Artificial Intelligence in Human Resources

IPM, Colombo Annual Conference

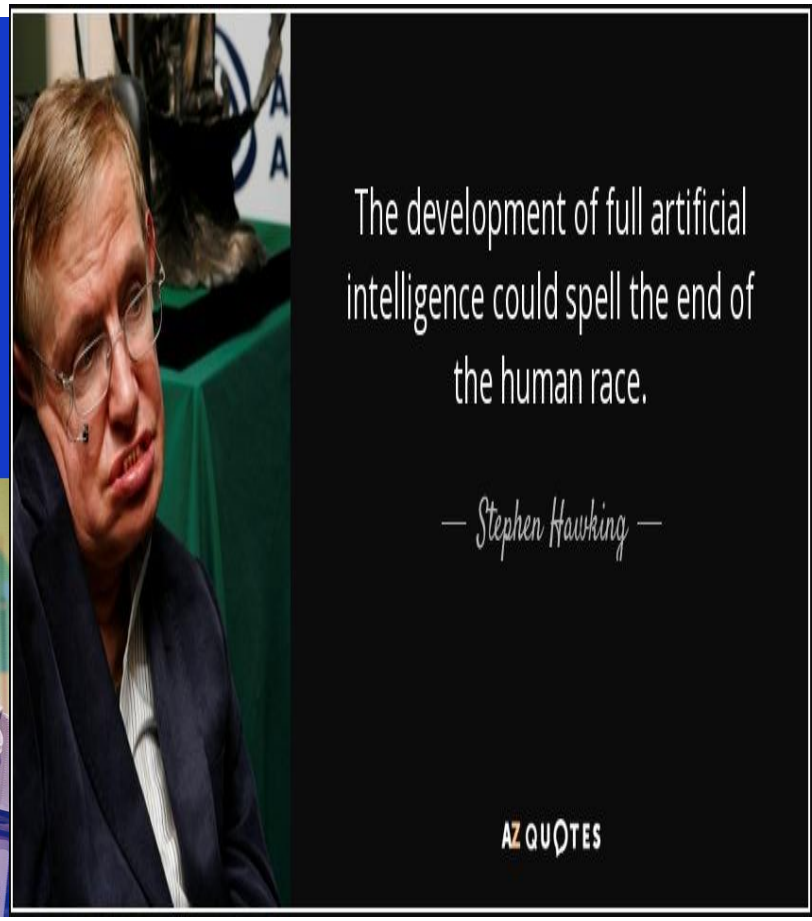
ආයුබෝවන්!
AYUBOWAN!
ஆயுபோவன!
Sri Lanka

Ceci n'est pas une pipe.

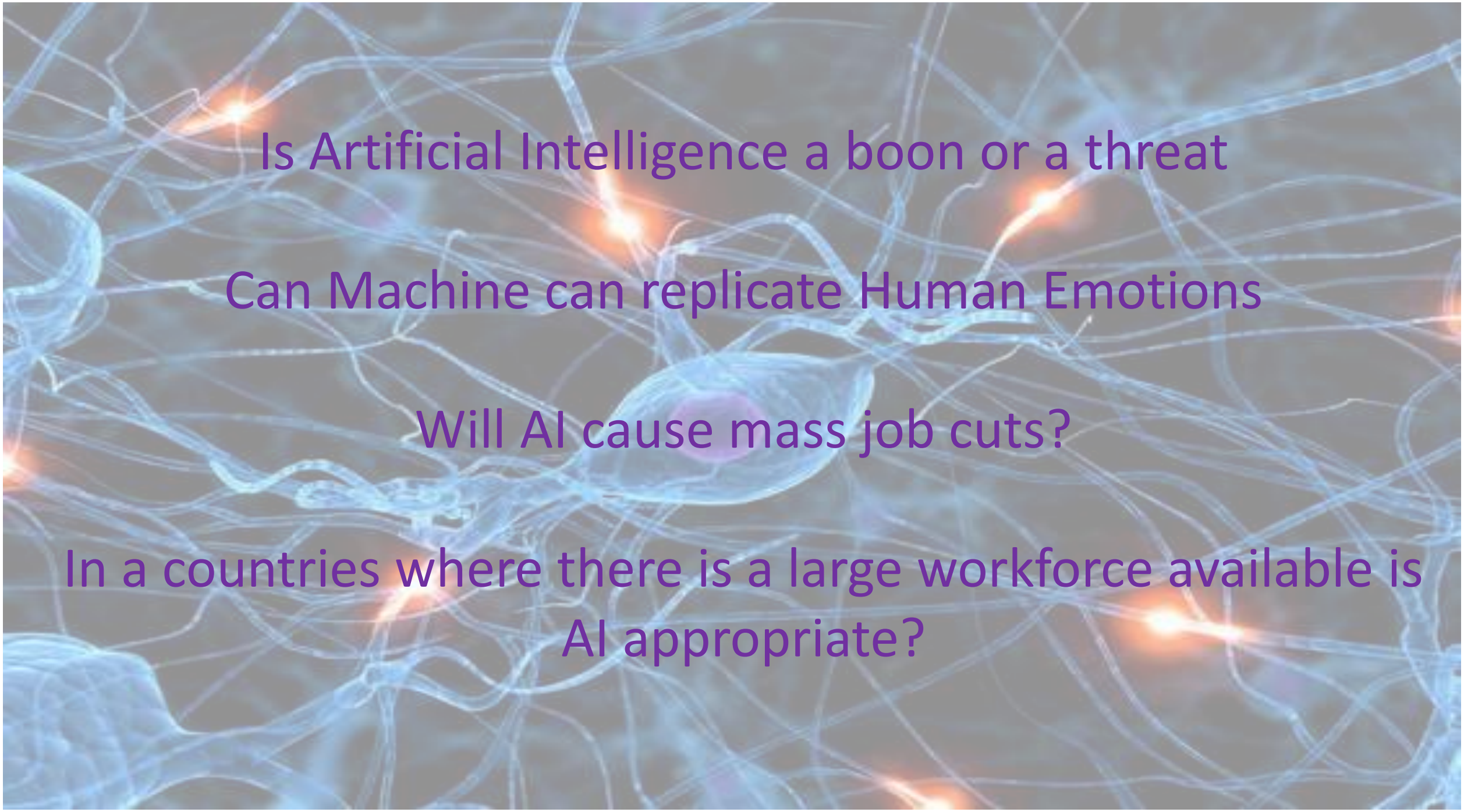
Not quite

- **Digital transformation is about Technology**
  - Not quite!
  - Digital transformation is about '***people, process and customer'***. It is about connecting '***Value creation point***' to '***Value consuming point***' in most effective and efficient way.
- **Fourth industrial revolution is about Technology and Business**
  - Not quite
  - 4th IR is about society and humans.

Some thoughts on AI

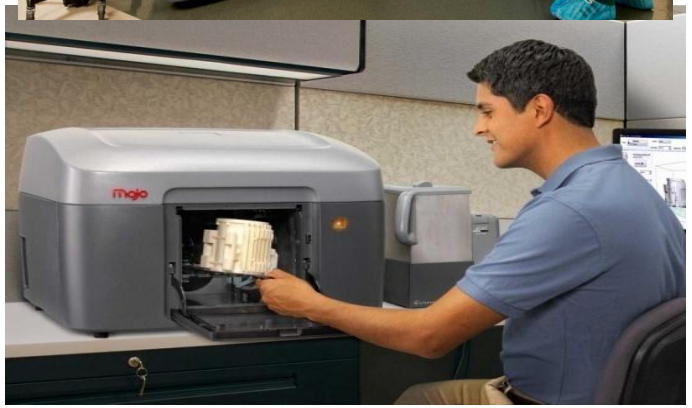


Why? AI – Opportunity or Threat?


Is Artificial Intelligence a boon or a threat
Can Machine can replicate Human Emotions
Will AI cause mass job cuts?
In a countries where there is a large workforce available is AI appropriate?

Context

amazon



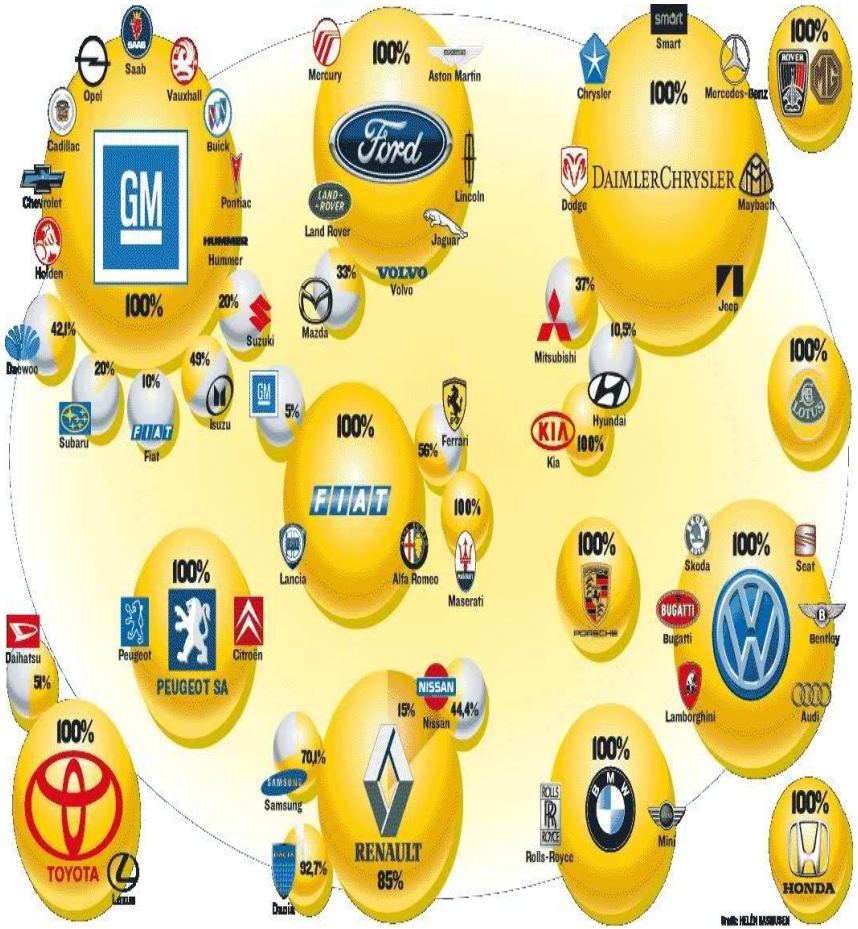
Impact of Technology

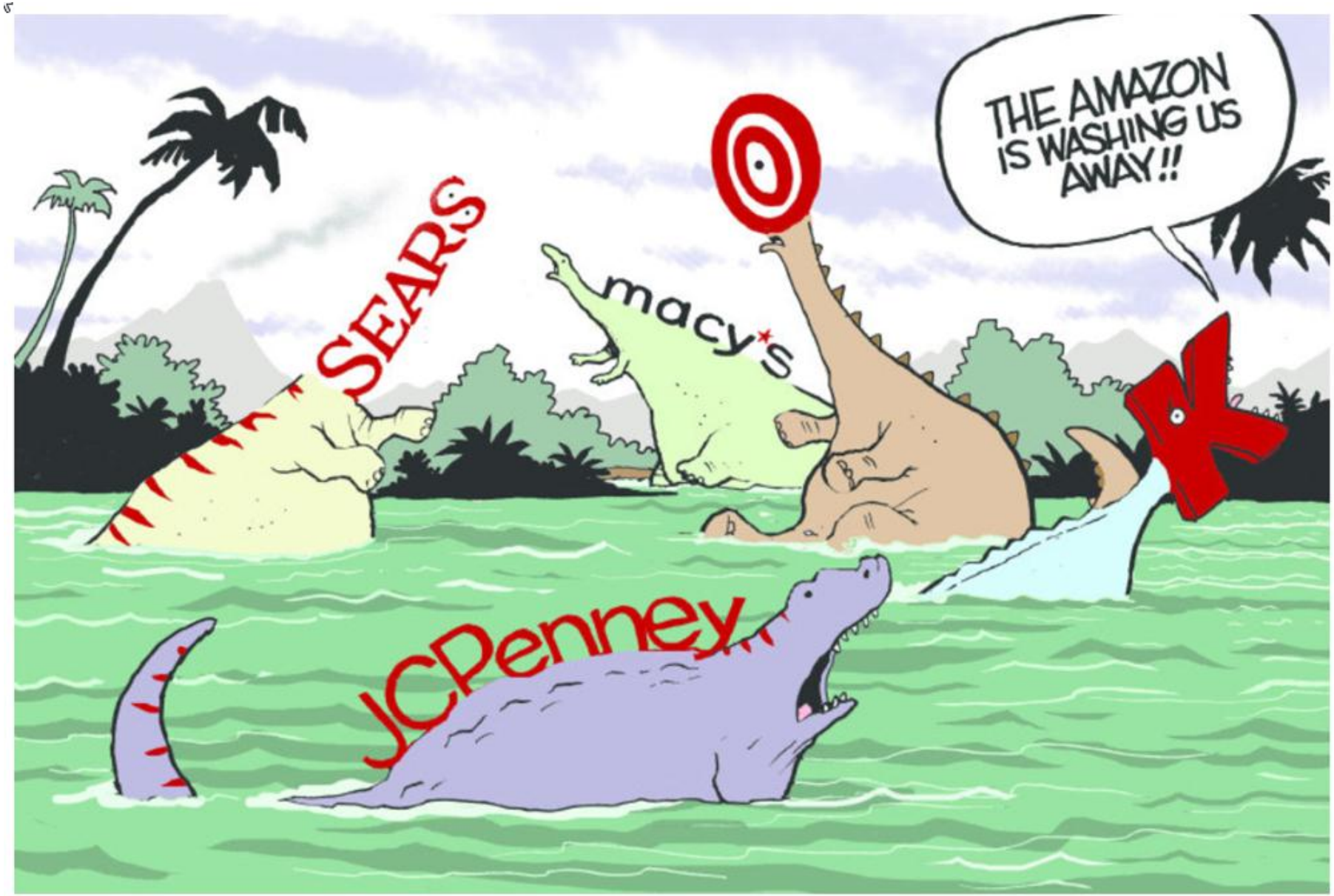
- Death of classic models
- “Trend” is not our friend
- Welcome to “Ms Algorithm”
- Data rich, information poor, insight starve

