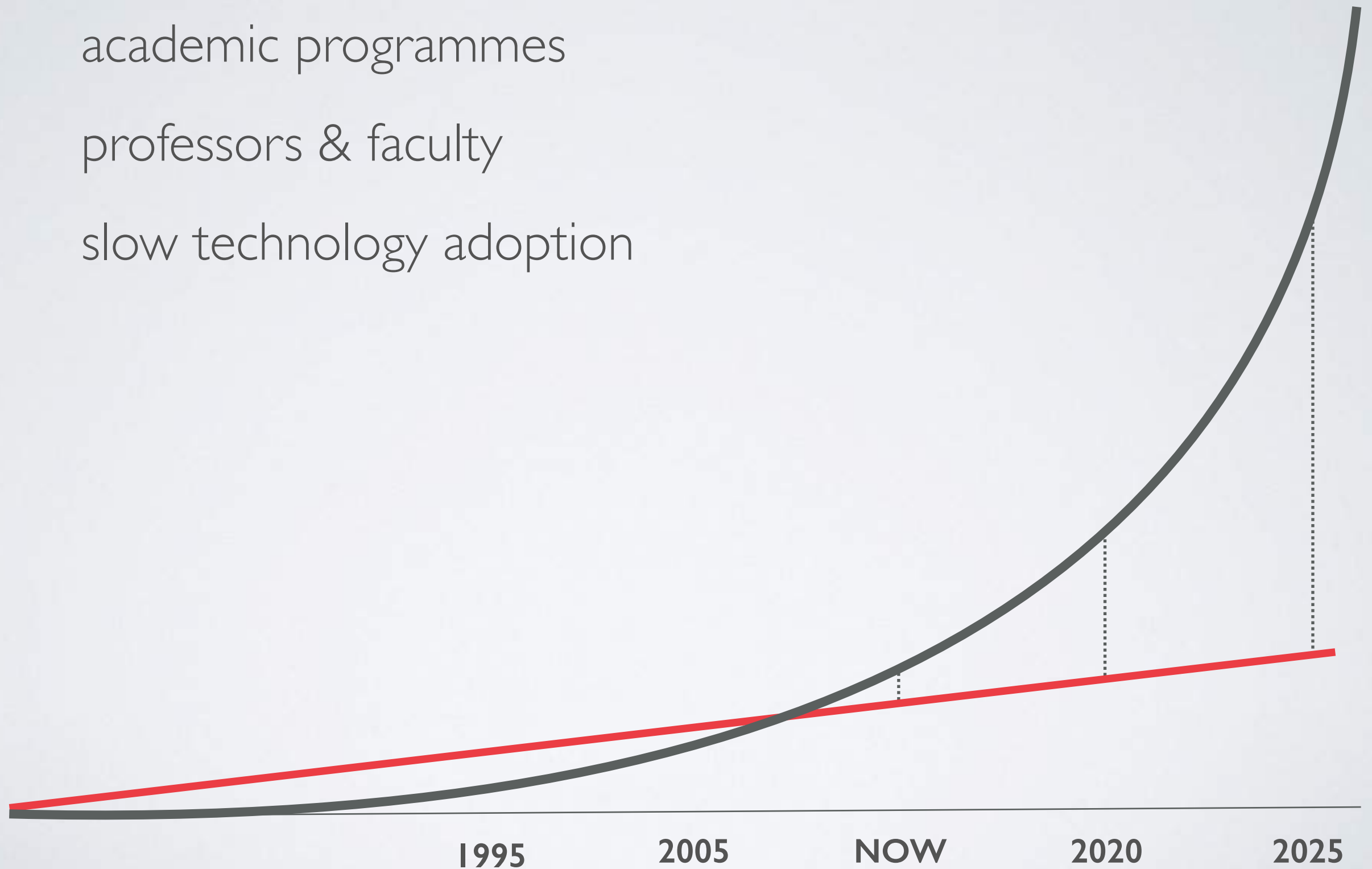
business ?  
technology ?  
medicine ?  
science ?  
performing arts ?

# Education severely falls behind

academic programmes

professors & faculty

slow technology adoption







4 mo



5 years



15 years



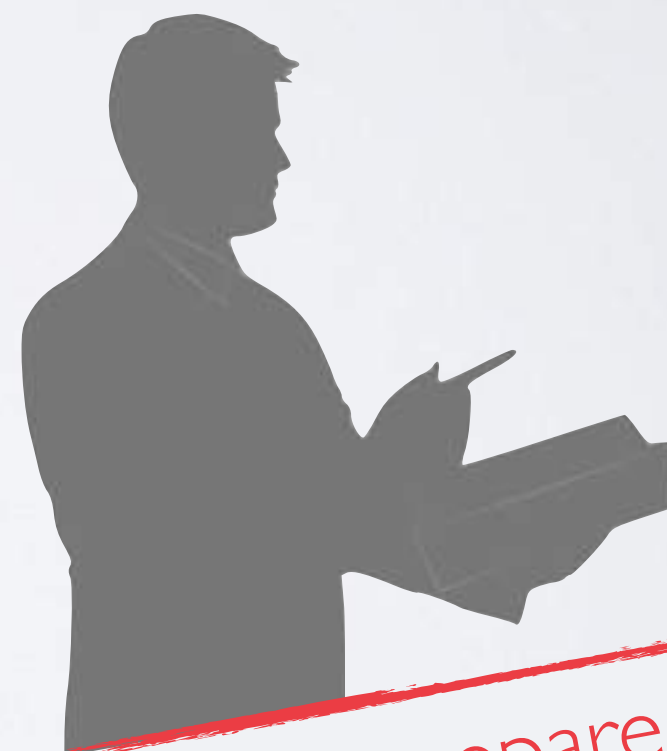
25 years

**2037**



Professor  
PhD

15 - 20 years experience  
specialty + innovation expertise



do we prepare these  
professors **TODAY** ?

