



“Wherever there is Risk,  
there are opportunities for Actuaries”

South Africa is the only country where Actuaries  
can specialise in Banking

# Banks in the Digital Age

- Digitisation changes traditional market structures and creates new hybrid business models
- Unbundling and democratisation of finance
- New disruptive competitors enter the market
- Banks enable third party apps and become marketplaces for all transactional needs
- Advent of big data & regulatory changes

# Actuaries play a key role

- Advanced data analytics and better insights so banks can make quick decisions and take action.
- Anticipation of new business risks.
- Identification of opportunities and new strategic directions.
- As Banks start to look more like technology companies, Actuaries need to become technologists too.

# The Digital Disruption has already happened

- World's largest taxi company owns no taxis ([Uber](#))
- Largest accommodation provider owns no real estate ([Airbnb](#))
- Largest phone companies own no telco infra ([Skype & WeChat](#))
- World's most valuable retailer has no inventory ([Alibaba](#))
- Most popular media owner creates none of its own content ([Facebook](#))
- World's largest movie house owns no cinemas ([Netflix](#))
- Largest software vendors don't write the apps ([Apple & Google](#))

# Framework of Exponentials: Diamandis' 6 Ds

- Digitised
- Deceptive
- Disruptive
- Dematerialise
- Demonetise
- Democratisise



# The Exponential Growth of Data

5 Exabytes = 5 Billion Gigabytes  
From the start of time ~ 2003

In 2010 ~ 2 days

In 2013 ~ 10 minutes

Today ~ 2 minutes



# Why digitised information growth is exponential

- Zero friction to move/copy
- Zero marginal cost
- Apply computation
- Data correlations
- Machine learning
- Modeling
- Simulations

**100% democratisation of effort/innovation**





Several products have been **Dematerialised**  
into one device

(TV, flash light, alarm clock, camera, books,  
CD's)

**Demonetised**

Abundance of products & services available

**FREE** online

3D printing is in a Deceptive growth phase



# Democratisation

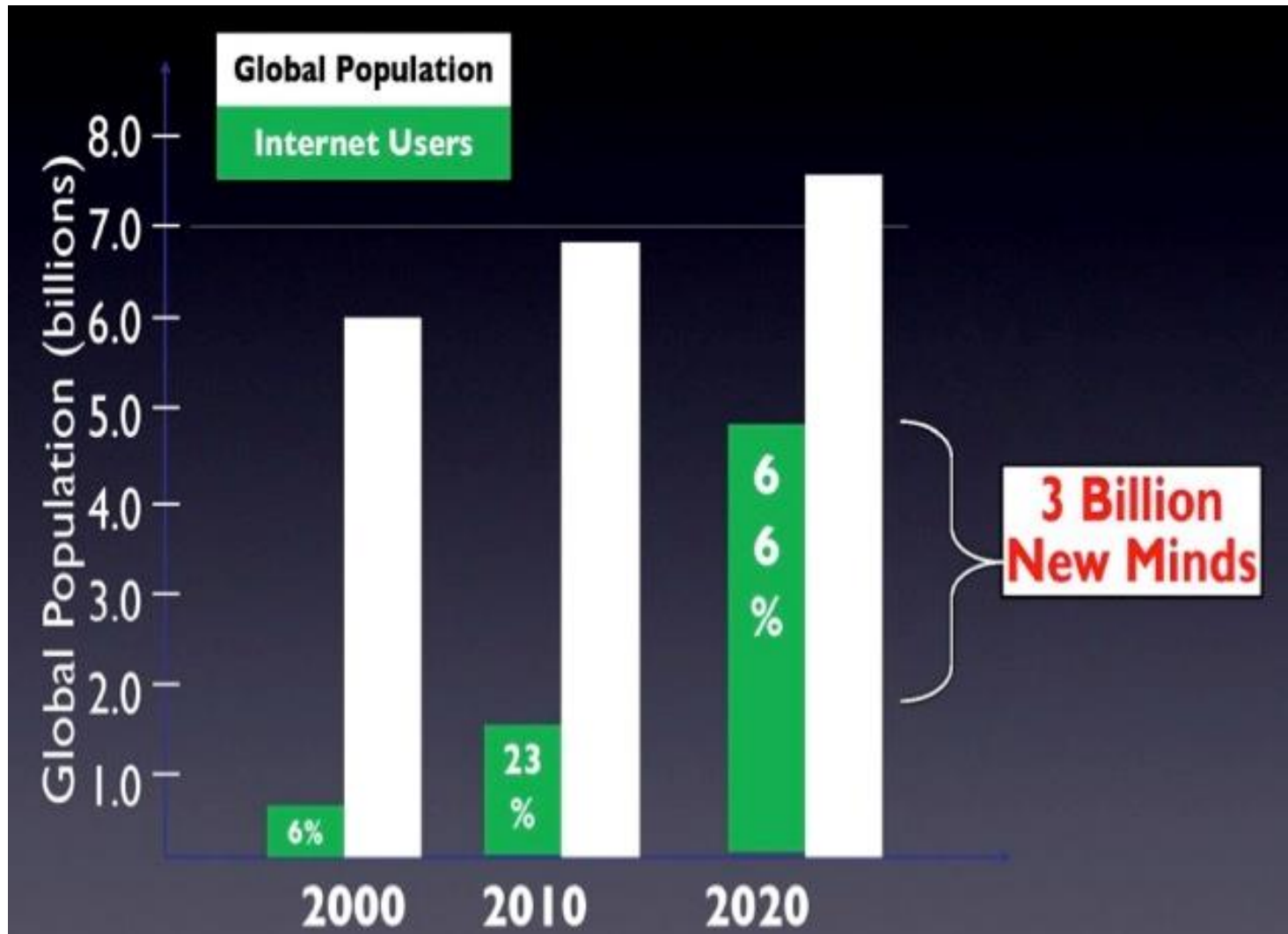
When a technology spreads across the world