It is an iron rule in history that what looks inevitable and for granted in hindsight; was from obvious at that time

Yuval Harari

Death of Classic Models - Car Companies



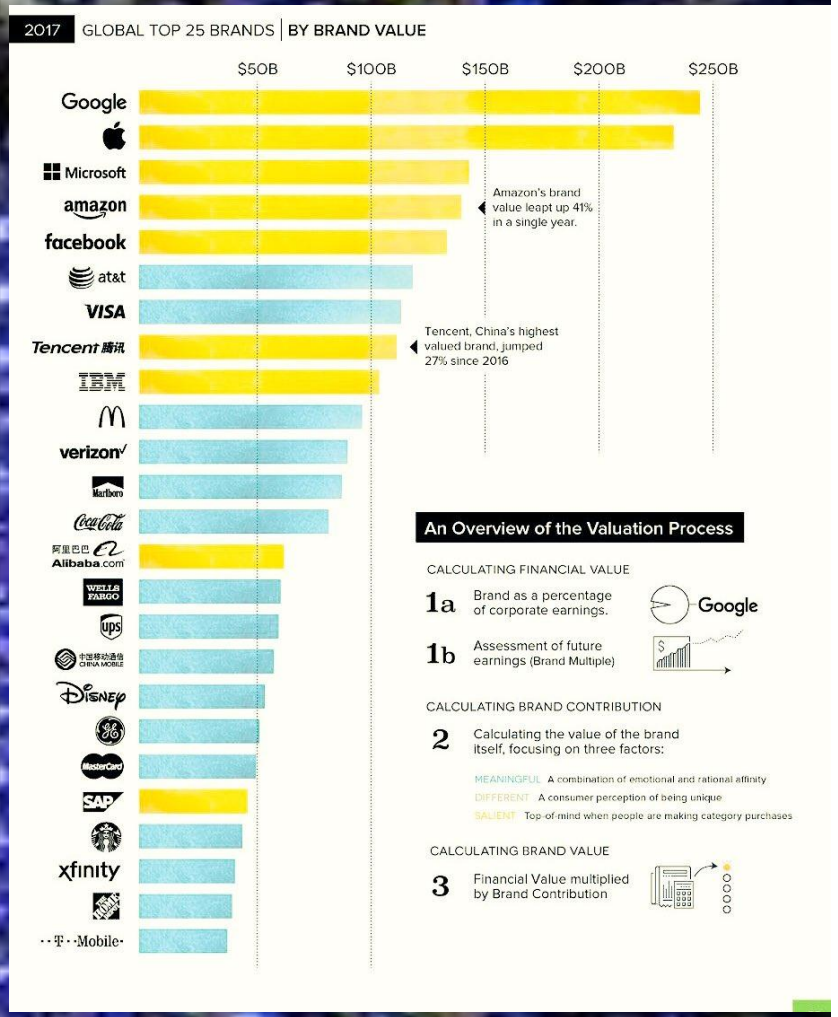

THE AMAZON IS WASHING US AWAY!!
SEARS
macy's
JCPenney

Death of Classic Models

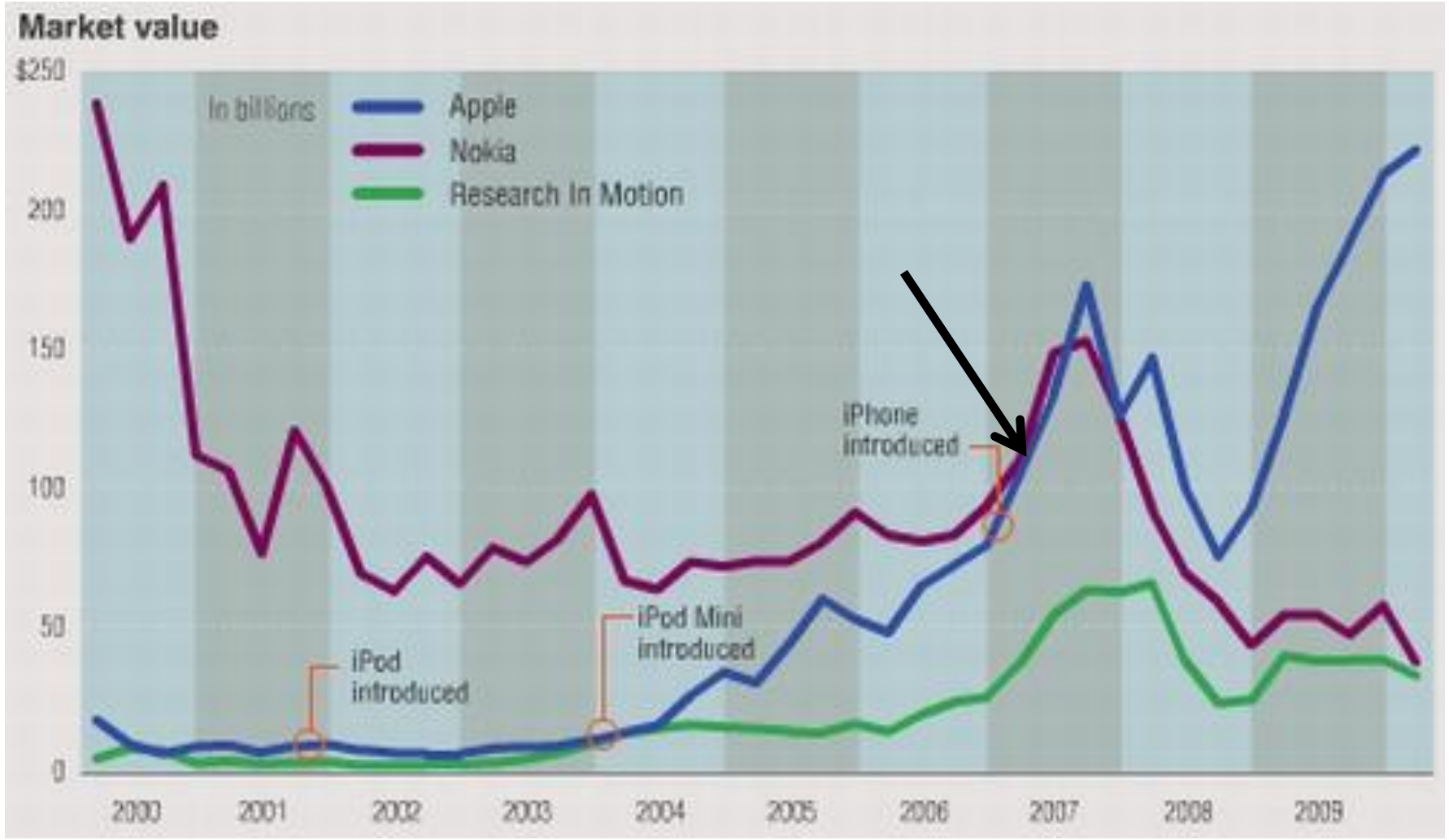
Something fundamental is changing

FIRM	FOUNDED	EMPLOYEES	MKT CAP
BMW	1916	125,000	$60B
UBER	2009	11,000	$48B
MARRIOTT	1927	227,000	$51B
AIRBNB	2008	5,000	$31B
WALT DISNEY	1923	195,000	$167B
FACEBOOK	2004	21,000	$512B
WALMART	1962	2,300,000	$298B
ALIBABA	1999	50,000	$469B

Adapted from Parker & Van Alstyne, with Choudary, 2016, updated January 2018

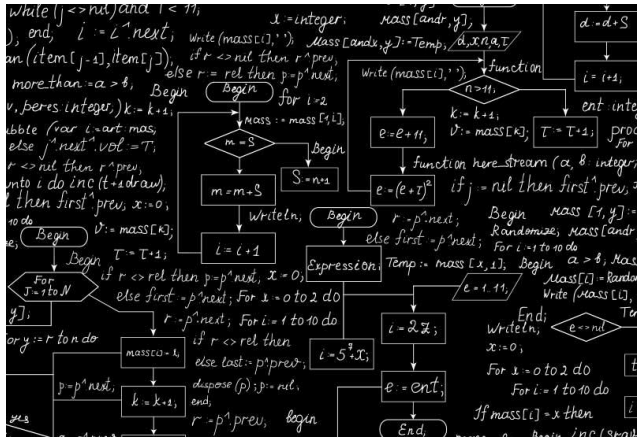


Trends is not our Friend - Nokia and Apple



What Next?

Welcome “Ms Algorithm”