# Universities will be changed. Or they will die

(c. 20 years left)

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**2037**

Risk:

- business schools
- law schools
- medical universities

Prospects:

- engineering
- science
- arts





most universities are not capable to

teach things we don't know

predict labor market in 10 years from now

produce globally competitive labour

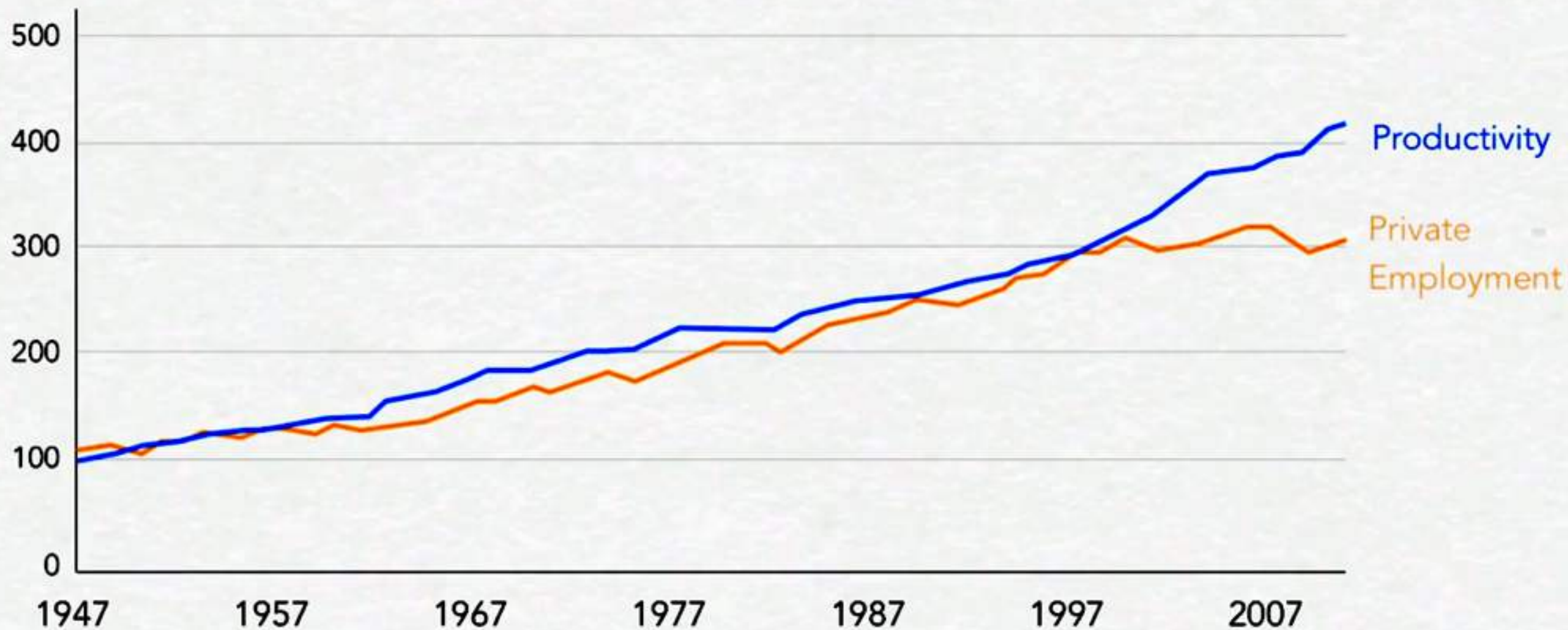


Universities create future jobless





# Labour productivity & employment (1947 - 2010)



shall we create even more employees ?



Elysium



Huge gap between poor and wealthy

*FYI: watch gap in EU in 2015*



YOU COMPETE

(and you will 100% loose)



YOU CREATE

(and you will have chances)






Entrepreneurship  
commercially viable  
creativity + innovation



Can  
universities  
teach  
entrepreneurship ?





A close-up photograph of two male MMA fighters in a physical struggle. The fighter on the left has a bloody forehead and nose. The fighter on the right has a bloody forehead and chest. Both have extensive tattoos. A semi-transparent grey box with white text is overlaid on the bottom left.

entrepreneurs teach  
entrepreneurs  
sharpen skills in real fight



we can't teach things  
we don't know



teach basics  
teach to learn

develop culture  
creative environment

# Magna Charta Universitatum

Signed by c. 400 Universities in Bologna, 1988

## **MAGNA CHARTA UNIVERSITATUM**

### **Preamble**

The undersigned Rectors of European Universities, gathered in Bologna for the ninth centenary of the oldest University in Europe, four years before the definitive abolition of boundaries between the countries of the European Community; looking forward to far-reaching co-operation between all European nations and believing that people and States should become more than ever aware of the part that universities will be called upon to play in a changing and increasingly international society,

Consider

1. that at the approaching end of this millennium the future of mankind depends largely on cultural, scientific and technical development ; and that this is built up in centres of culture, knowledge and research as represented by true universities ;
2. that the universities' task of spreading knowledge among the younger generations implies that, in today's world, they must also serve society as a whole ; and that the cultural, social and economic future of society requires, in particular, a considerable investment in continuing education ;
3. that universities must give future generations education and training that will teach them, and

education  
I want  
for my son

not for diploma  
not for knowledge  
**for the mindset**

20% fundamentals  
80% real fight

support for creativity  
motivate to learn

PS. Mobility is  
No 1 threat (and opportunity)  
in the next 10 years





Ruslan Yegembayev  
Founder & CEO  
[mobiliuz.com](http://mobiliuz.com)

we make cars smart and connected

