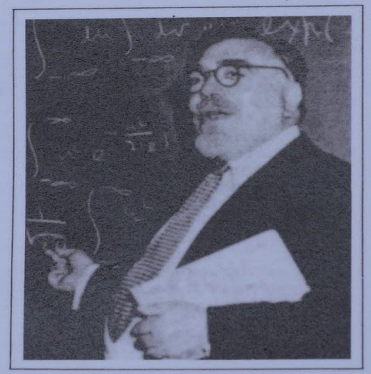
Started a long time ago...

Thomas Bayes
1701 – 1761

DA CAPO SERIES IN SCIENCE

THE HUMAN USE OF HUMAN BEINGS

CYBERNETICS AND SOCIETY



NORBERT WIENER

1894 – 1964

I propose to consider the question:

can machines think?

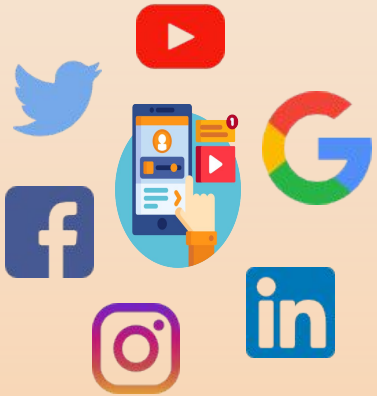
This should begin with definitions of the meaning of the terms machine and think.

Alan Turing
1912 – 1954

Turing award for AI (2019)

Evolution of AI

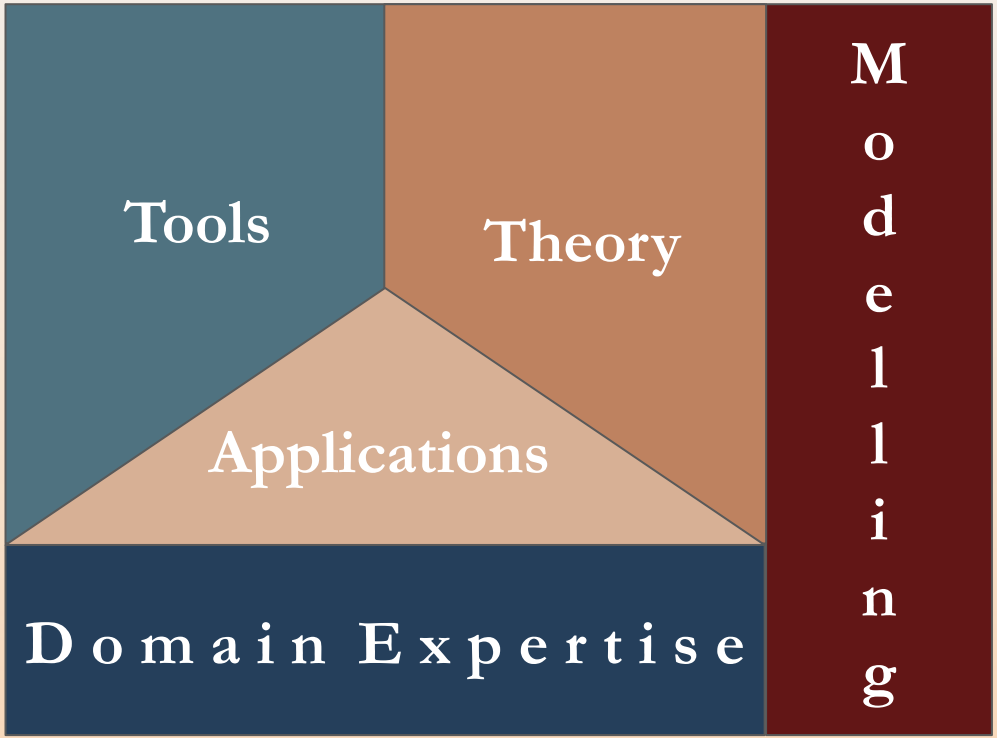
Internet



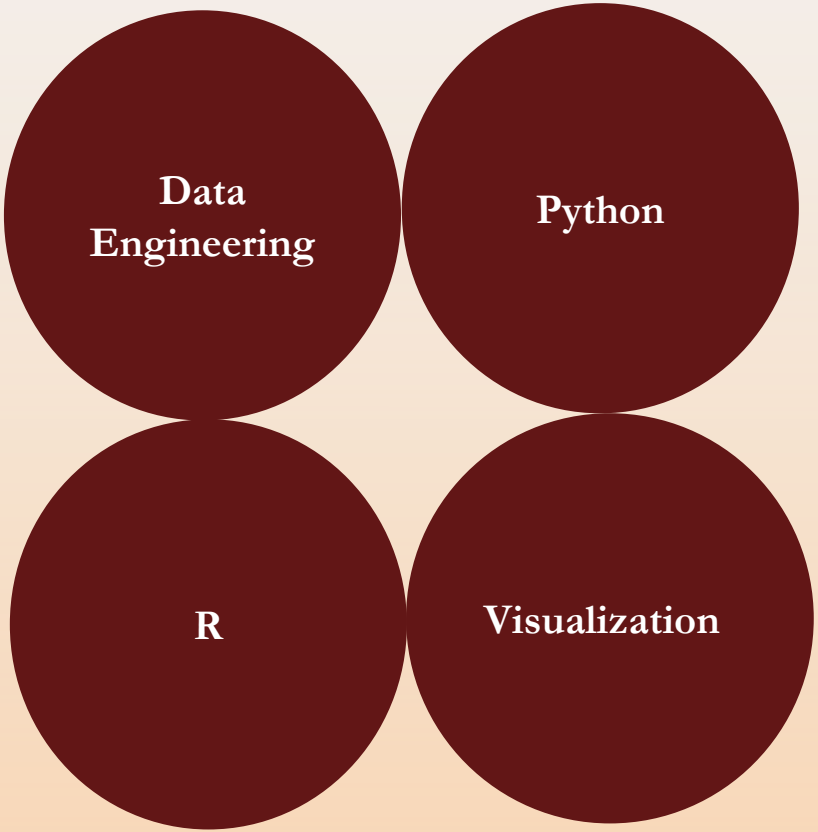
Enterprise

Consumer

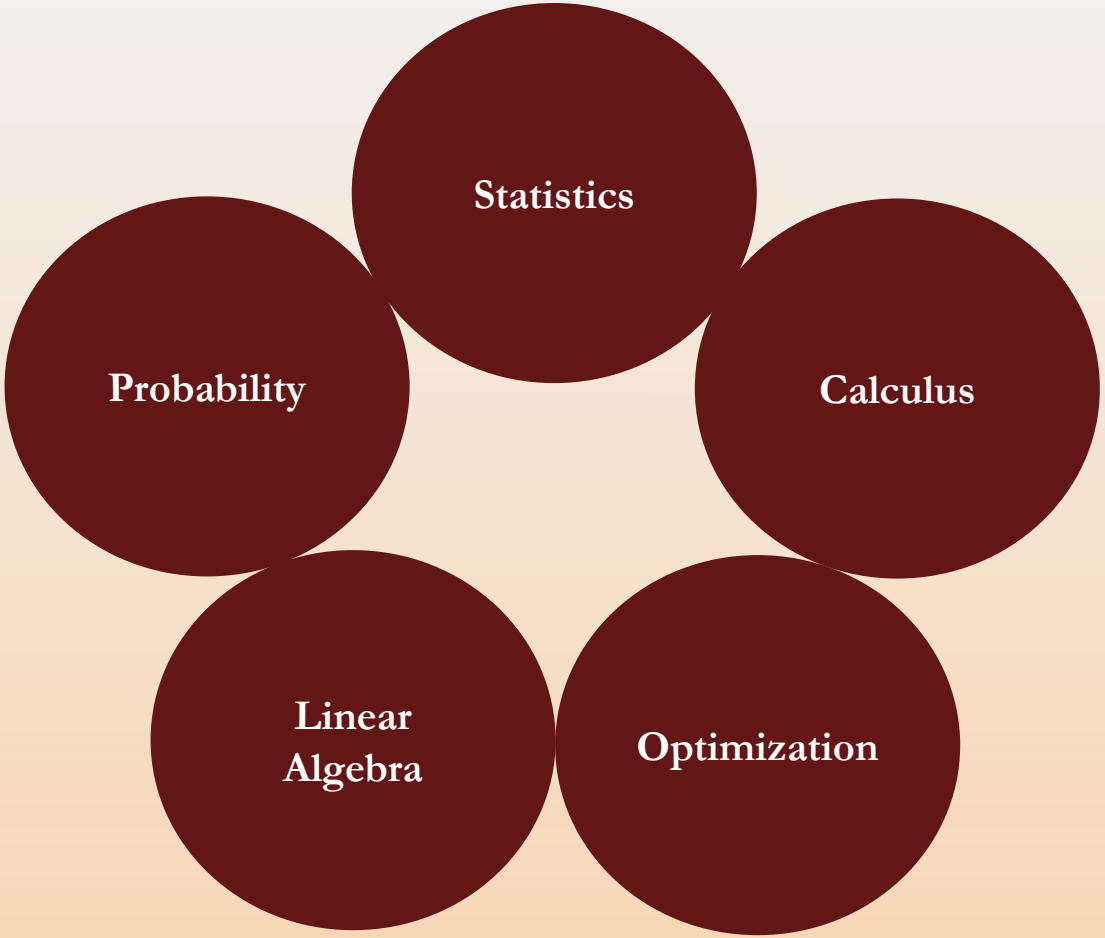
What is AI all about?