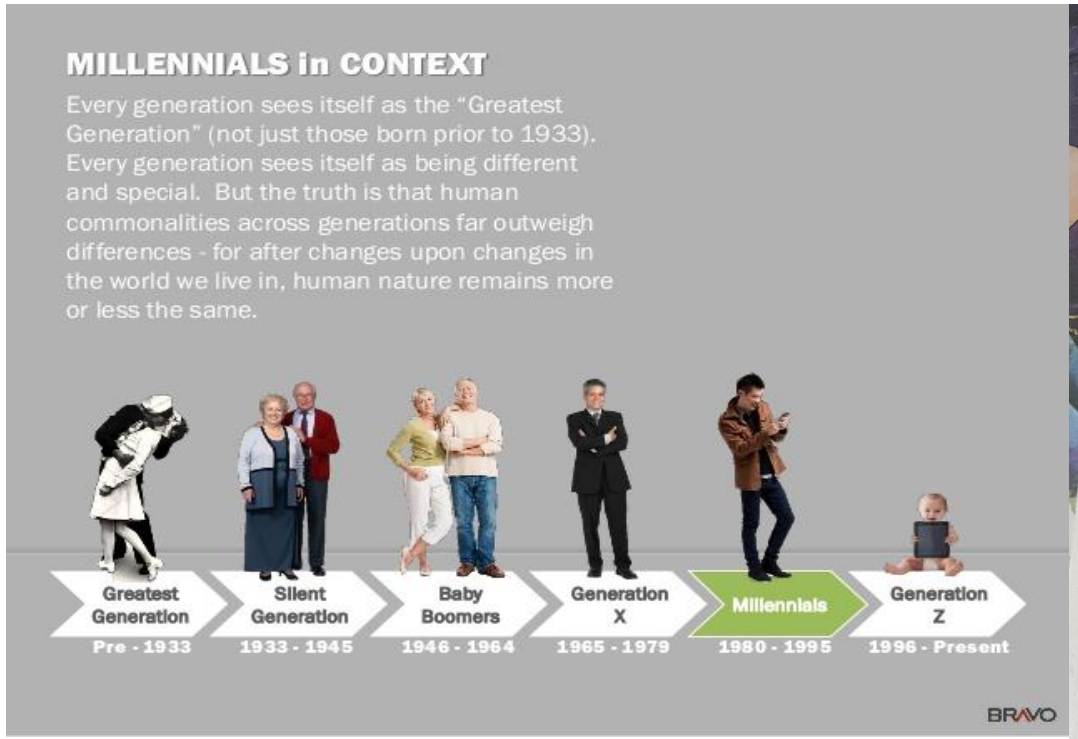
Data Never Sleeps

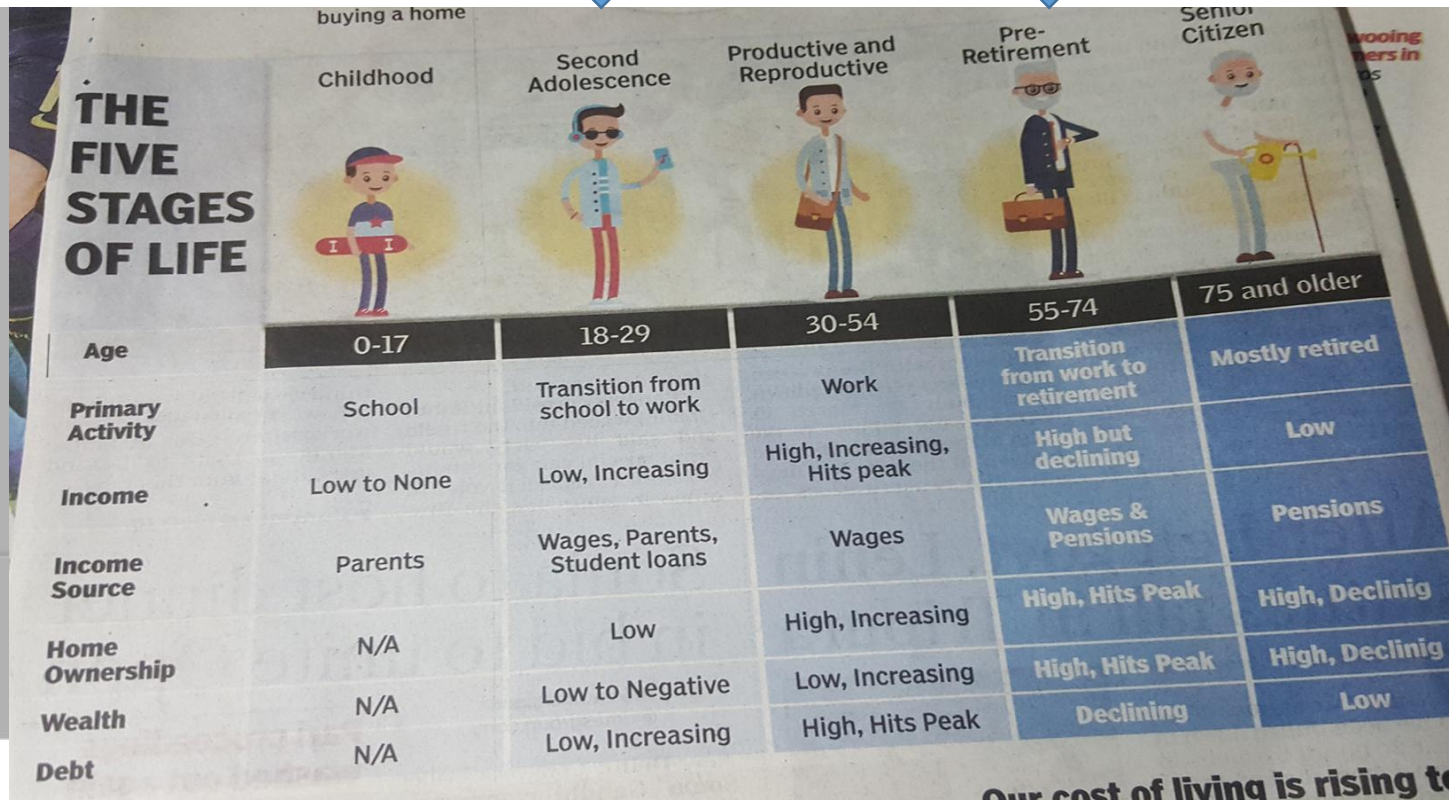
- If Data is the new Oil, Are Humans the richest oil fields?
- Data Rich, Information Poor, Insight starved

Context - Technology

Context - Technology

Context - Demographics





Millenials and Gen Z

Context

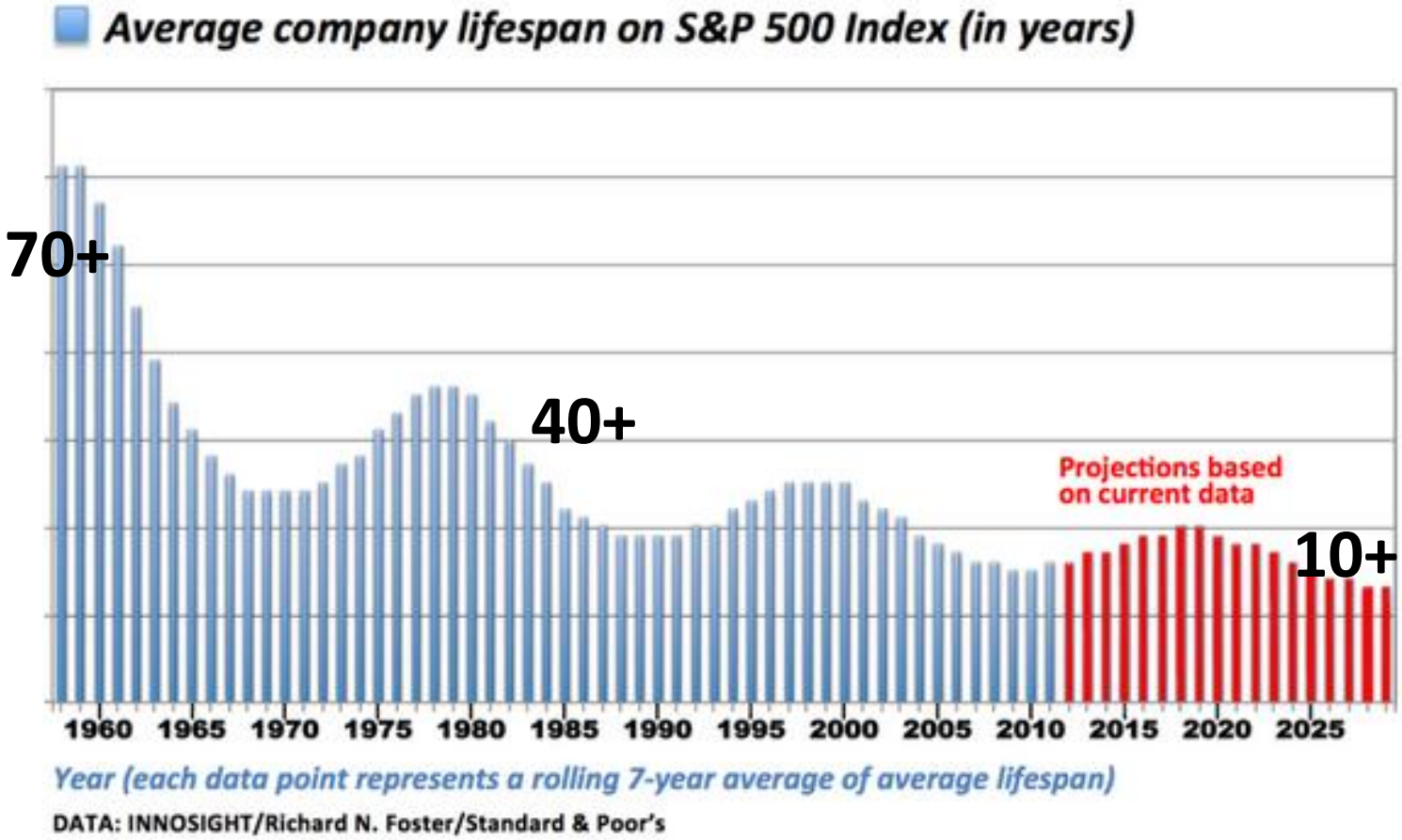
Global - DeGlobal

Technology

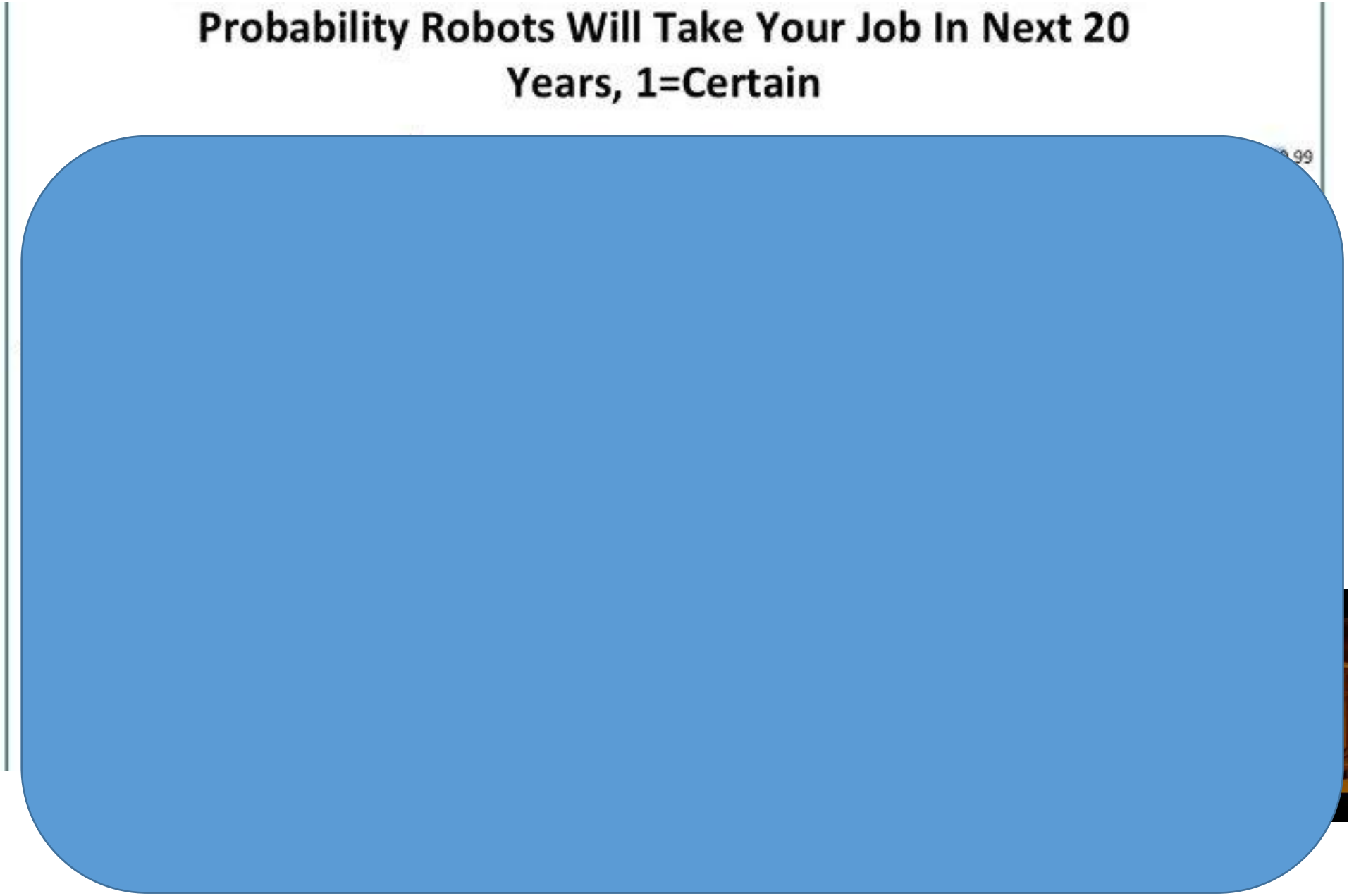
Demography

Expectations from Society

Effect 1: Average Age of Companies



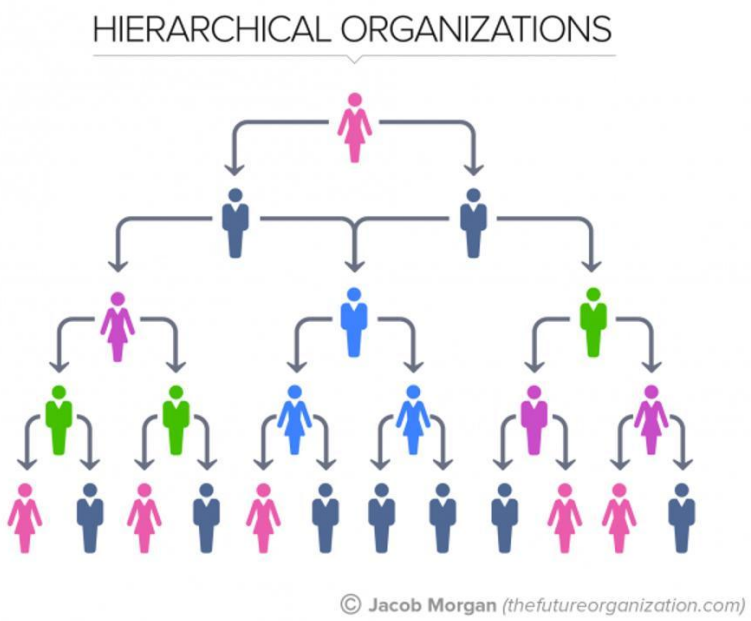
Effect 2: Jobs



Effect 3: Future of Work (a)