Predicted there will be a billion handsets in  
Africa this year



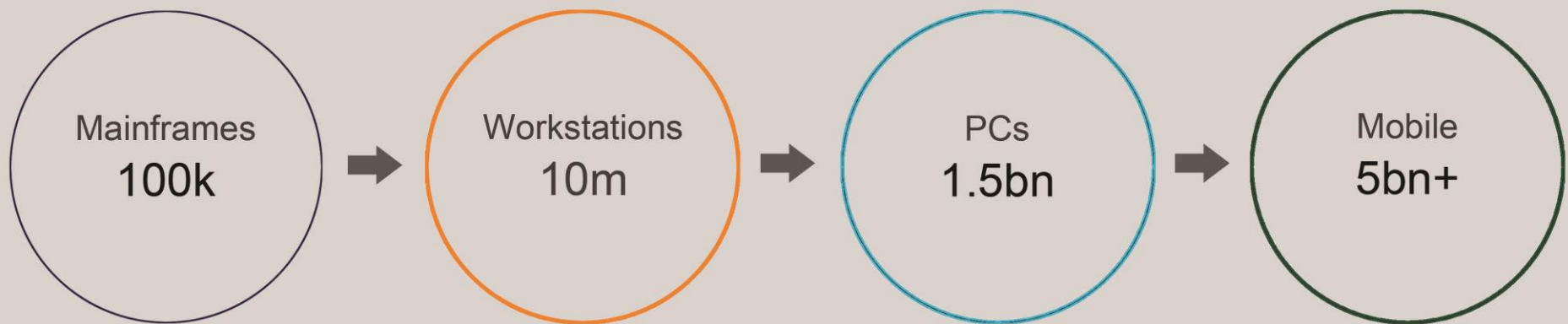


# Force: Rising Billion



# Mobile is the new tech ecosystem

Tech moves forward by going from one ecosystem to the next, and each new ecosystem is a change in scale. Mobile has the scale of everyone on earth.