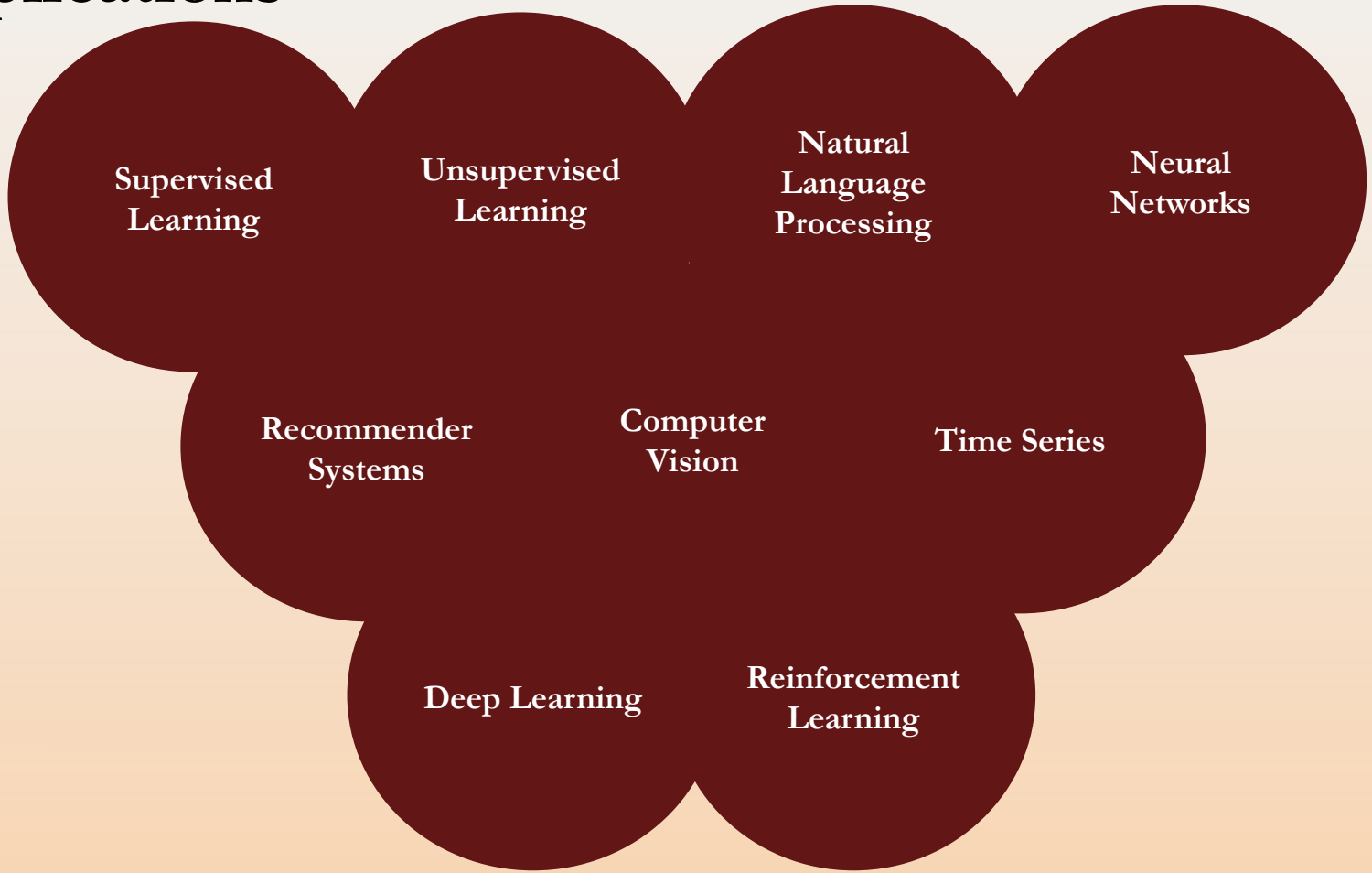
Tools



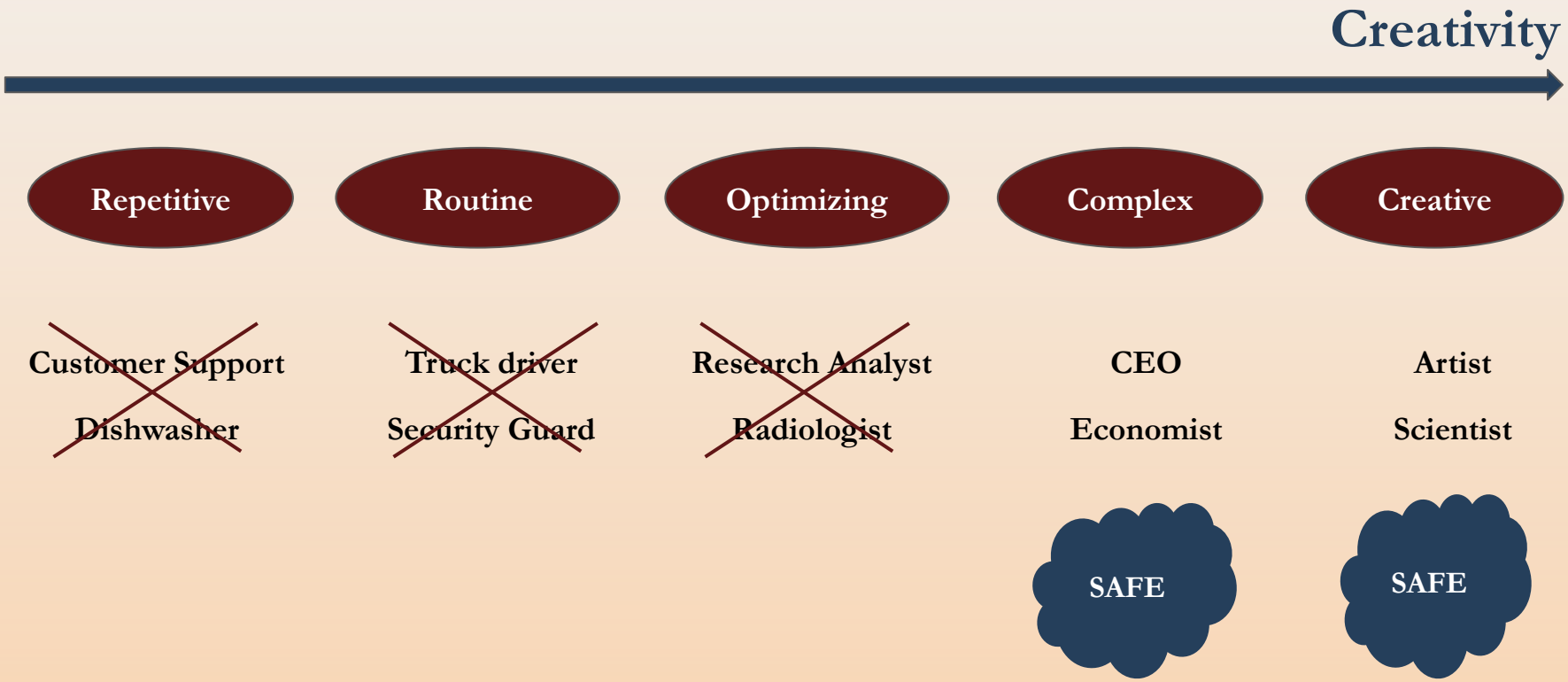
Theory


Statistics
Probability
Calculus
Linear Algebra
Optimization

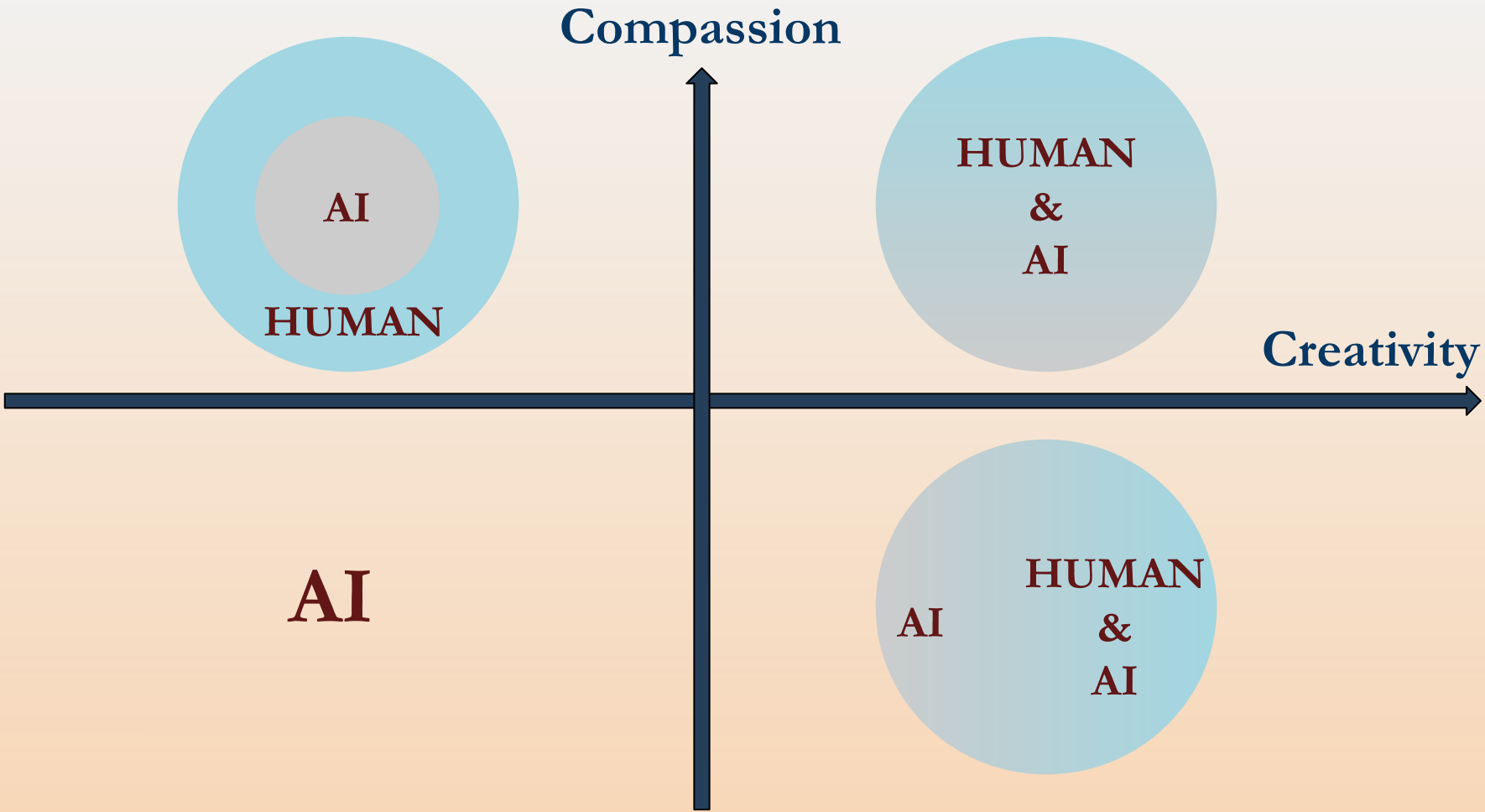
Applications



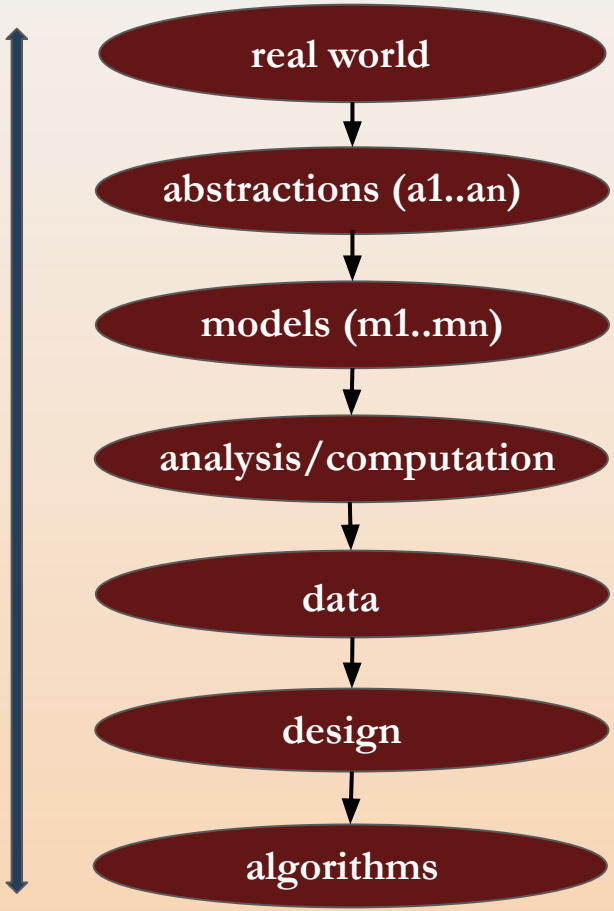
AI and the future of work




Compassion
Creativity
CEO
Teacher
Wedding Planner
Social Worker
Tour Guide
Marketing Director
Radiologist
Customer Support
Economist
Scientist
Security Guard
Research Analyst
Artist
Dishwasher
Truck driver


Compassion
AI
HUMAN
HUMAN
&
AI
Creativity
AI
AI
HUMAN
&
AI

Modelling life cycle



Purposes of a model

Explain mechanism, why do systems behave the way they do