Department, Functions

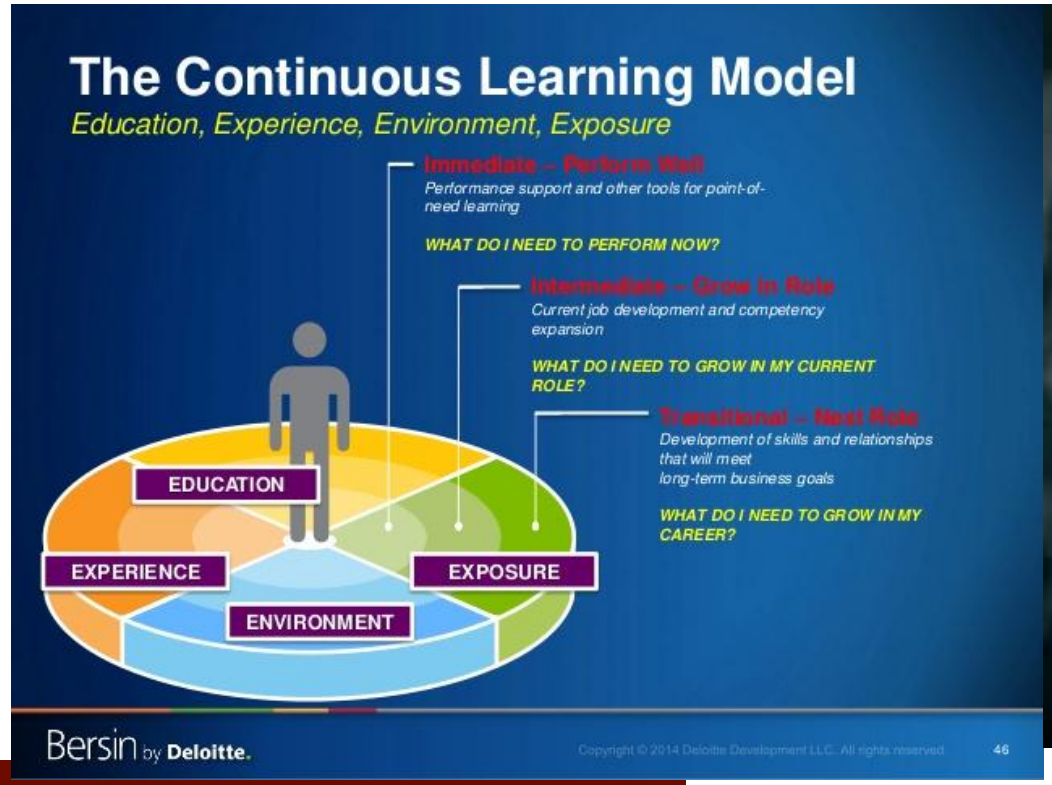
‘We Working’ and Capability Ecosystems

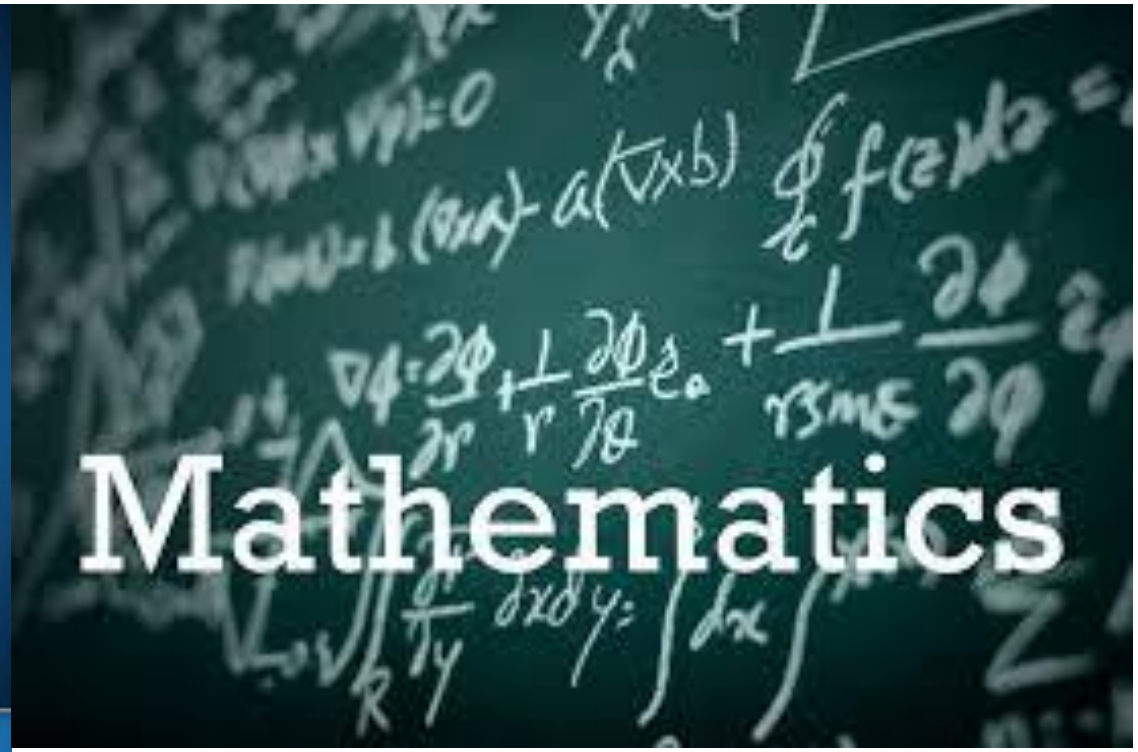


Effect 3: Future of Work (b)

Education, Training and Job

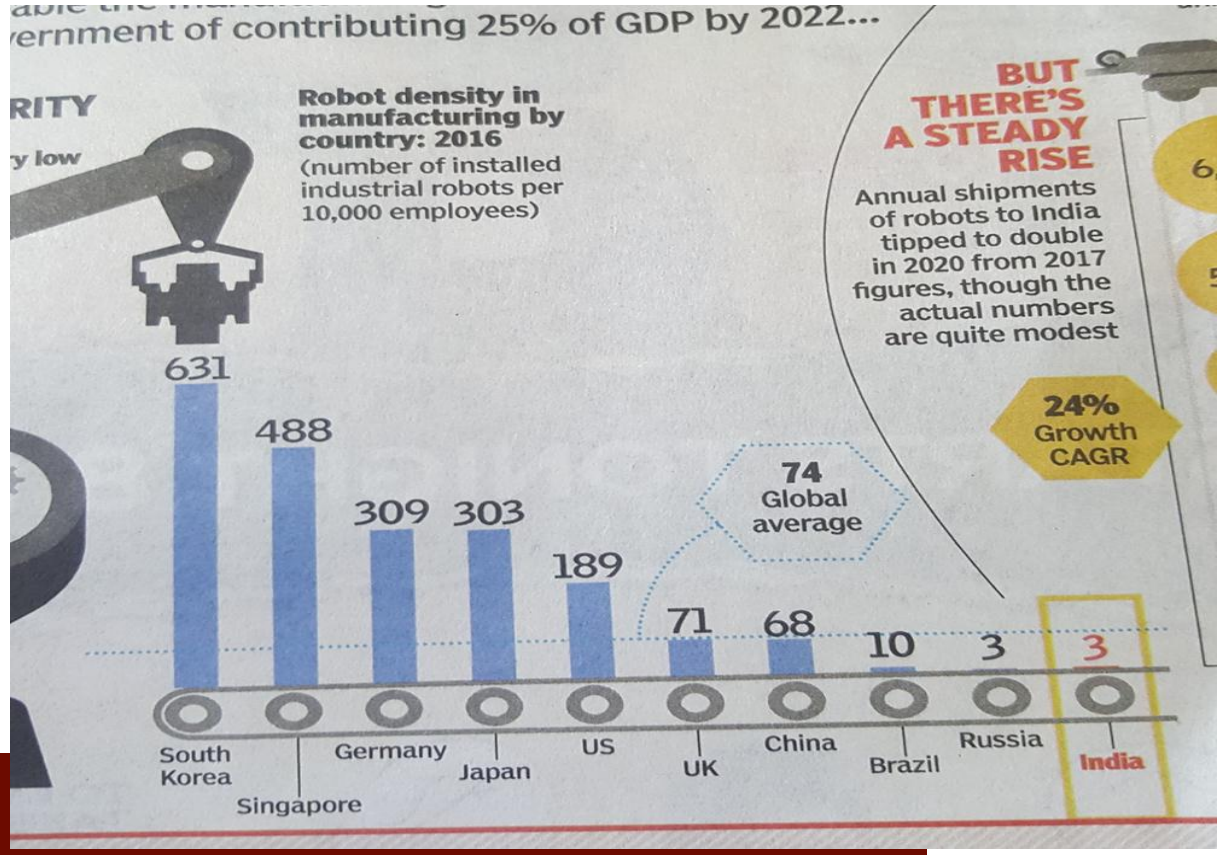
Constant upskilling

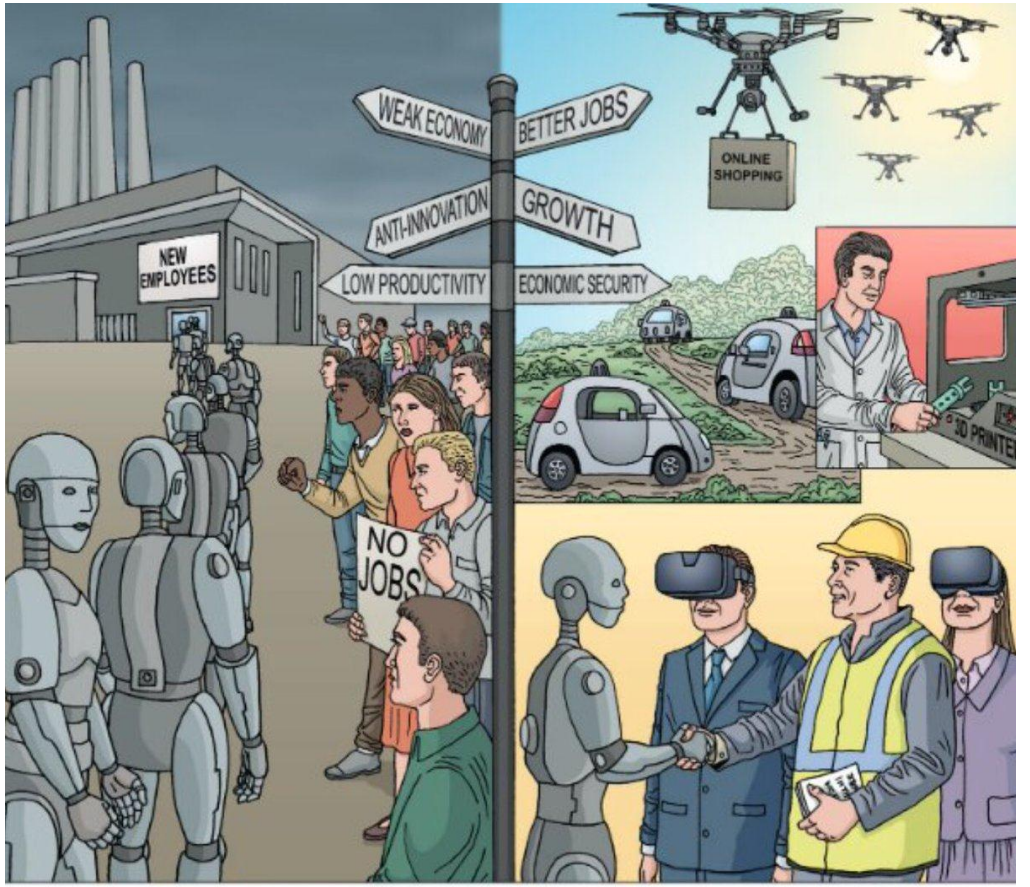




Effect 3: Future of Work (c)