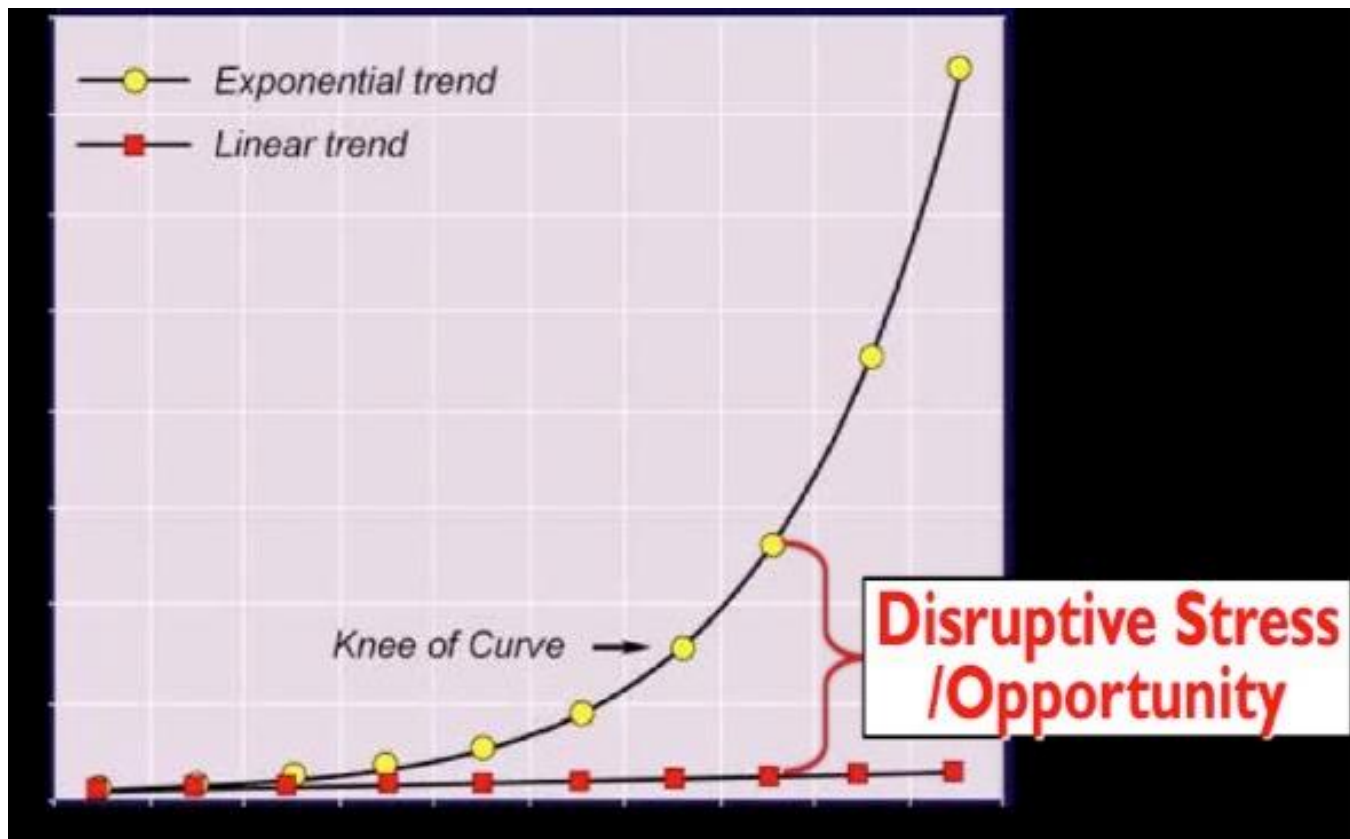
Andreessen Horowitz

“Right now, a Masai warrior using Google on a smart phone in the middle of Kenya has access to more information than the U.S. president did just 15 years ago”