Predict mechanism, can we make predictions based on the past

Identify

- the various distinctive features of a system
- the most distinctive feature of a system

Differentiate between

- really-really matters
- really matters
- sort of matters

Convince others of your point of view

There is no such thing as a correct model,

different models have different *purposes*

models which can pick out a distinctive feature

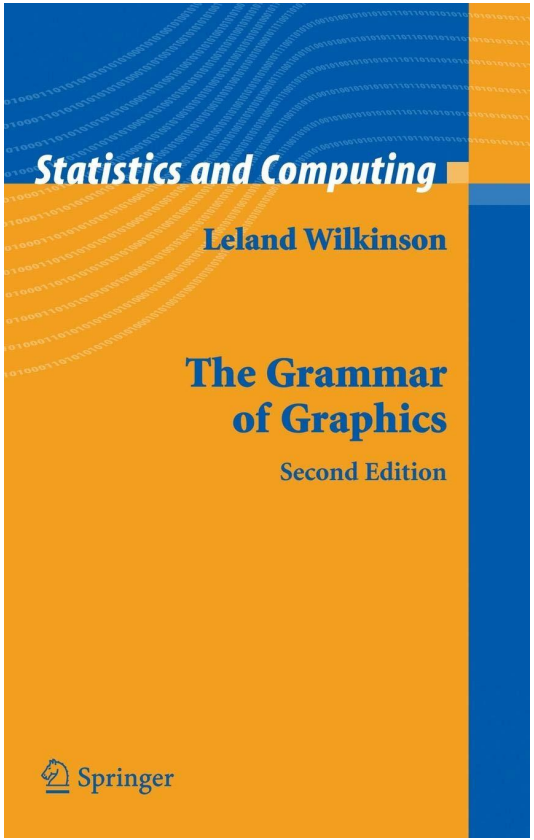
simplified models of an entire system

real-world experiments

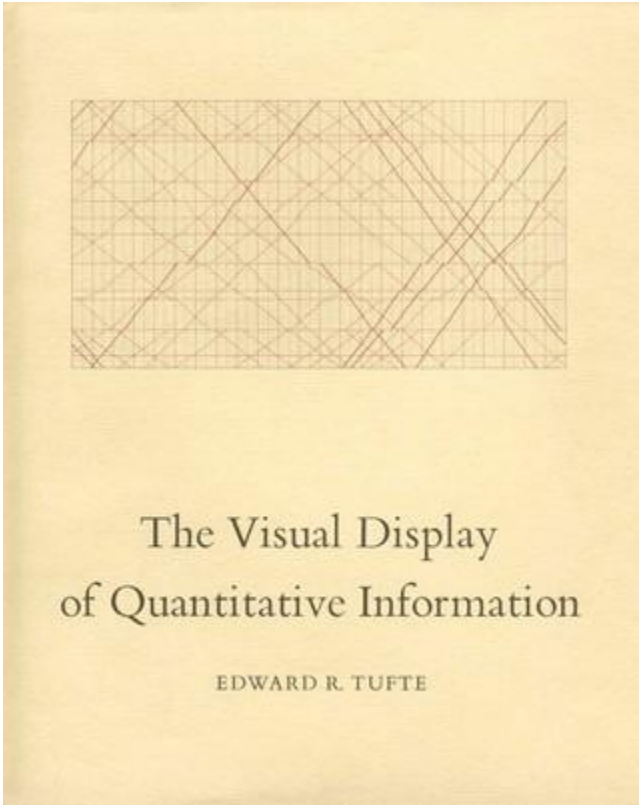
Real world (games), abstractions & the Nash equilibrium