Human and Human → Human and Machine



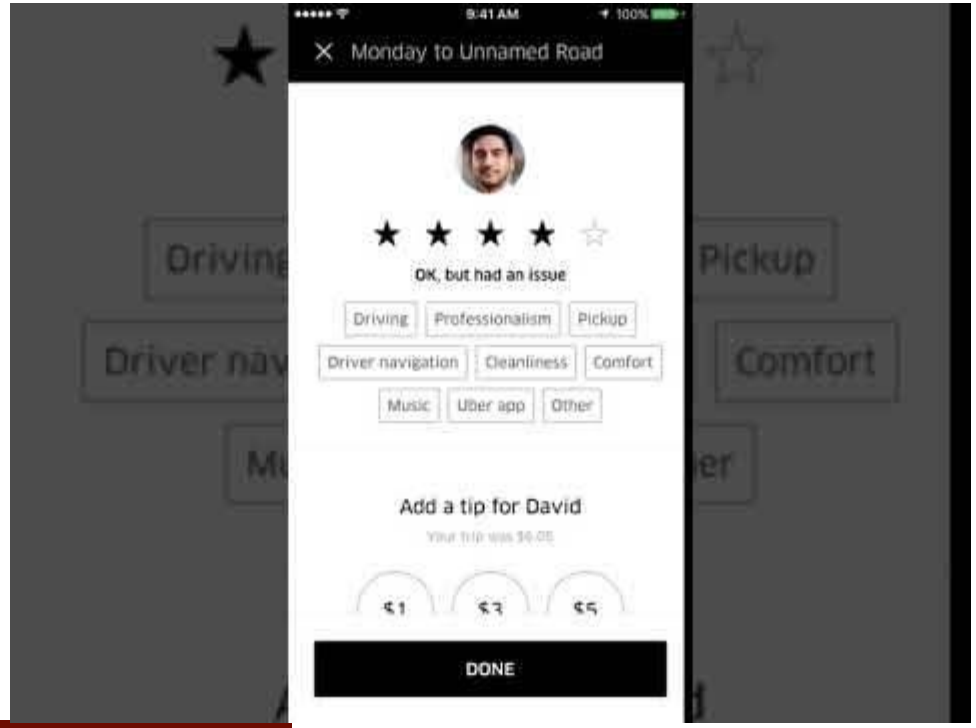


LABOUR'S DYSTOPIAN FUTURE

POSITIVE CONSERVATIVE VISION

Effect 3: Future of Work (d)

Linear Model → Co-creation and Personalization



Effect 3: Choice of Work(e)

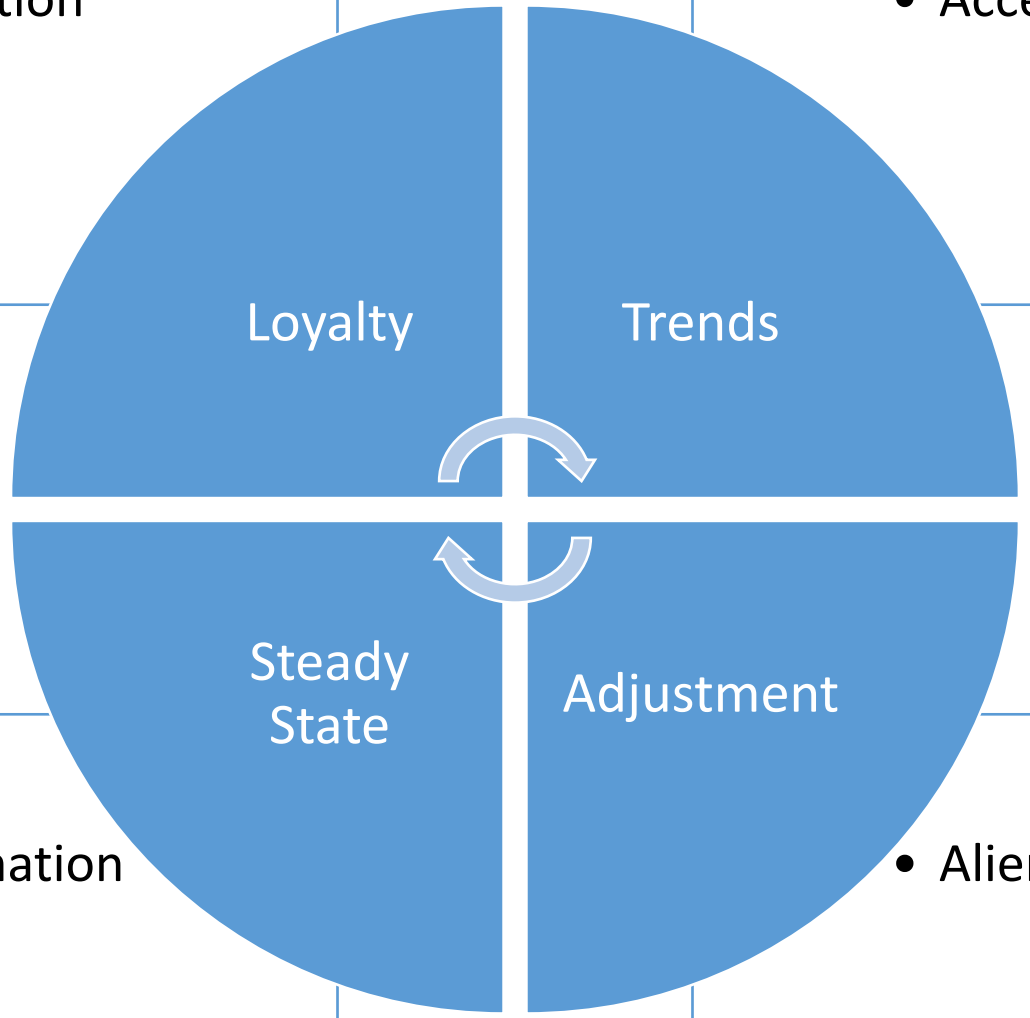
Job → Purpose and Passion

Effect 3: Choice of Work(f)

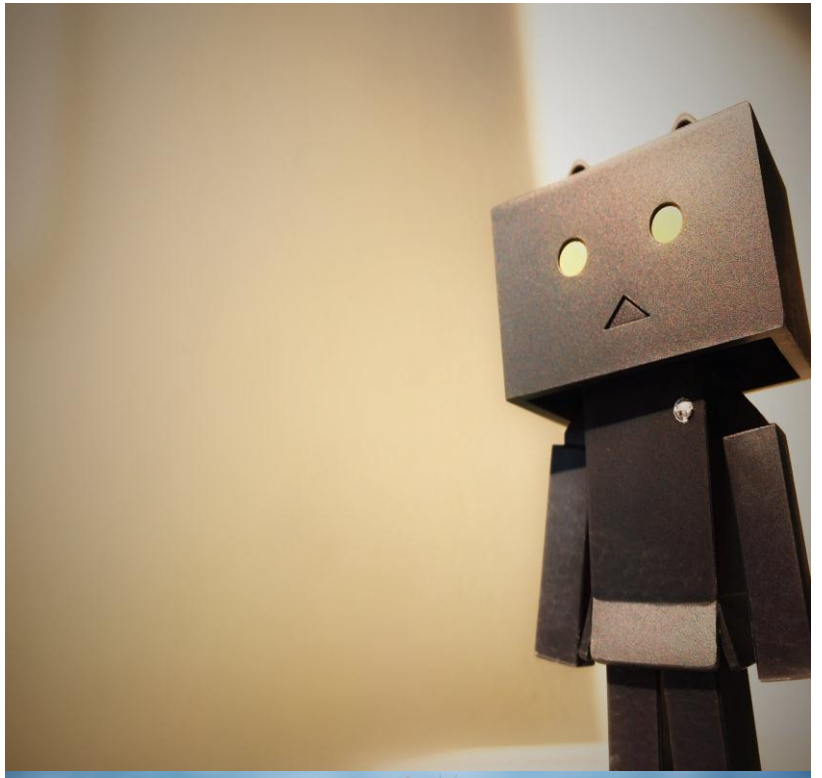
Full time employee → Uberization of Talent

Changes

- Aspiration
- Acceleration



- Automation
- Alienation



***Facebook and Google are not platforms, they are behaviour changing empires*" Jaron Lanier considered father of VR**

***Facebook and Google are not platforms, they are behaviour changing empires*" Jaron Lanier considered father of VR**

“We do not know what we do not know. And What we do not know is far more relevant than what we know”….Nassim Taleb
“

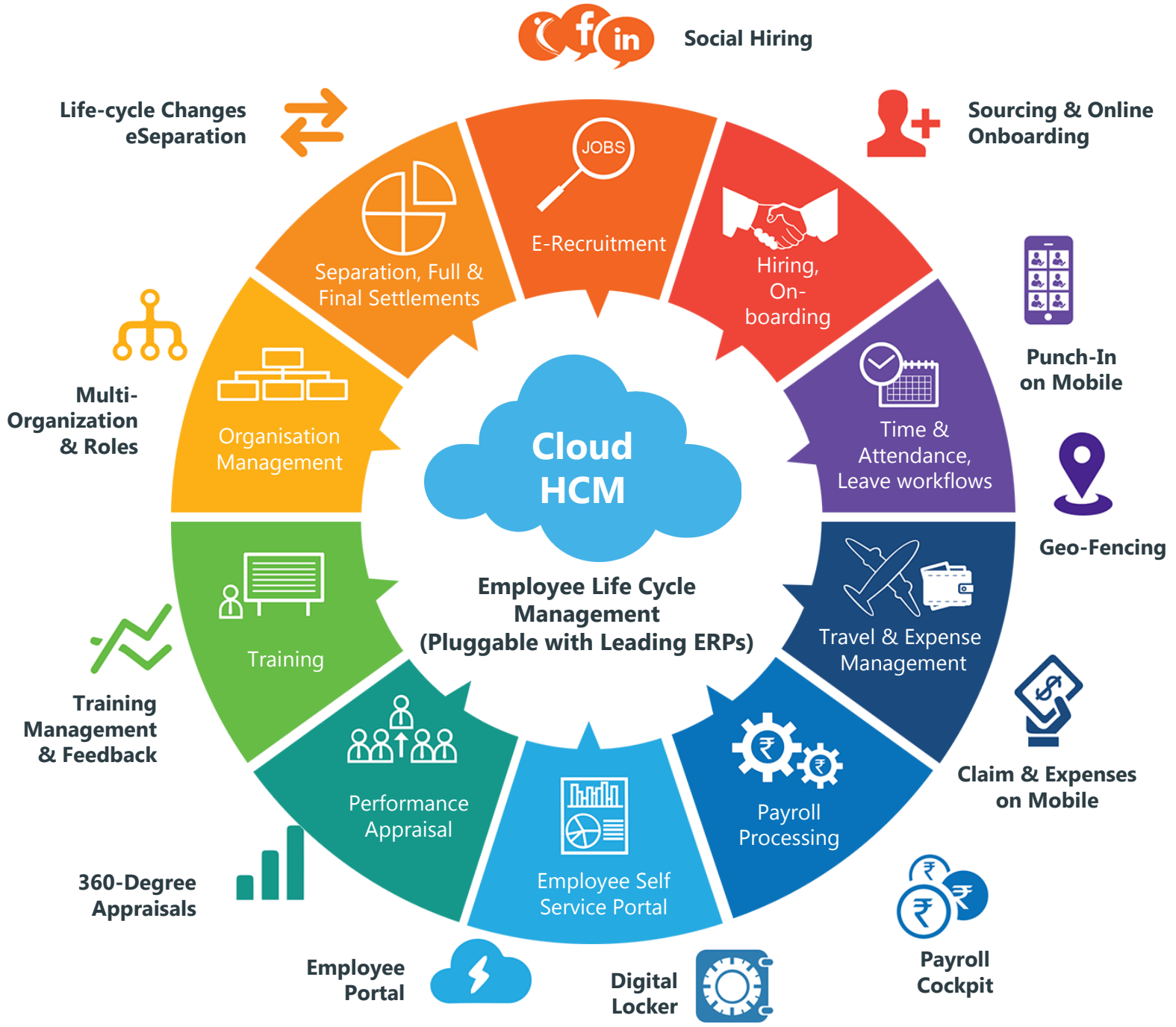
Is Artificial Intelligence relevant in HR?

Leveraging Technology and Intelligence in Human Resources

Hire-to-Retire Cloud Platform

(Pluggable with Leading ERPs: SAP, Oracle, Microsoft AX...)

Social	**Mobile**
Cloud	**Analytics**



AI in HR: The Problem / Opportunities!