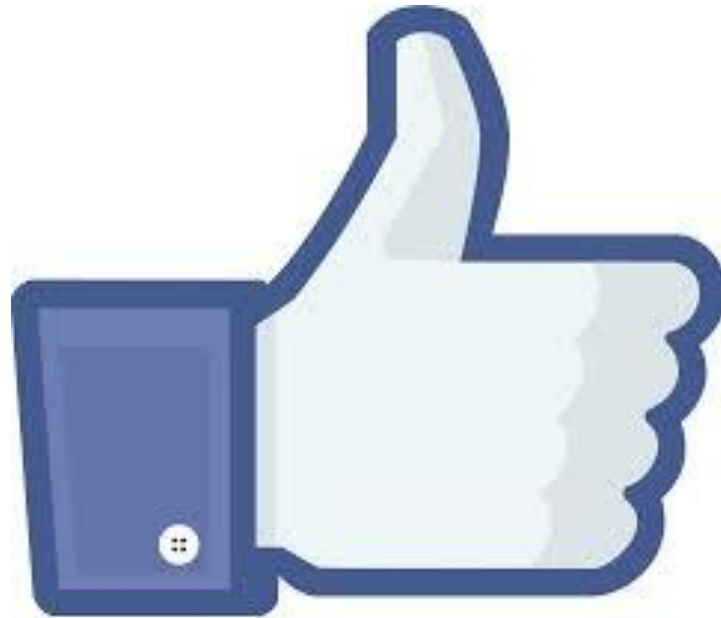




# Artificial Intelligence (AI), Robotics, 3D Printing, Synthetic Biology, Media Tech, Nanotech, Solar, Networks & Sensors