The art and craft of data visualisation

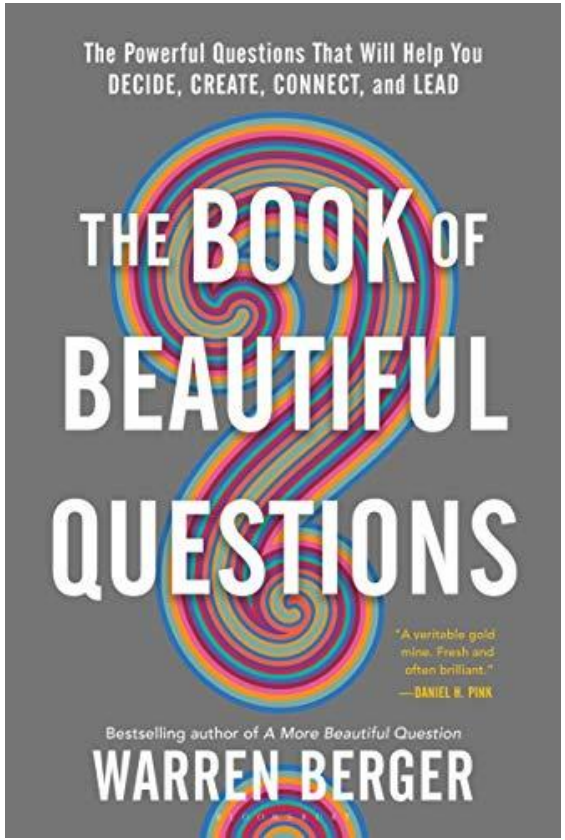
The art and craft of visualisation



The art and craft of visualisation

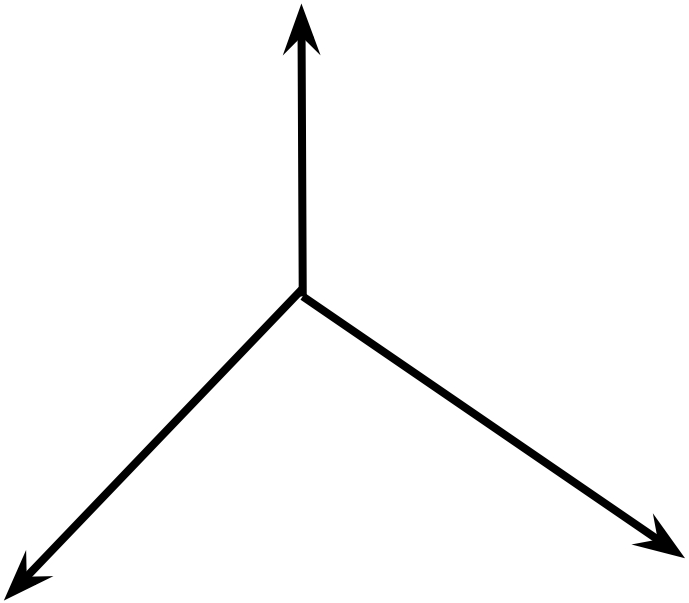


The art and craft of visualisation



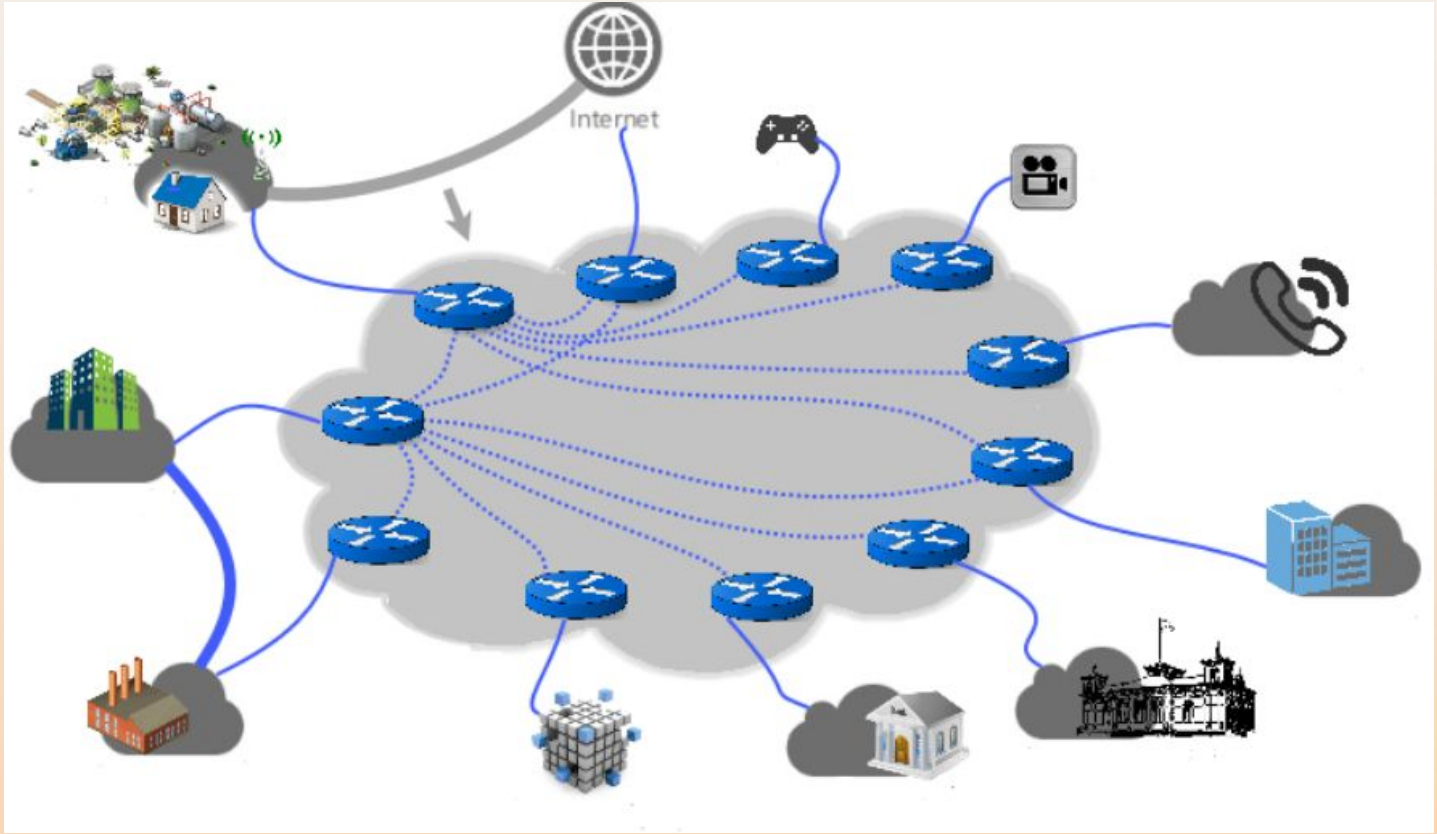
Can we construct a simple 3-D visualisation of a human?

HR perspective



Mobility on demand (Ola, Uber)

Communication networks (Internet)