How can Social Media footprint be helpful in the entire process

How can I predict attrition of talent

What are the HR interventions that will work

How do I discover potential over and above traditional appraisal process

Can you help me in eliminating manual work to screen resumes, yet achieve best-fit candidates

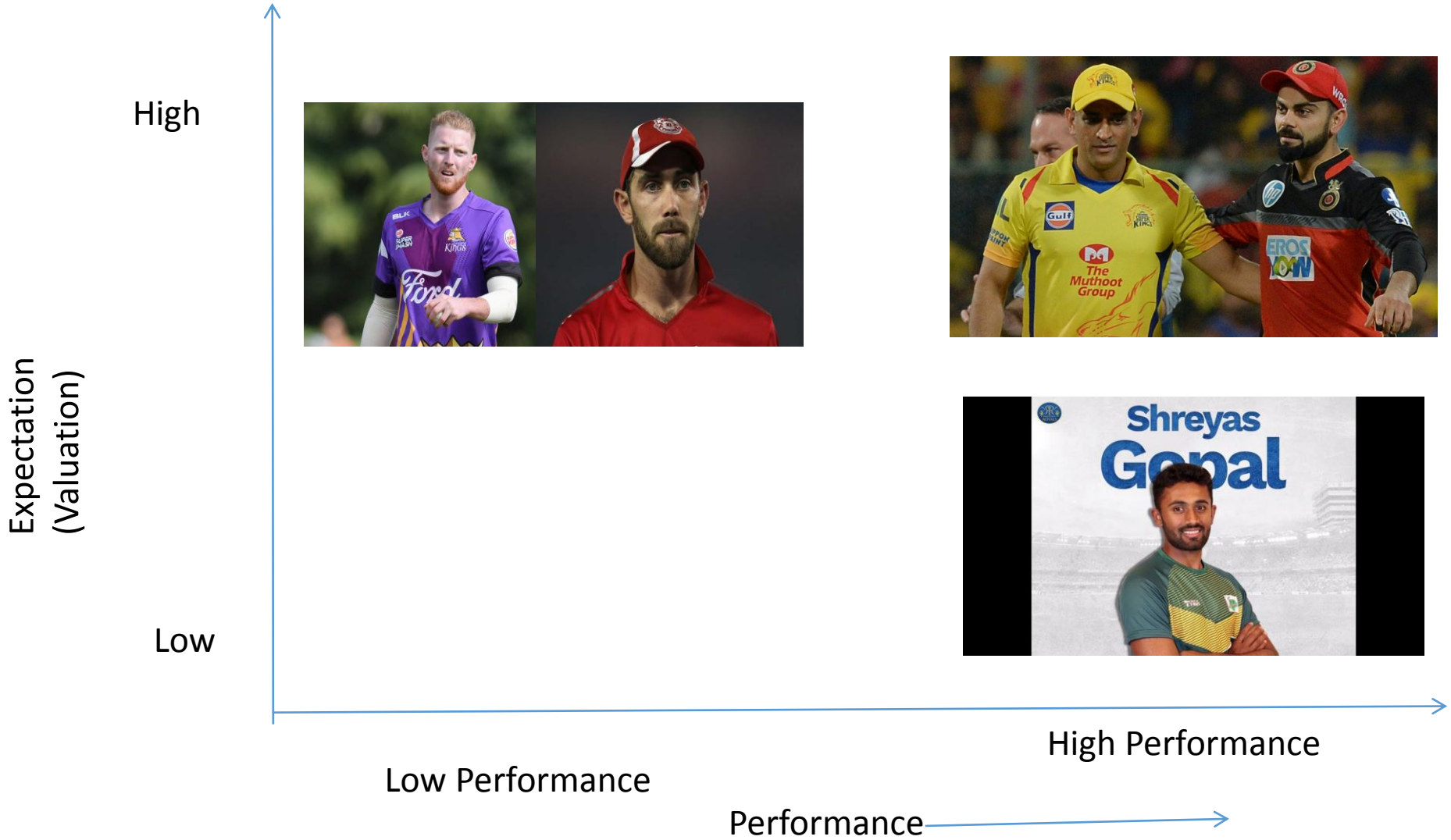
How do I eliminate interviewer bias and inefficiencies in the process

I need interviewer to be aware of internal successful profiles to benchmark while hiring

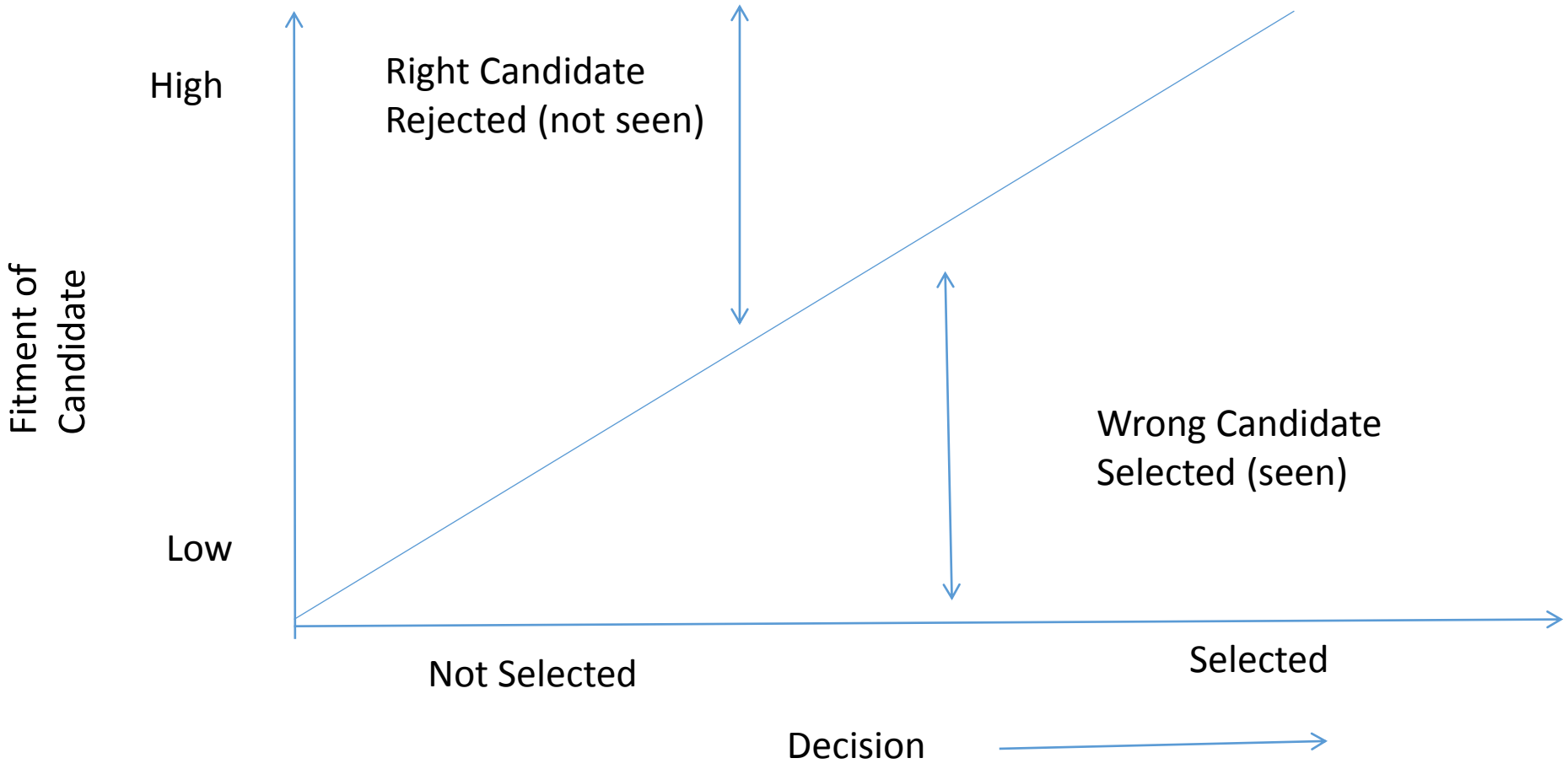
My annual Employee Survey seems to be ineffective in assessing the real happiness /alignment quotient

Example

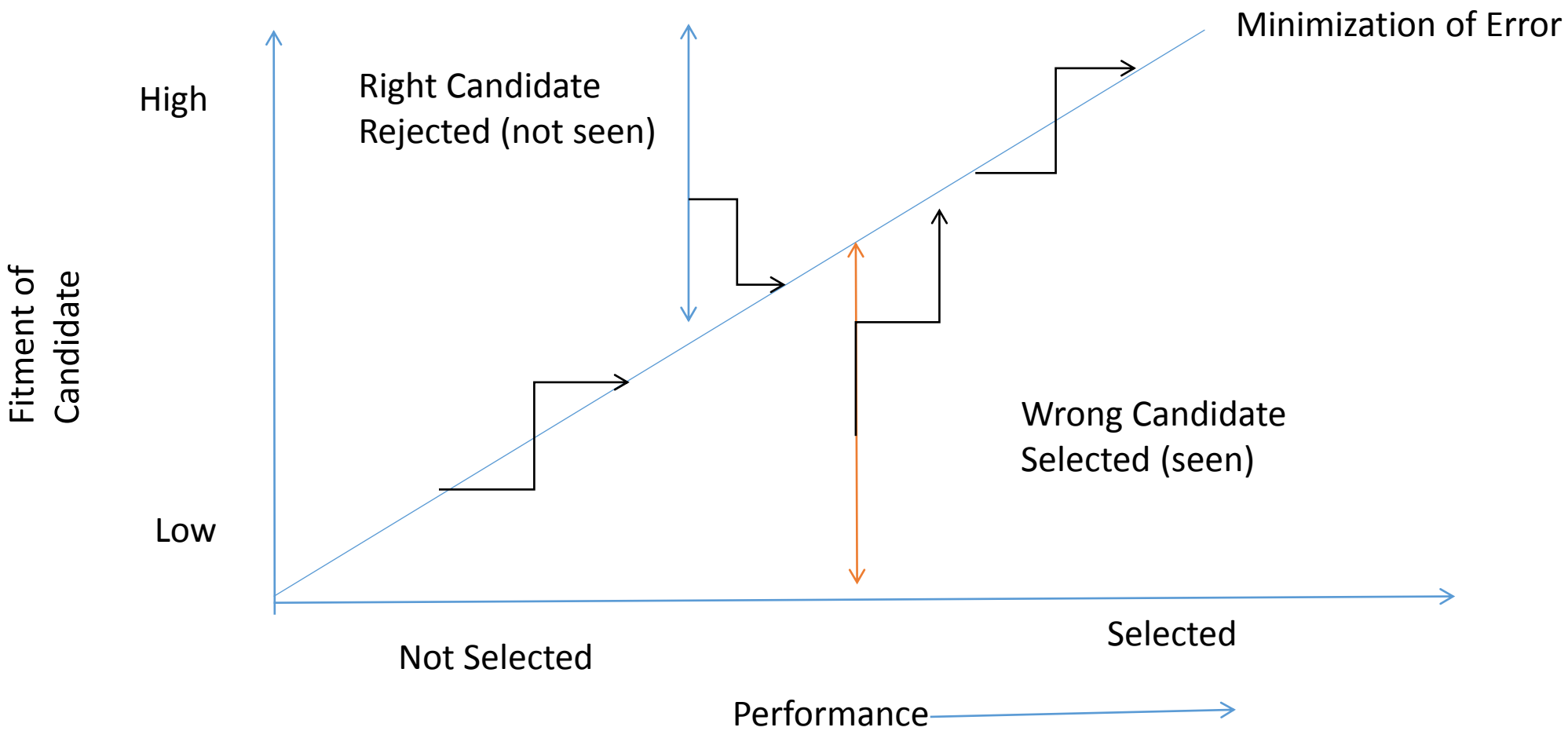
Expectation – Performance (IPL)