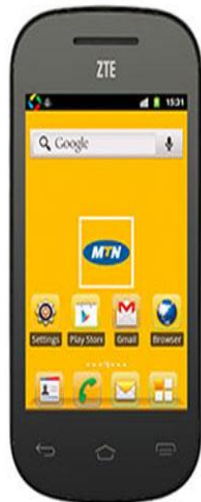


# Finance is OK?





# Smartphones for under R600

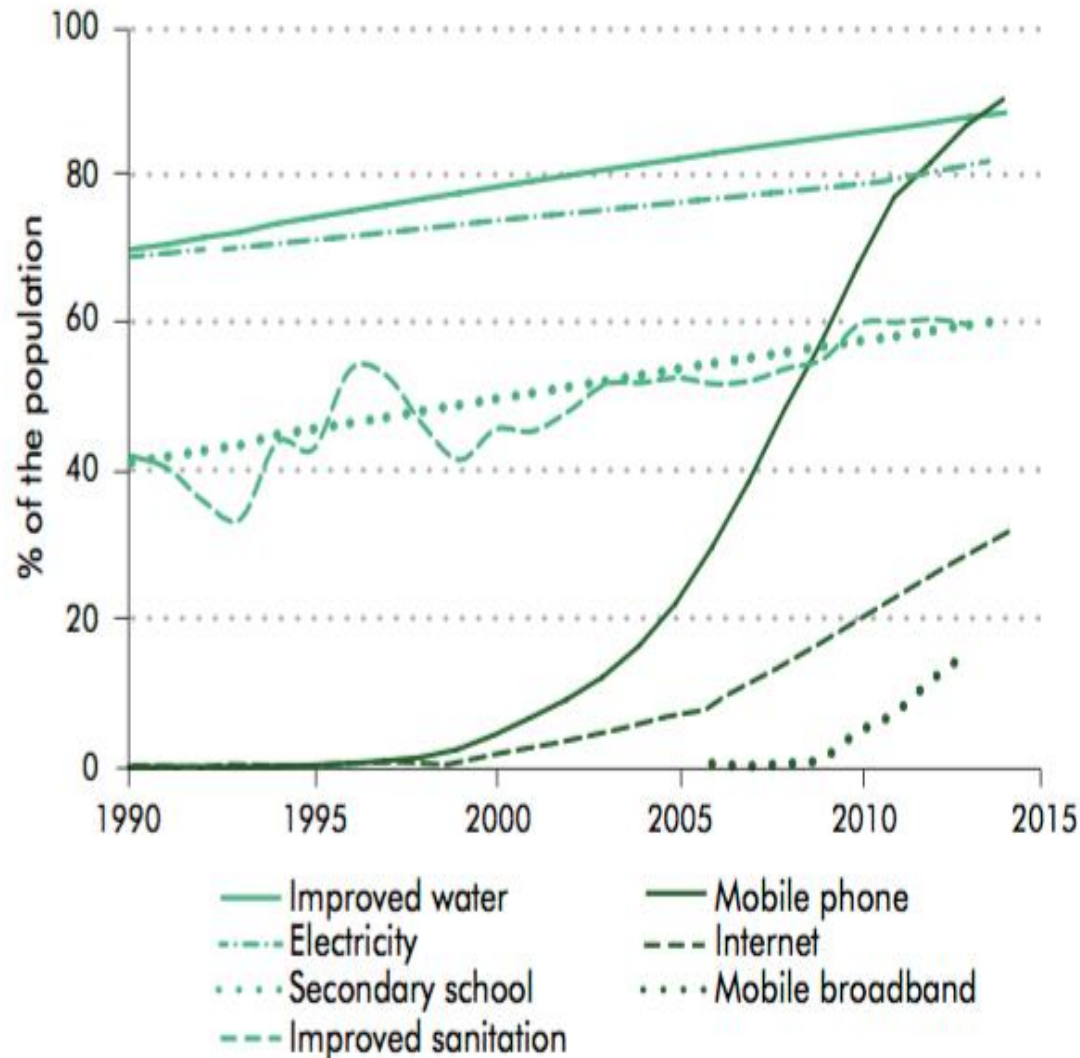






**Half a billion  
Smartphones  
will be sold  
in Africa  
by end 2020**

In developing countries more households own a mobile phone than have access to electricity or sanitation





CHARLIE BROOKER'S

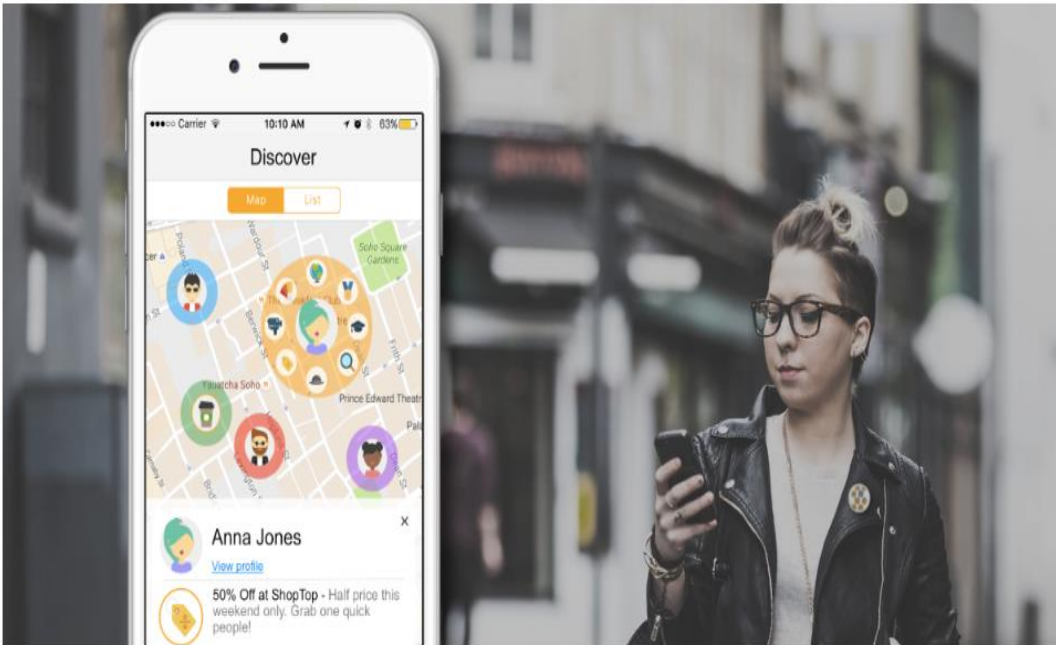
# BLACK MIRROR



A bank in 2020 will store, monetise & license a customers' data  
You can deposit data like money. Lend, spend, invest and earn interest from your data

secco AURA PRESS INVESTORS

Money doesn't make the world go round - You Do



aura



Do you share your make-up tips with mates? Taught a co-worker to code? Fund-raised and proudly wear the t-shirt? It feels good right! It's rewarding. It's valuable. You're valuable.