Technologies

Mobile payments … on the road to fintech

Design a mobile payment system …

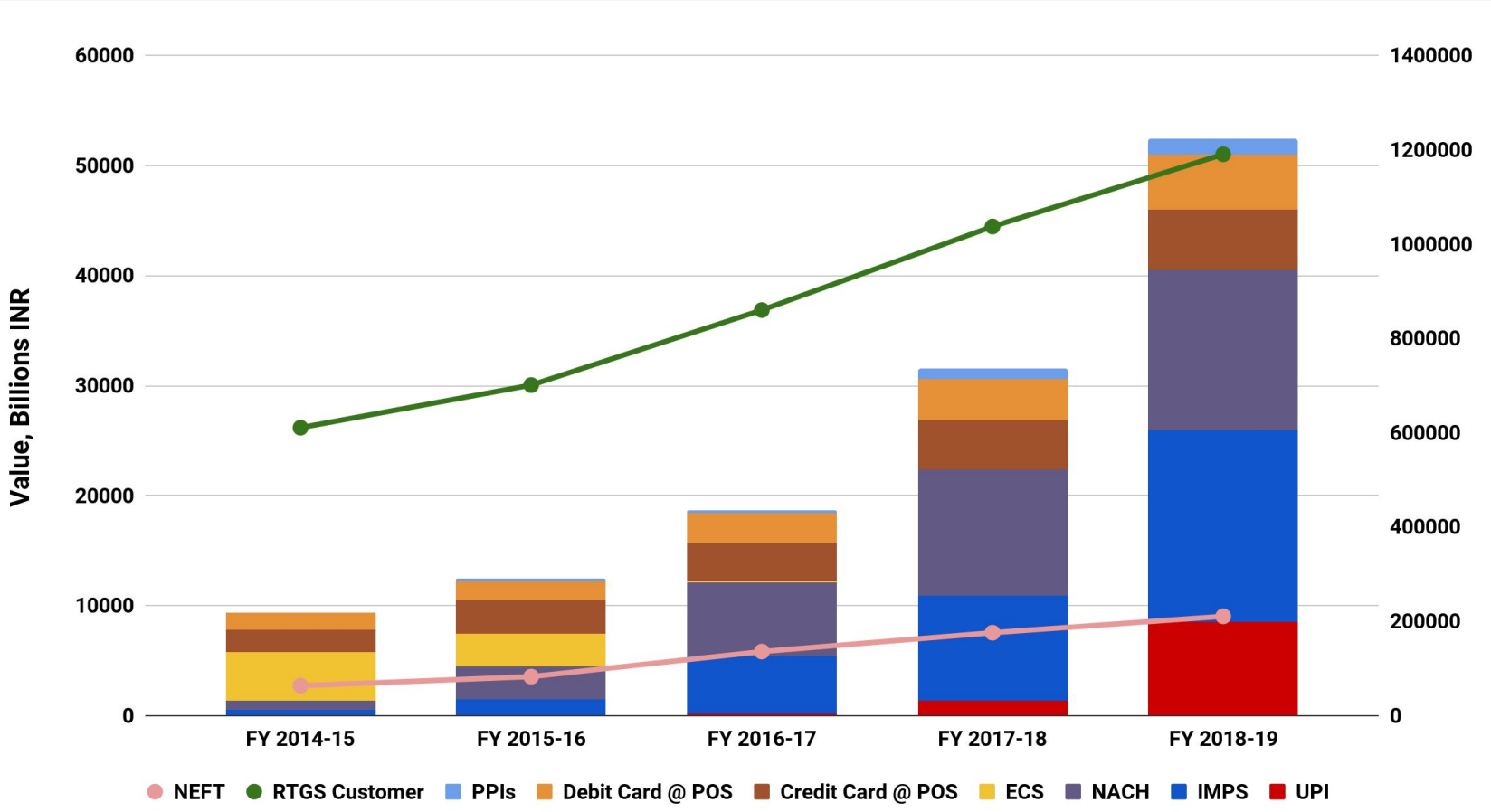
Interoperable, Secure & Fast

Mobile payment architectures for India

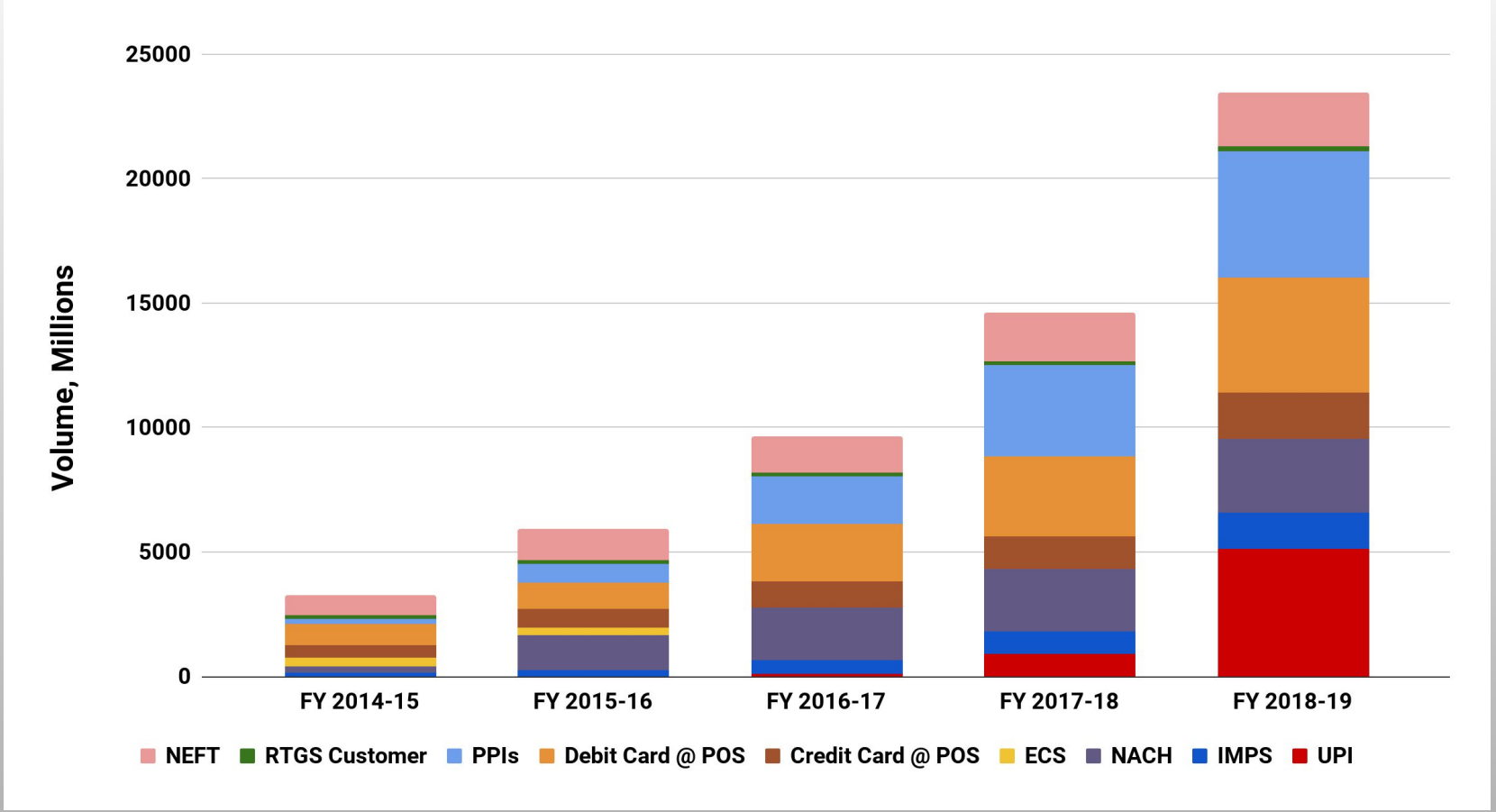
Publisher: IEEE

4 Author(s) Deepti Kumar ; Timothy A Gonsalves ; Ashok Jhunjhunwala ; Gaurav Raina **View All Authors**

Digital payments (value)



Digital payments (volume)