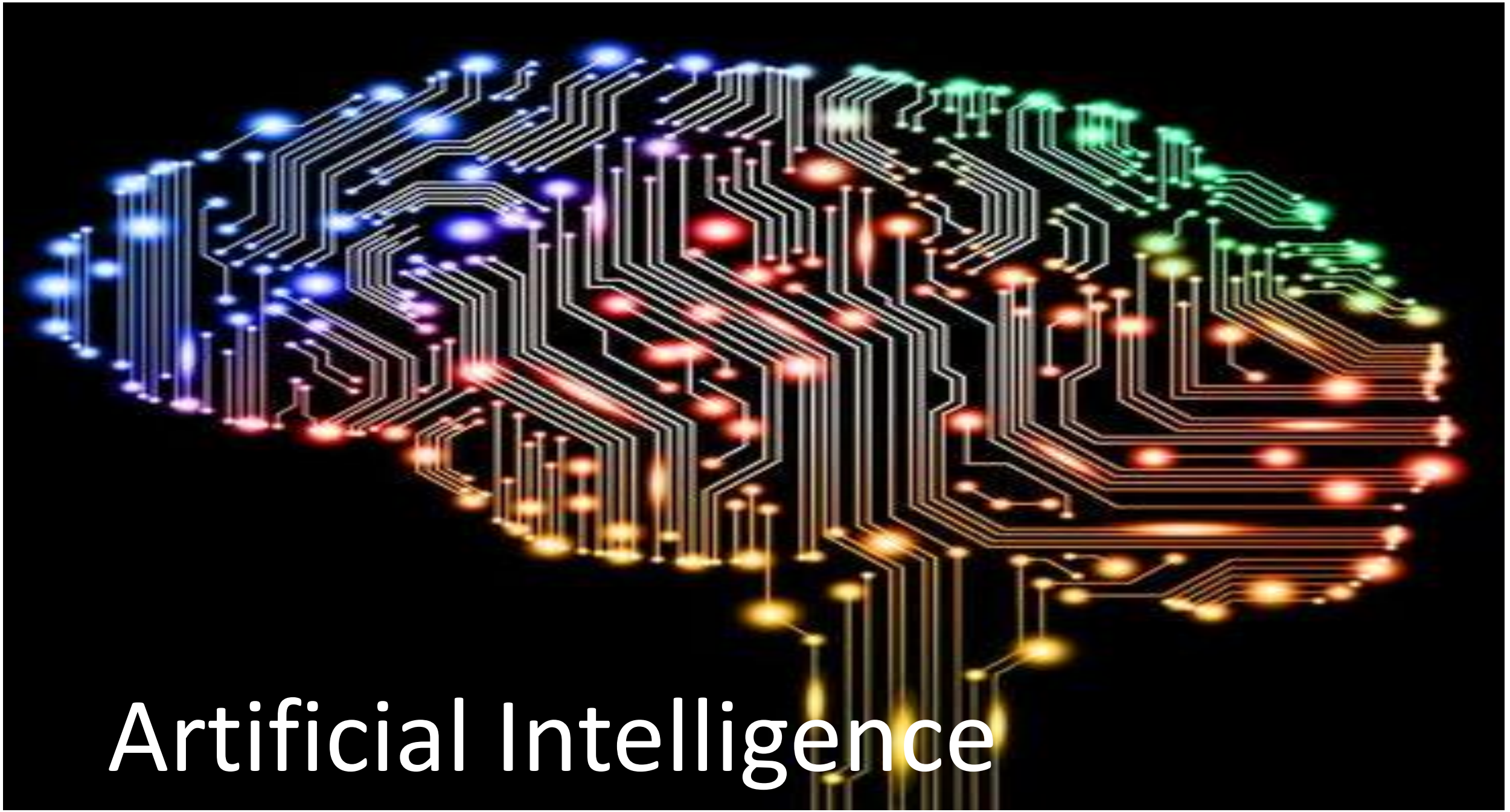


Recruitment

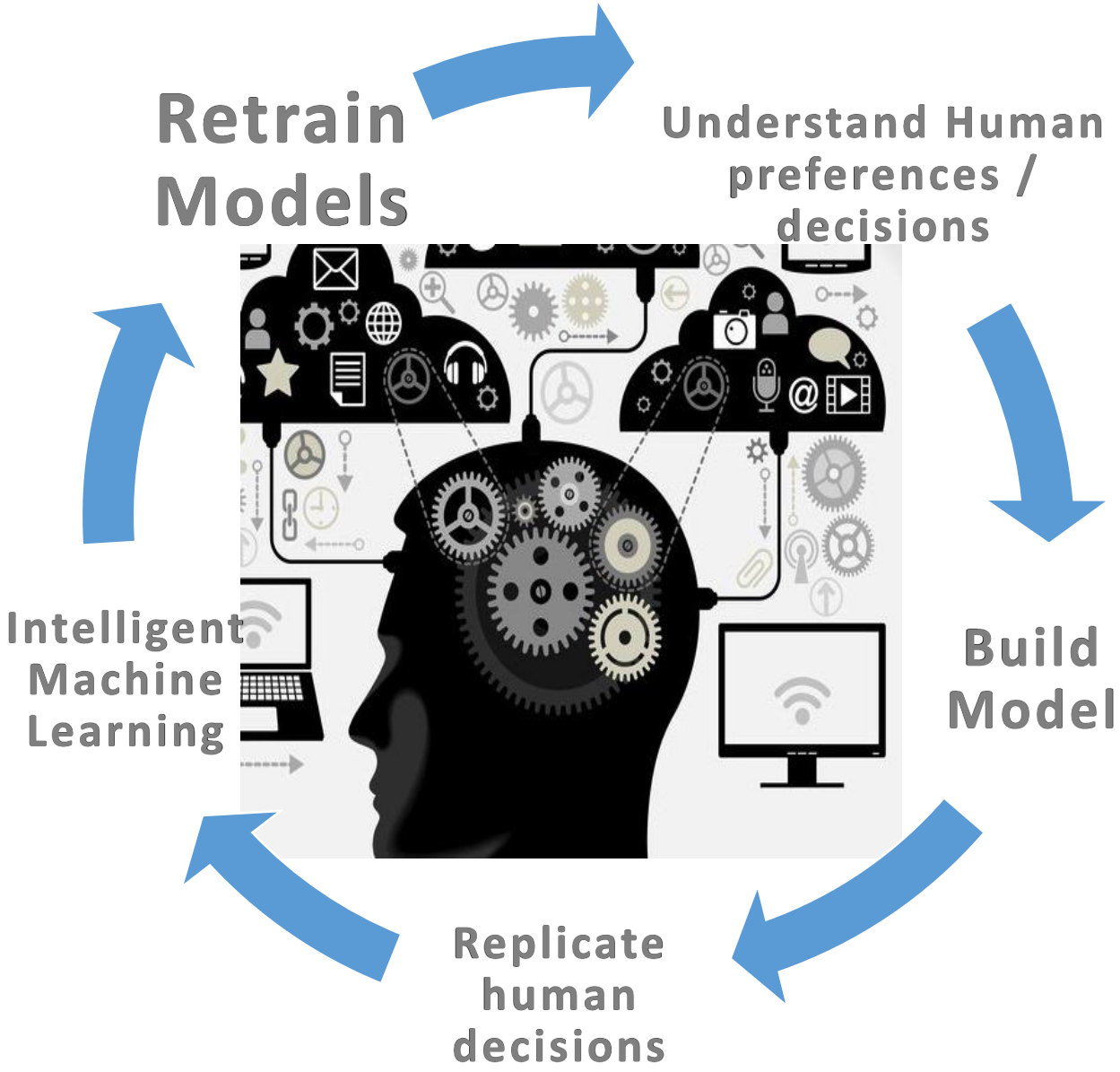


Recruitment




Artificial Intelligence

The Machine Learning Wheel



Recruitment User Journey

Nikhil requests for three mobile developers.

His manager approves the request.

Harshita posts the JD on Job Portals - Jobseek, Naukri, Monster, LinkedIn; selects 100 Resumes.

She shortlists 40 out of 100 resumes and approaches Nikhil with the shortlisted resumes.

Nikhil spends a lot of time to manually go through each resume and identifies 15 candidates for interviews.

Harshita contacts those 15 candidates for a preliminary interview. She ends up talking to only 10 of the candidates selected, as they are at their workplaces.

From shortlisted 10 candidates, Nikhil selects 6 candidates for face-to-face interviews.

Mapping competencies to find the right fit is a problem.

Out of the 6 selected candidates, only 4 turn up for interviews.

Nikhil spends time for face-to-face meeting with these 4 candidates and finally selects 3.

Harshita discusses the date of joining, negotiates their salaries and generates the offer letters.

Once the offer letter is accepted, she constantly follows up to discuss the joining date or to negotiate the salary structure.

After receiving a confirmation, she follows up with candidates for documents required for joining such as Relieving Letter, Experience Letter, Last Salary Slip etc.

Candidates continuously call Harshita for clarifications.

On the final joining date, only one candidate turns up.

Recruitment User Journey

HRMS + Intelligent Parser

Machine Learning Algorithm Skills, Competencies

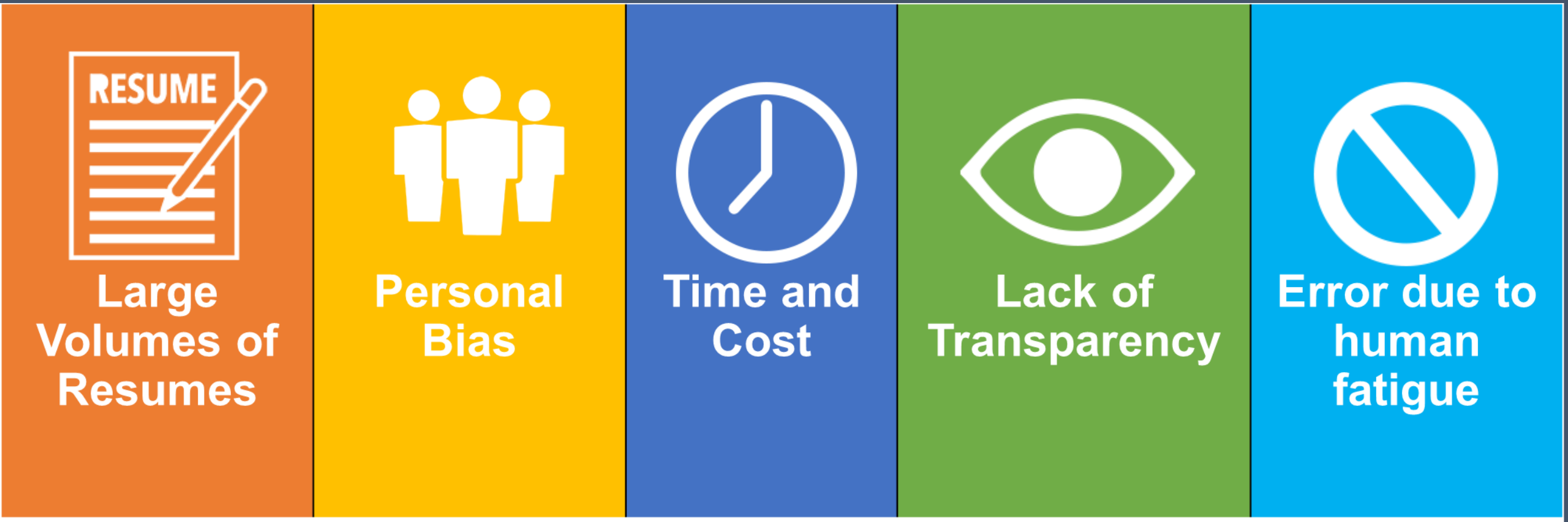
Automated Candidate Engagement

Digital Onboarding App with Aadhaar eKYC, Chat, Negotiation, Document Submissions

Video Resume

Additional ML with Personality Assessment

Problems Addressed

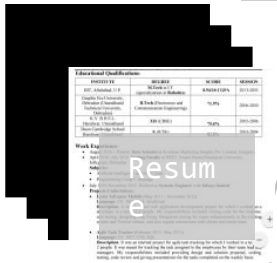


Alpha Error and Beta Error

Manual Resume Screening

Candidate Status (Yes / No) captured

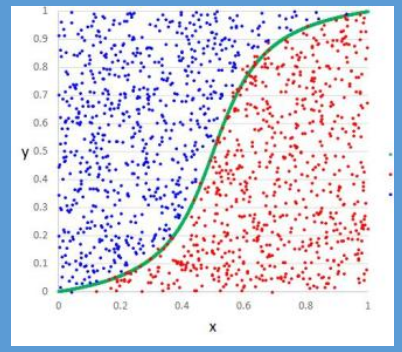
Use Historical data to build ML Model



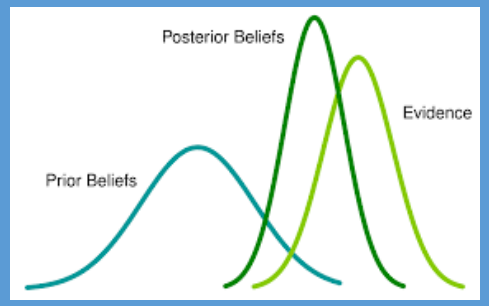
Essential	Important	Good to have
JQUERY(0)	Angularjs(0)	
MVC(0)	JavaScript(0)	
development(13)	communication(1)	
Lead(1)	SDLC(1)	
SQL(25)	performance(5)	
NET(14)	Security(1)	
Engineer(6)	HRMS(0)	
Good communication skills(0)	development techniques(0)	
	Comprehensive understanding(0)	

Job Evaluation Matrix

Azure Machine Learning



Logistic regression for probability of selection



Bayesian probability for competency mapping

Probabilistic Score for each candidate

Process Innovation Followed

Machine **trained** to parse, analyse and rank resumes basis their **Competencies and Skillsets** using **Azure ML**