A world where your worth is the contents of your character, not the contents of your wallet



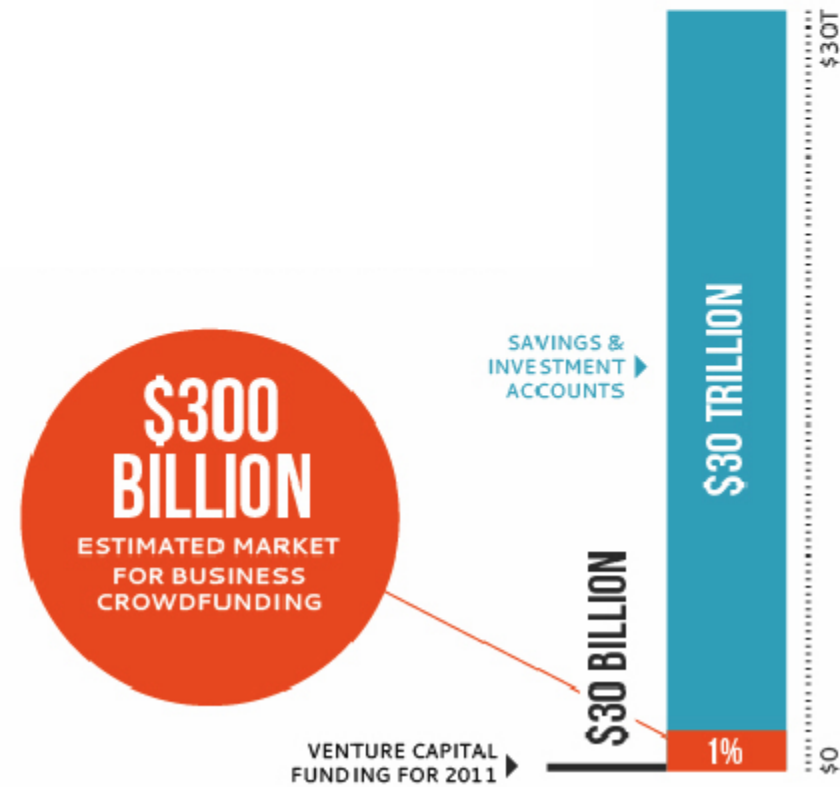
# Revolution In Finance

Economy +  
Social +  
Technology +  
Legislation =  

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Unique Time

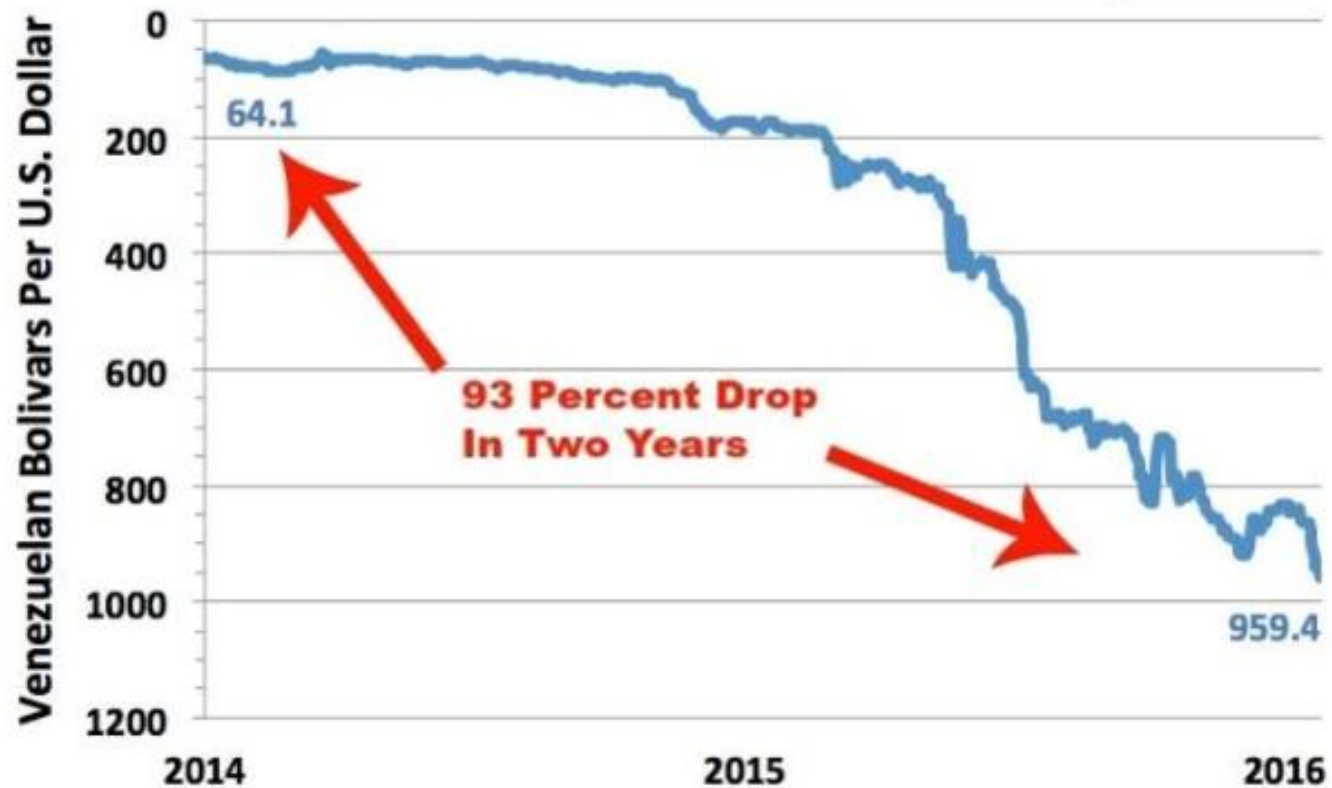
## MARKET FOR BUSINESS CROWDFUNDING



Prediction: By 2025 **virtual currencies**  
will compete with national currencies



## Venezuela's Death Of A Currency



Source: dolartoday.com



# Strict State Control Over Currency Turning Venezuelans to Bitcoin





# Complex Communication

INVESTING | 4/19/2012 @ 1:08PM | 11,876 views

## Forbes Earnings Preview: Apple

By [Narrative Science](#)

[+ Comment now](#)

Analysts have become increasingly bullish on [Apple \(AAPL\)](#) in the month leading up to the company's second quarter earnings announcement scheduled for Tuesday, April 24, 2012. The consensus earnings per share estimate has moved up from \$9.60 a share to the current expectation of earnings of \$9.86 a share.

**What to Expect:**

8

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49

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Confirmation  
Bias

Optimism  
Bias

Loss  
Aversion

Self-  
Serving  
Bias

The  
Planning  
Fallacy

Choice  
Paralysis

Herding

Prefer  
Stories  
to  
Analysis

Recency  
Bias

The Bias  
Blind-Spot

10 Most Common behavioral Biases



A top-down view of a wooden desk. In the upper left is a white cup of black coffee. Below it is a white Samsung smartphone. To the left of the phone is a dark red pen. At the bottom left are two white sticky notes. In the top right corner, there are green leaves and red berries. A large white rectangular area on the right side of the desk contains the text.

## Benefits of Algo Investing

Cost

Discipline

Repeatability

Academia / Open Source

Dealing Rooms / Hedge Funds

Thank you  
@michaeljordan