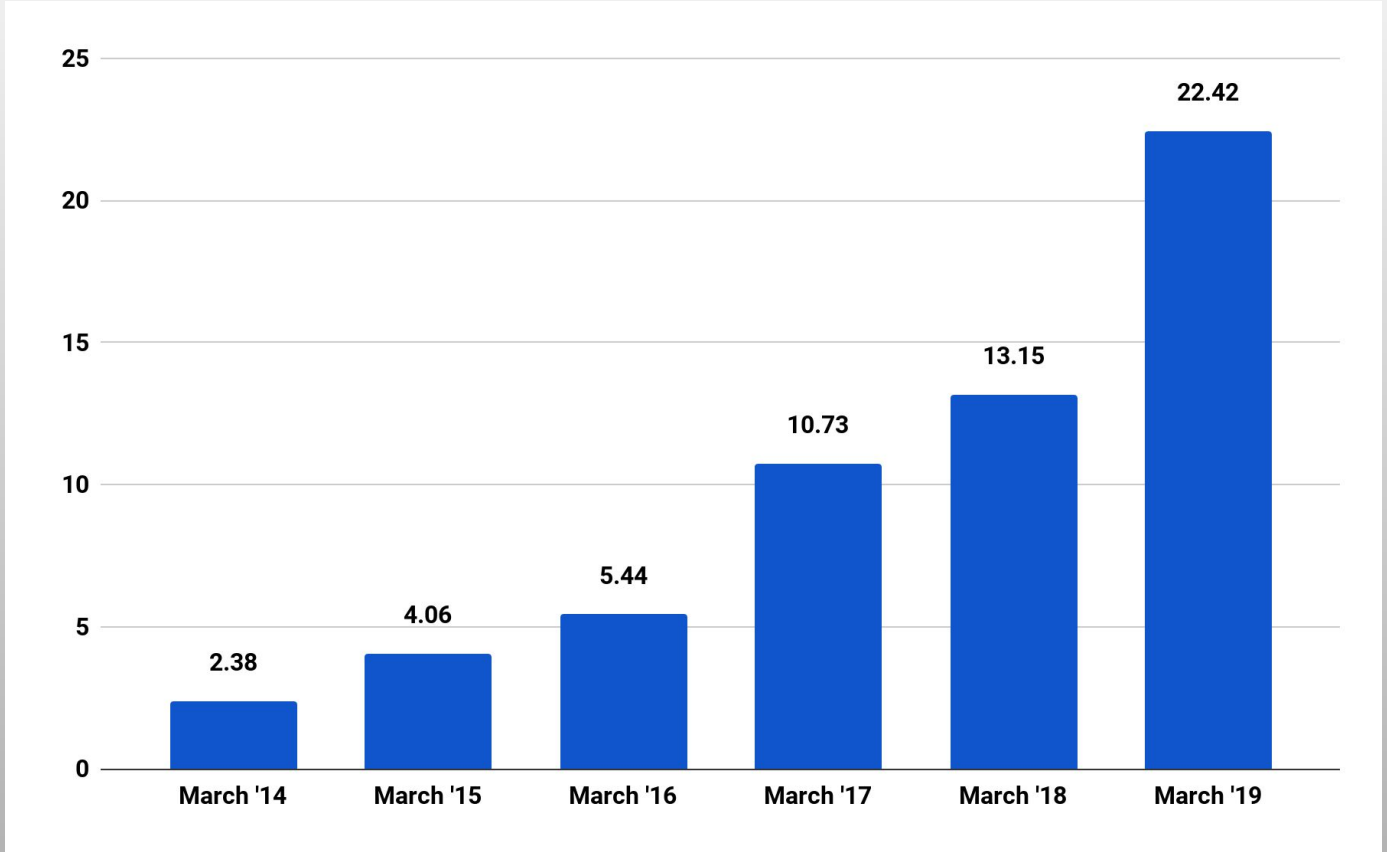


Digital transactions, per capita per annum

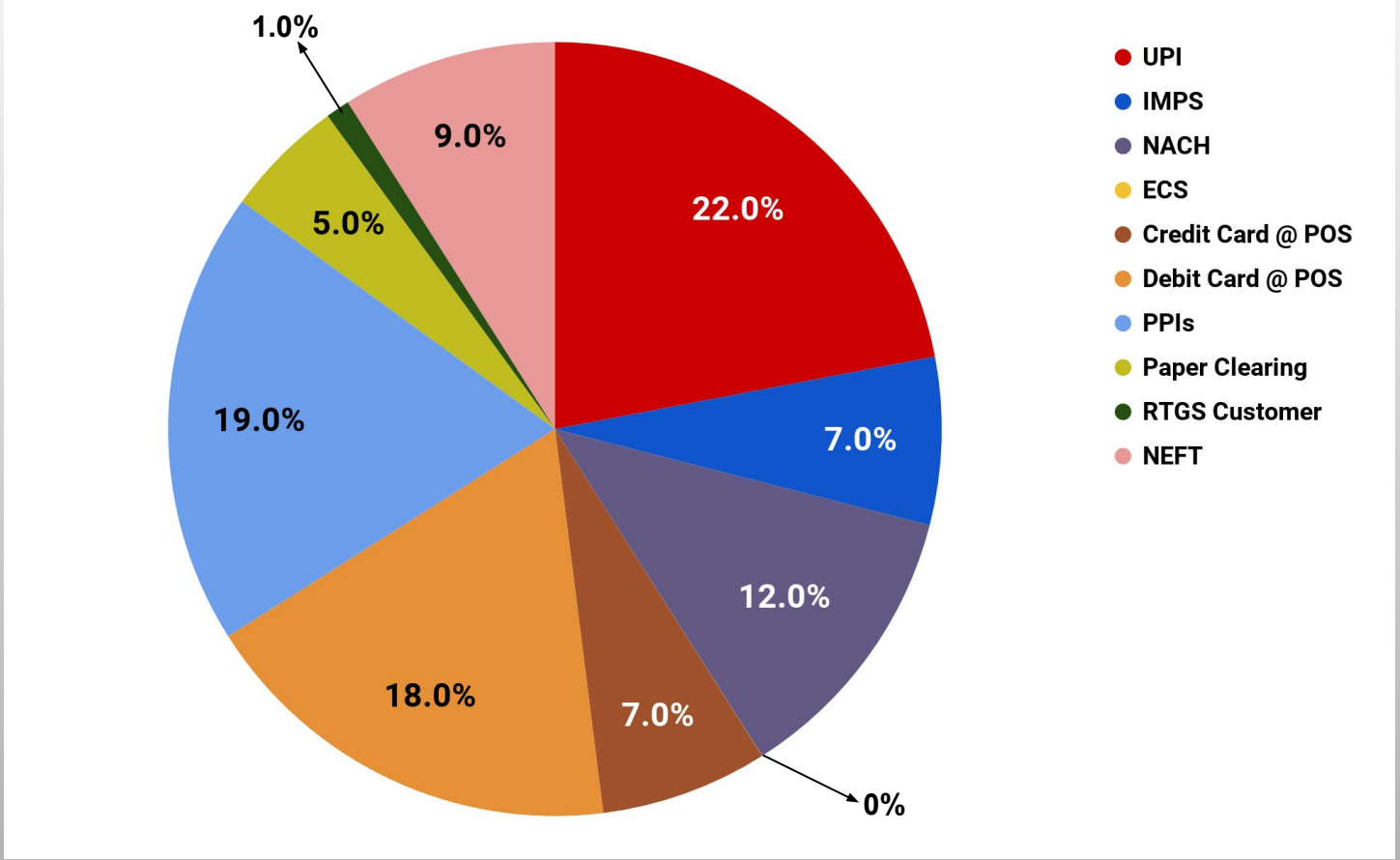
country / year	2015	2016	2017
China	48.9	70.4	96.7
Russia	99.5	132.8	178.5
Brazil	137.6	139.4	148.5
South Africa	68.7	78.0	79.2

India: digital payments per capita

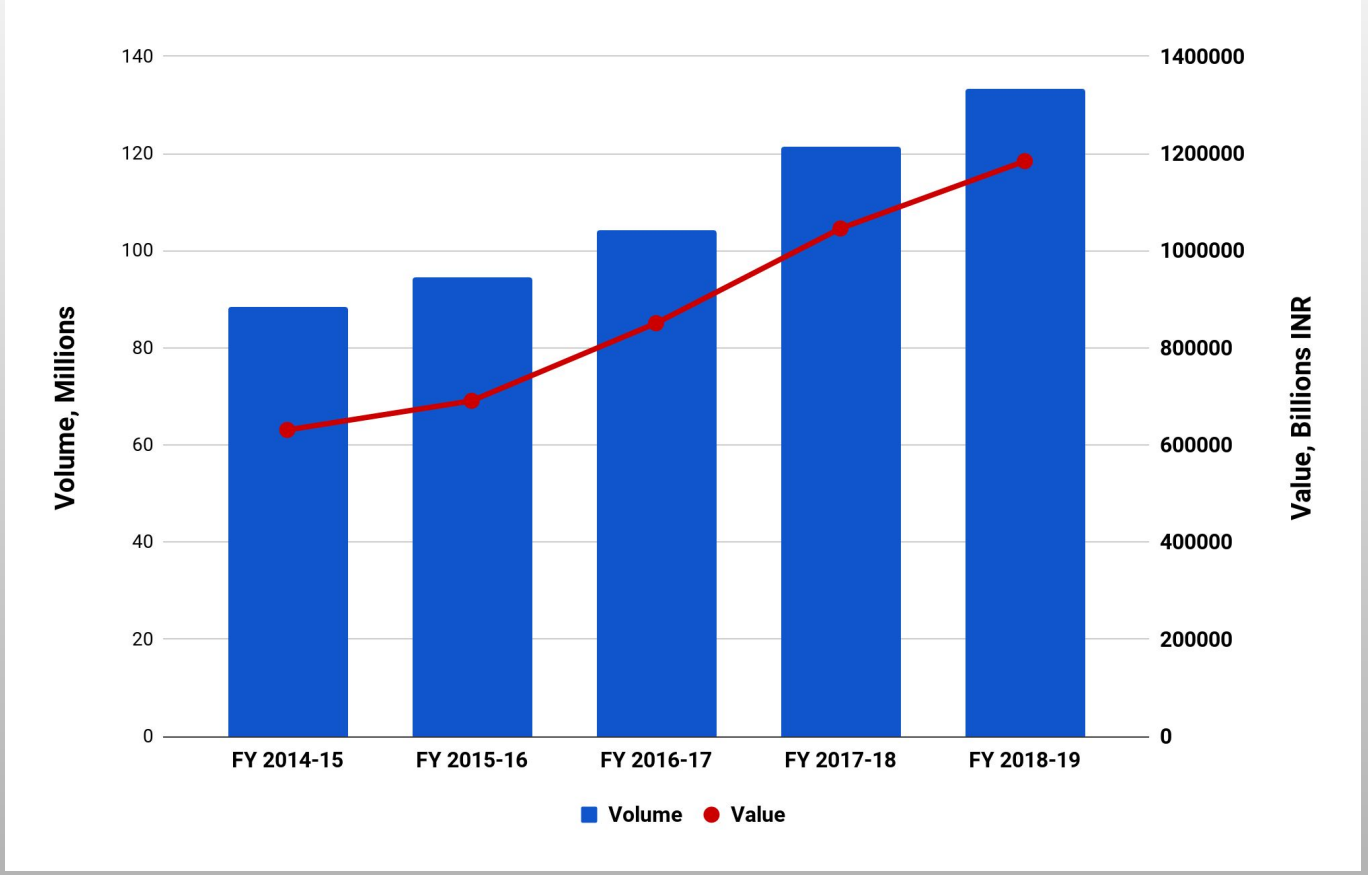
10x increase in the last 5 years



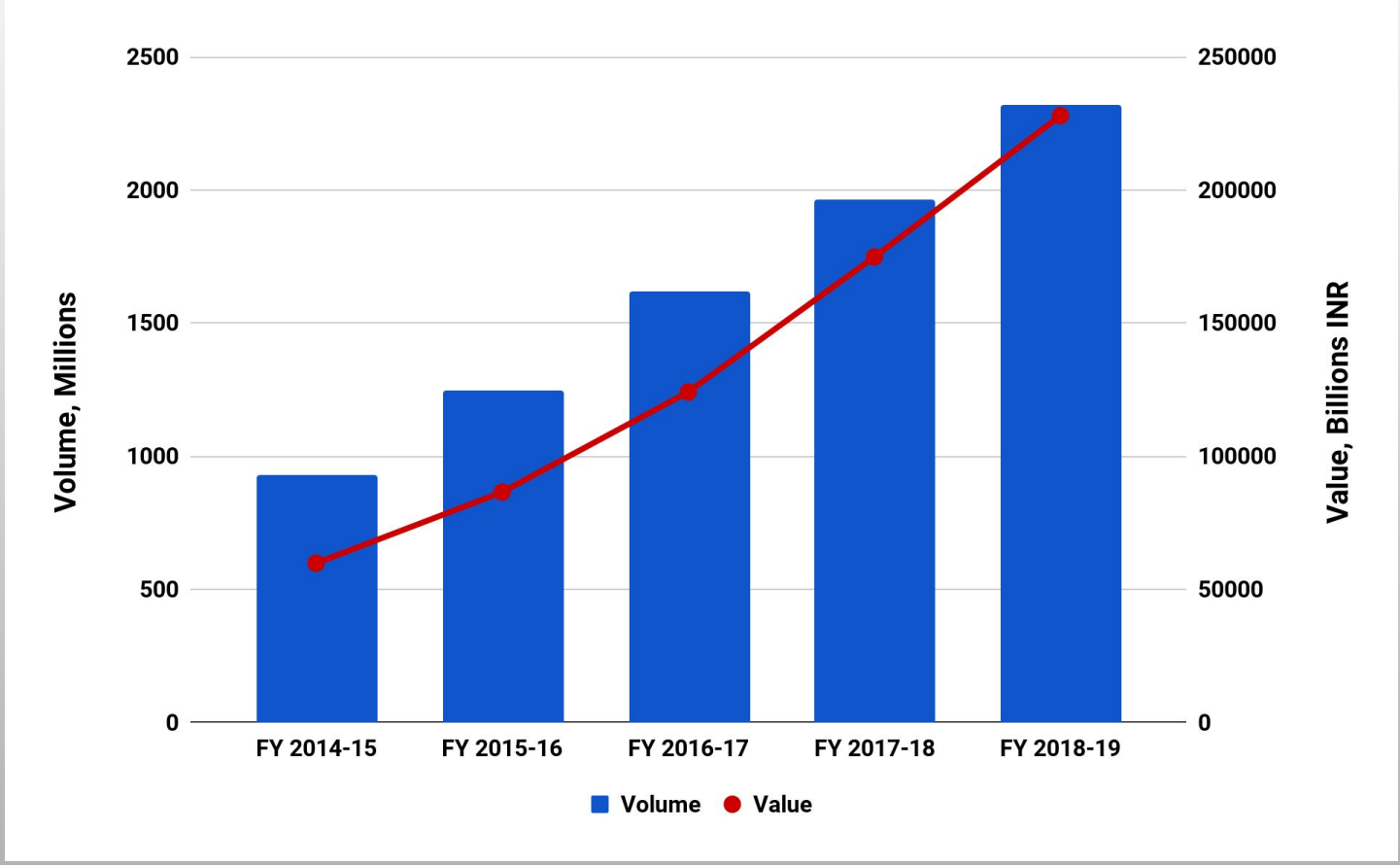
Payment systems FY 2018-19 (volume %)



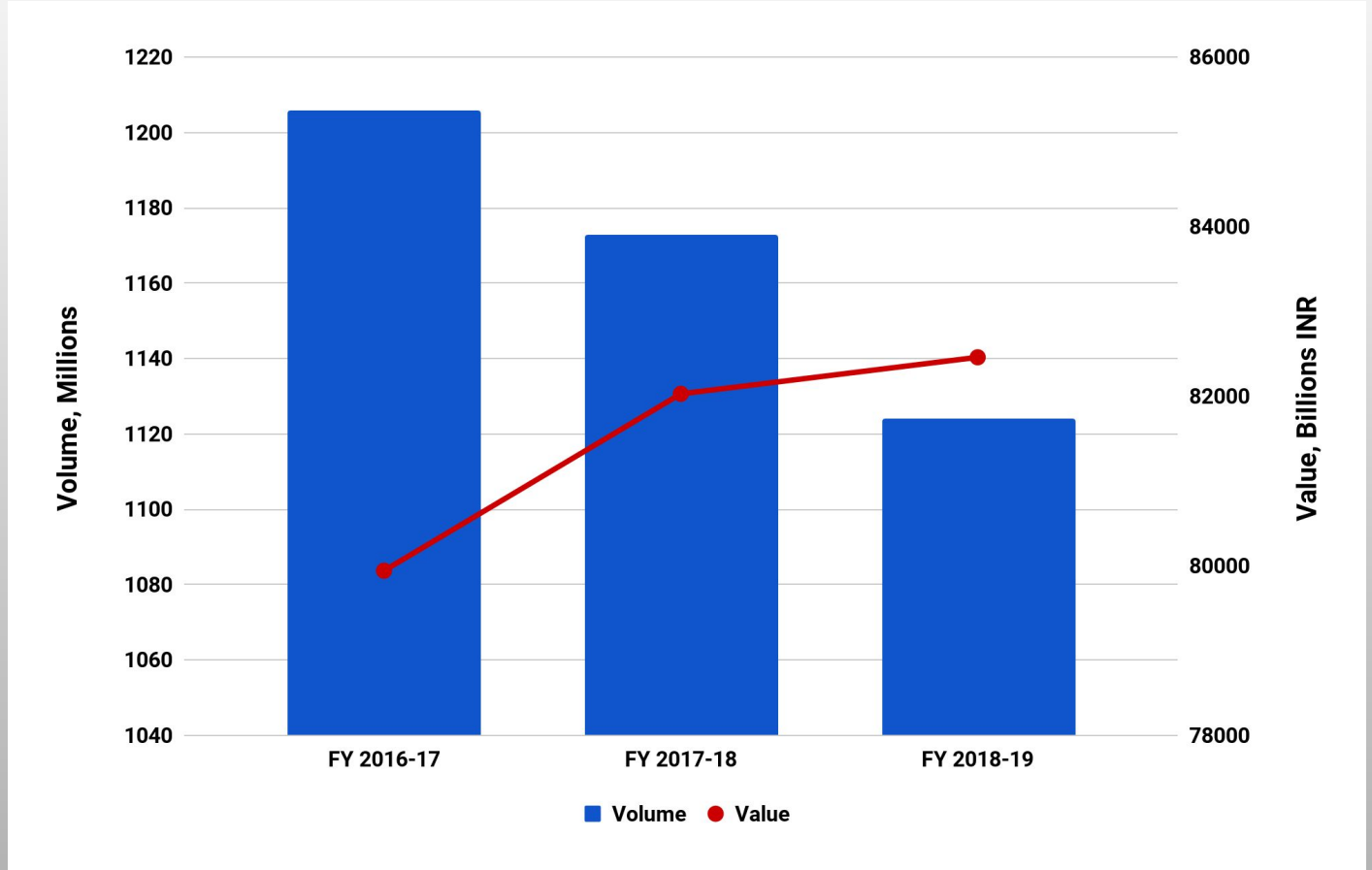
RTGS (volume & value)



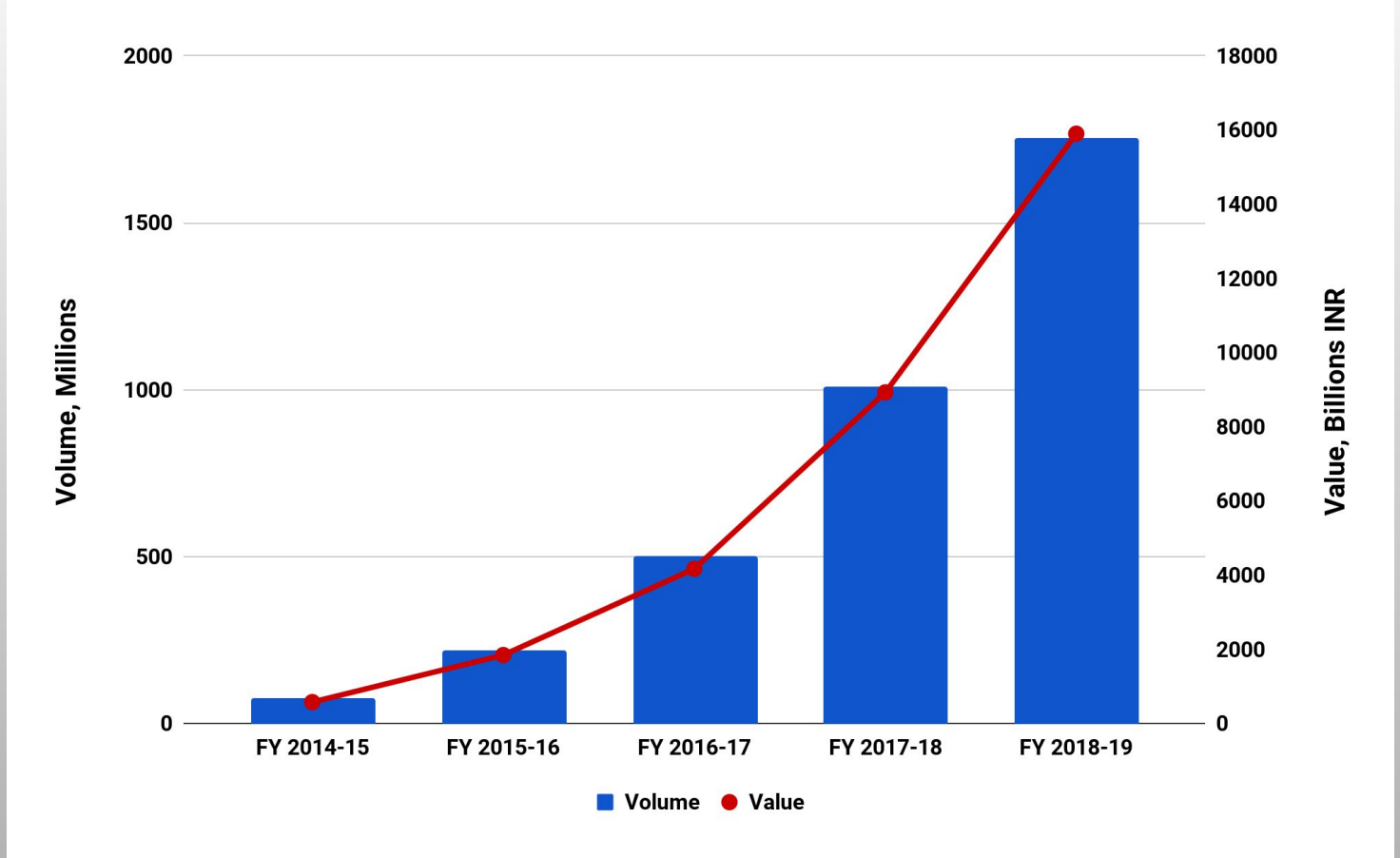
NEFT (volume & value)



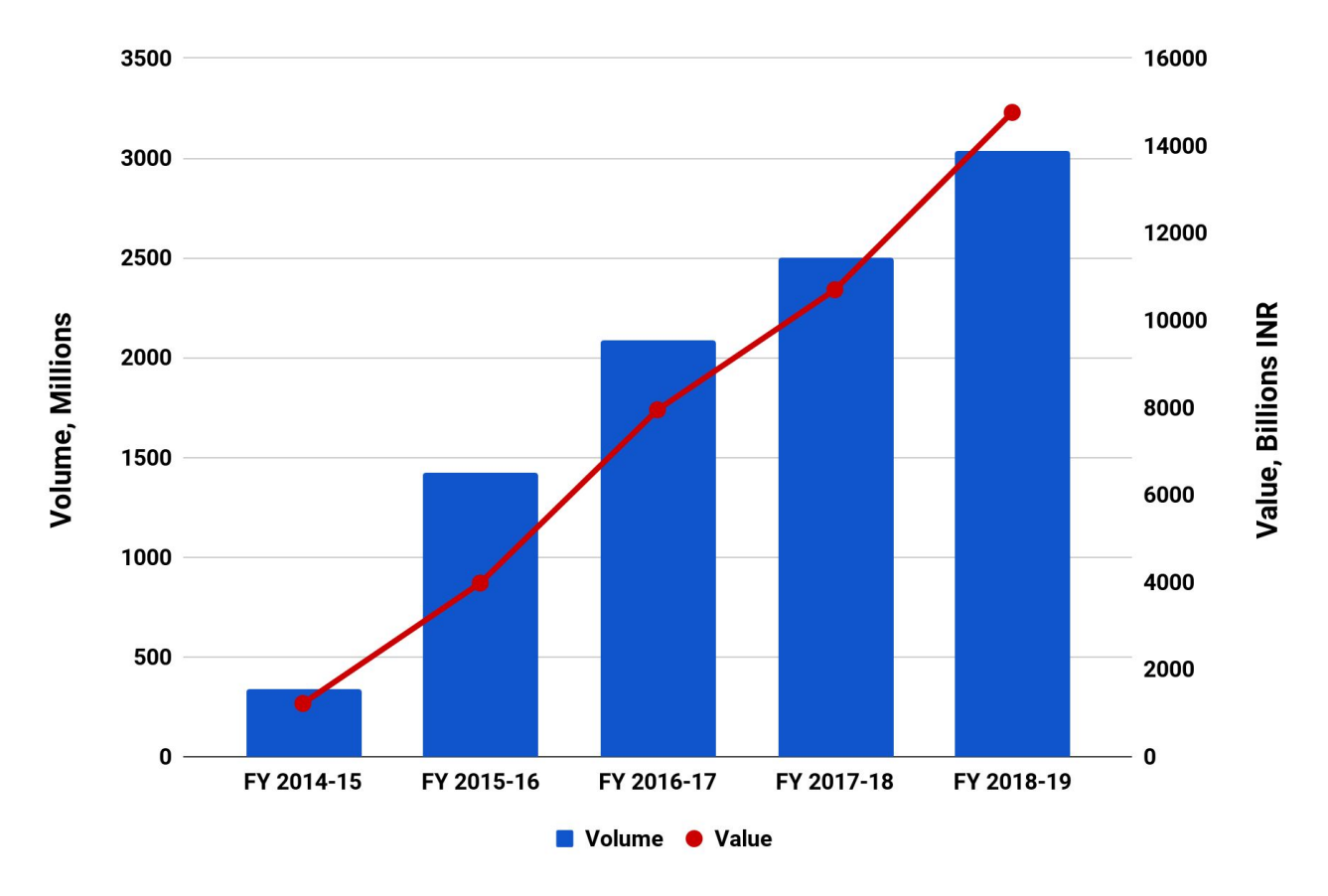
Cheques (volume & value)



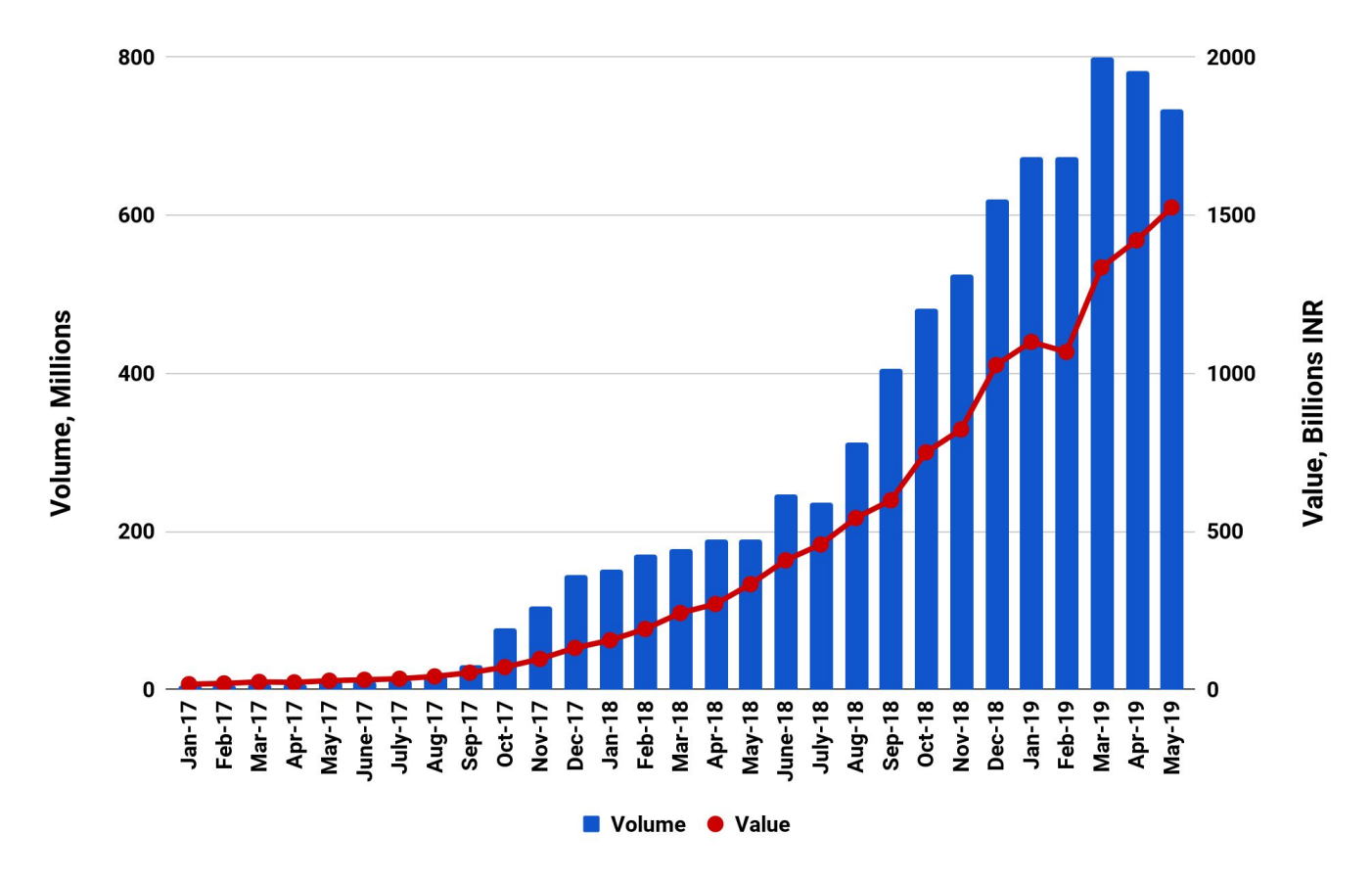
IMPS (volume & value)



NACH (volume & value)



UPI (volume & value)



NUUP 2.0 *99#

year / volume-value	Volume, millions	Value, billions inr
Fy 2016-17	0.77	1.09
Fy 2017-18	2.21	3.58
Fy 2018-19	1.51	2.67

India: smartphone & mobile internet users

Smartphones

- September 2018, 375 million
- 16% YoY growth 2018: highest in the world

Mobile internet

- December 2018, 390 million
- In 2023, this figure is projected to reach 500 million

Banking anywhere, but never at the bank !

Loans

Investments

Insurance

Customer Facing

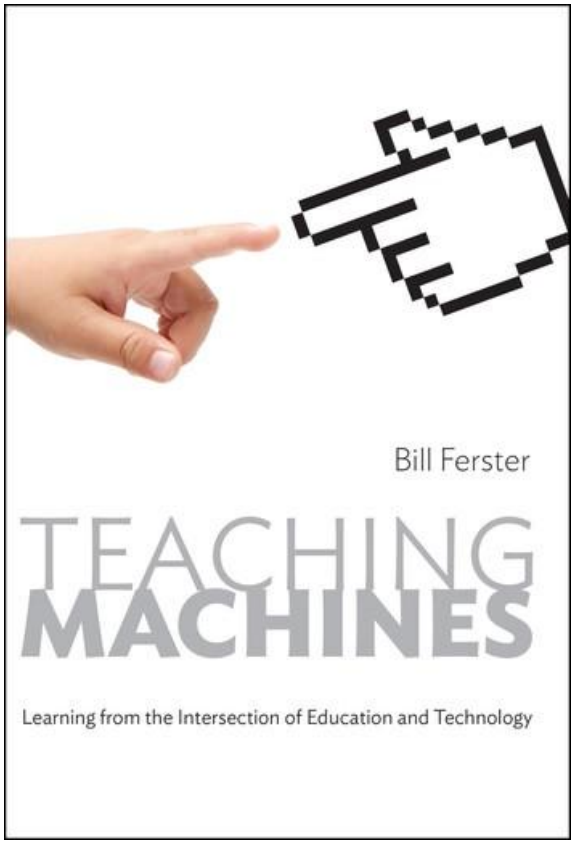
Finance 4.0

Mass Customization at Scale!

Automated Process

Cyber Security

EdTech in the world of data science & AI ?



UDACITY

coursera

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AI stack

Data	Text	Voice	Computer Vision	Numeric
Emerging	Tech & Ethics	NLP & Ethics		
Perspectives	AI for everyone	Modelling		
Modelling	Statistical Modelling	Machine Learning	Artificial Intelligence	
Tools	R: programming	R: visualisation	Python: programming	Python: visualisation
Methods	Algorithms	Probability & Statistics	Linear Algebra	Optimization