1

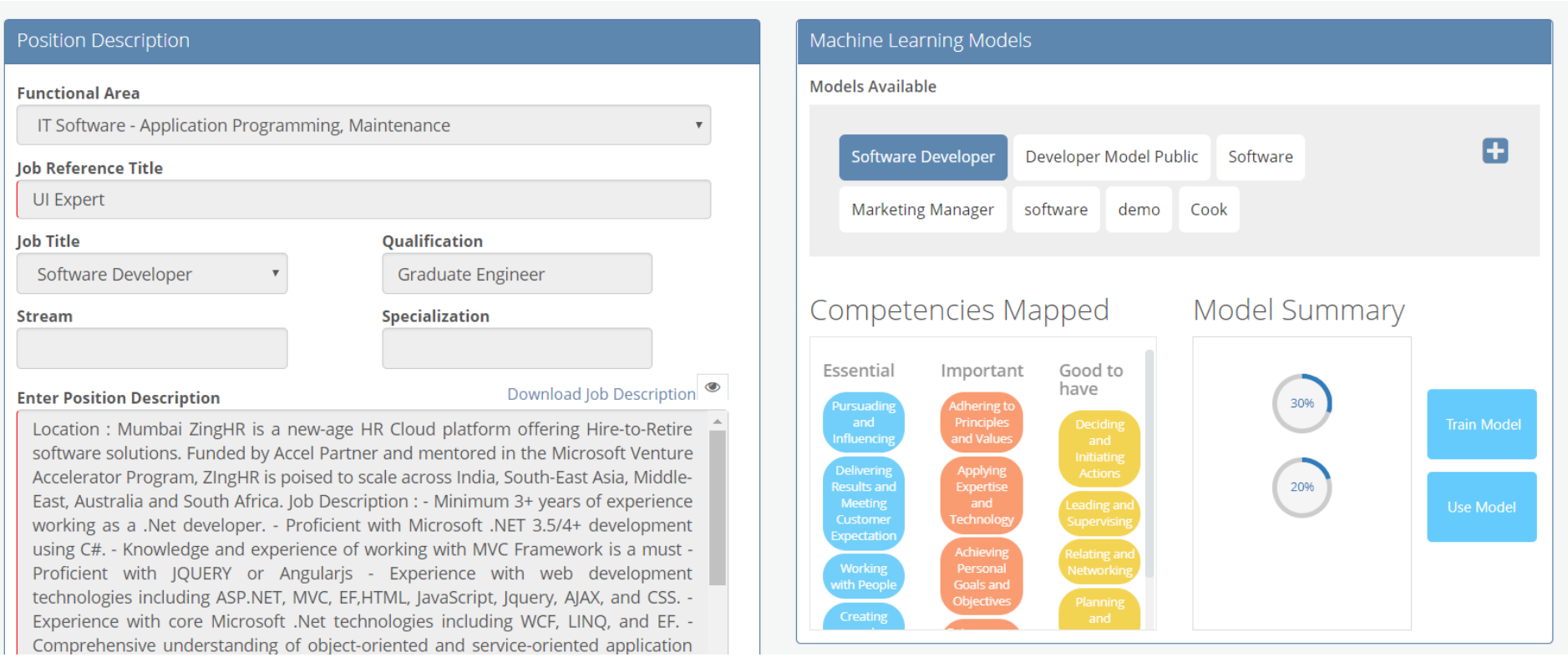
Candidates' speech and text analyzed to get their **Personality Insights** on **Big 5 (OCEAN), Needs and Values mapping**

2

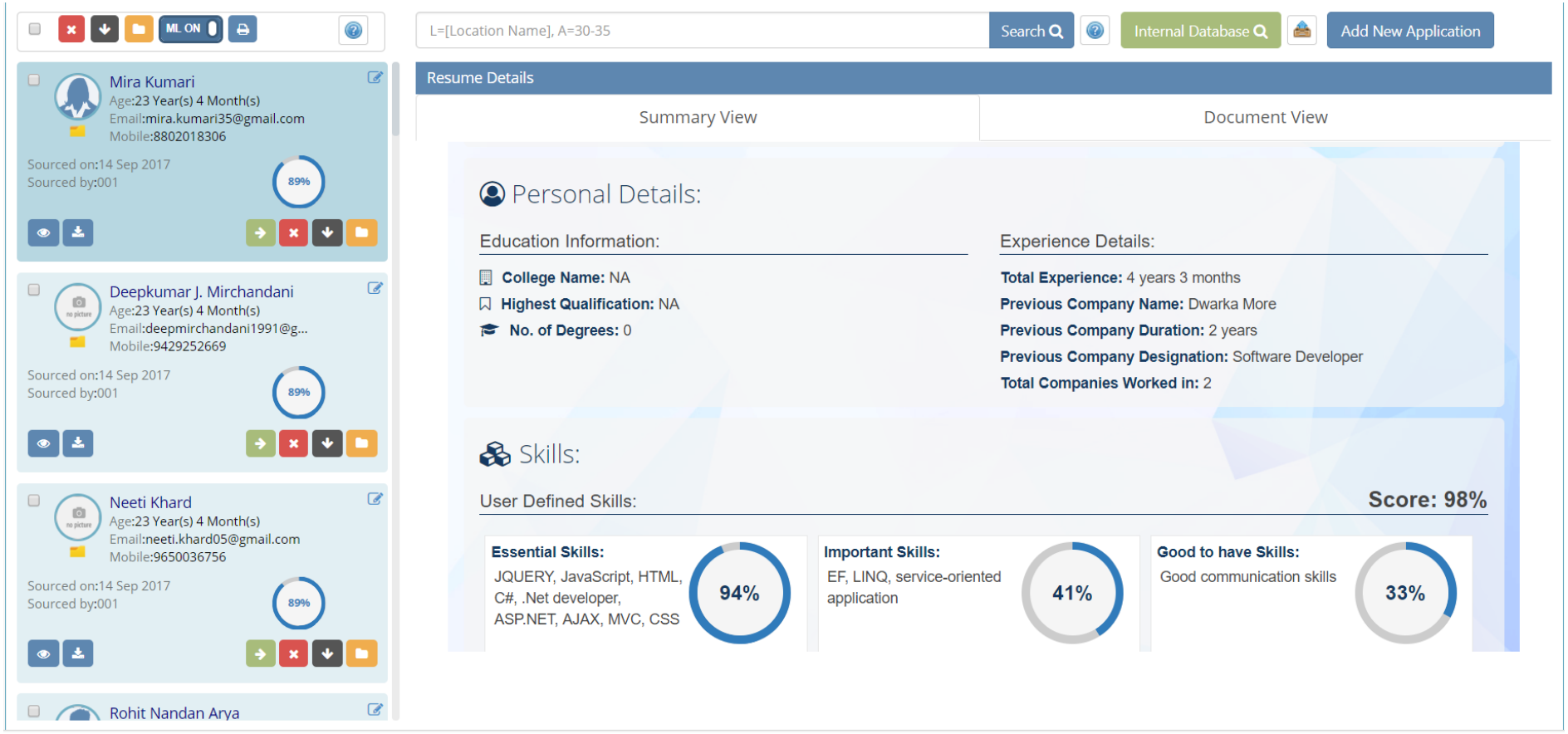
Candidate Interviews recorded and their emotional responses assessed using **Microsoft's Cognitive Tools**

3

Selecting Machine learning model



Applying model and getting stack ranking of new candidate



Recruitment
Planning & Budgeting
Talent Acquisition
Sourcing
On Boarding
Reports
Bulk Upload Engine
Akyshay
View
Show Applications
Screening 58
Shortlisted 3
Interviews 4
Assessments 3
Salary Fitment 1
Offer Letter 1
Search
Internal Database
Add New Application
Advanced Search
Shivhare Vandy
Age: 27 Year(s) 11 Month(s)
Location: Not Available
Experience: Fresher
Email: shivhare.vandy2011@gmail.com
Mobile: 9768545324
Sourced On: 23 Aug 2016 Sourced By: Admin
Aditi P. Sawant
Age: 33 Year(s) 10 Month(s)
Location: Not Available
Experience: Fresher
Email: vidita.sheth@energys.com
Mobile: 9768545324
Sourced On: 23 Aug 2016 Sourced By: Admin
Ahmed Ansari
Age: 35 Year(s) 10 Month(s)
Location: Not Available
Experience: Fresher
Summary of the score factors
Competency
Skills
Longevity
Culture
70%
Culture Fitment
30%
Skill Fitment
Customer Focus
Management
Planning
Analyzing
Entrepreneurial
Longevity
Present in Resume
Present in JD
Essential
Important
GTH

Dear Mr. Hemant Meena, Welcome to the Robotic Interview Session

Candidate ID: 5 Start Interview End Interview

Describe any experience you have in forecasting or developing quotas.

Summary

You are shrewd, strict and particular.

You are energetic: you enjoy a fast-paced, busy schedule with many activities. You are trusting of others: you believe the best in others and trust people easily. And you are assertive: you tend to speak up and take charge of situations, and you are comfortable leading groups.

Your choices are driven by a desire for organization.

You are relatively unconcerned with both taking pleasure in life and tradition. You prefer activities with a purpose greater than just personal enjoyment. And you care more about making your own path than following what others have done.

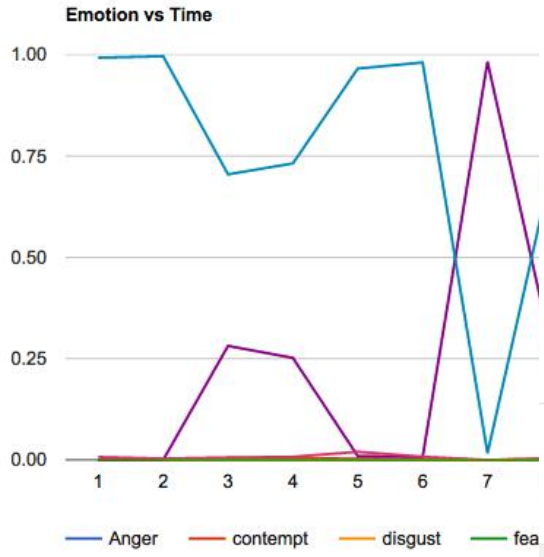
How did we get this?

You are likely to_____

- be sensitive to ownership cost when buying automobiles
- volunteer to learn about social causes
- prefer quality when buying clothes

You are unlikely to_____

- prefer safety when buying automobiles
- read for relaxation
- prefer comfort when buying clothes



*% = percentile

Personality

Openness 98%

Conscientiousness 88%

Emotional range 86%

Introversion/Extraversion 69%

Agreeableness 8%

*% = percentile

Consumer Needs

Structure 95%

Curiosity 71%

Challenge 50%

Ideal 29%

Love 22%

>>

*% = percentile

Values

Stimulation 63%

Achievement 40%

Helping others 31%

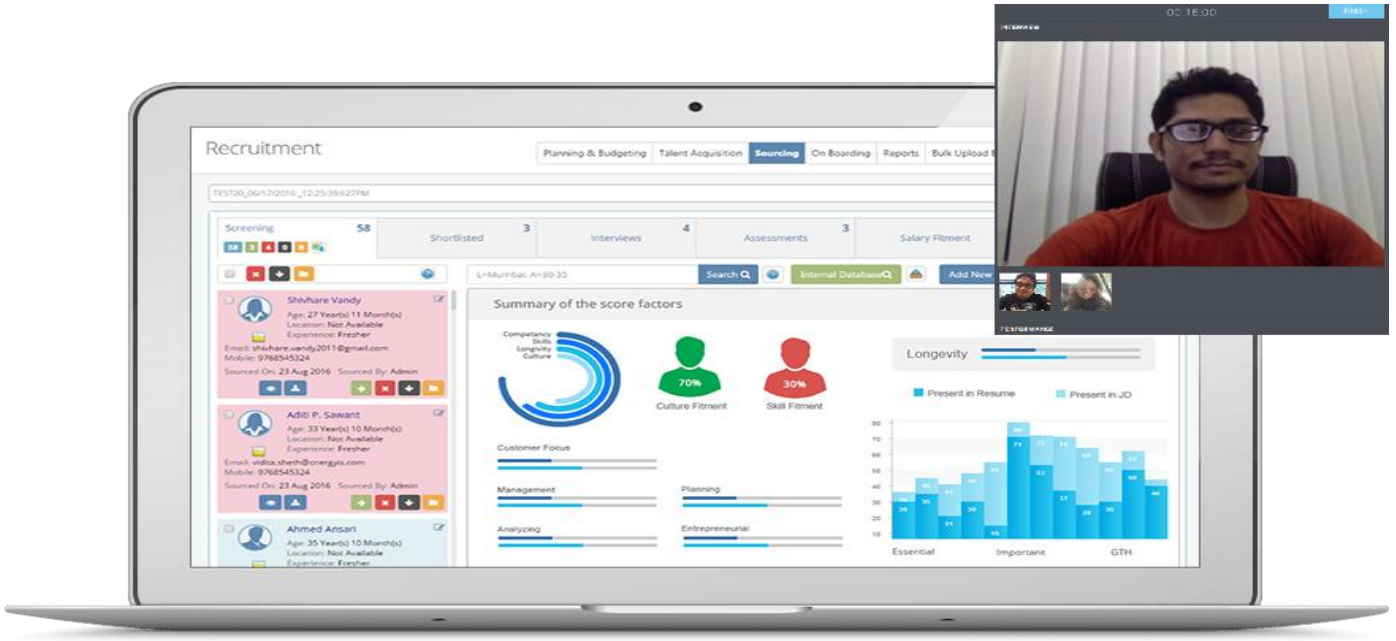
Tradition 9%

Taking pleasure in life 4%

How it works

- https://dev.zinghr.com/Recruitment/ZingHRTC/RoboticInterview?VCode=vJUpzxHsmfzj2nHlhPH7q7jGsUgOqw5S9tnq2SNXTPisIQhKnoJomk/th6h7XUZS

Machine Learning in Recruitment



Business Advantages

Improve Hiring Efficiency by 80%

Reduce Cost by over 70%

No hear, No See Selection

Managing Attrition

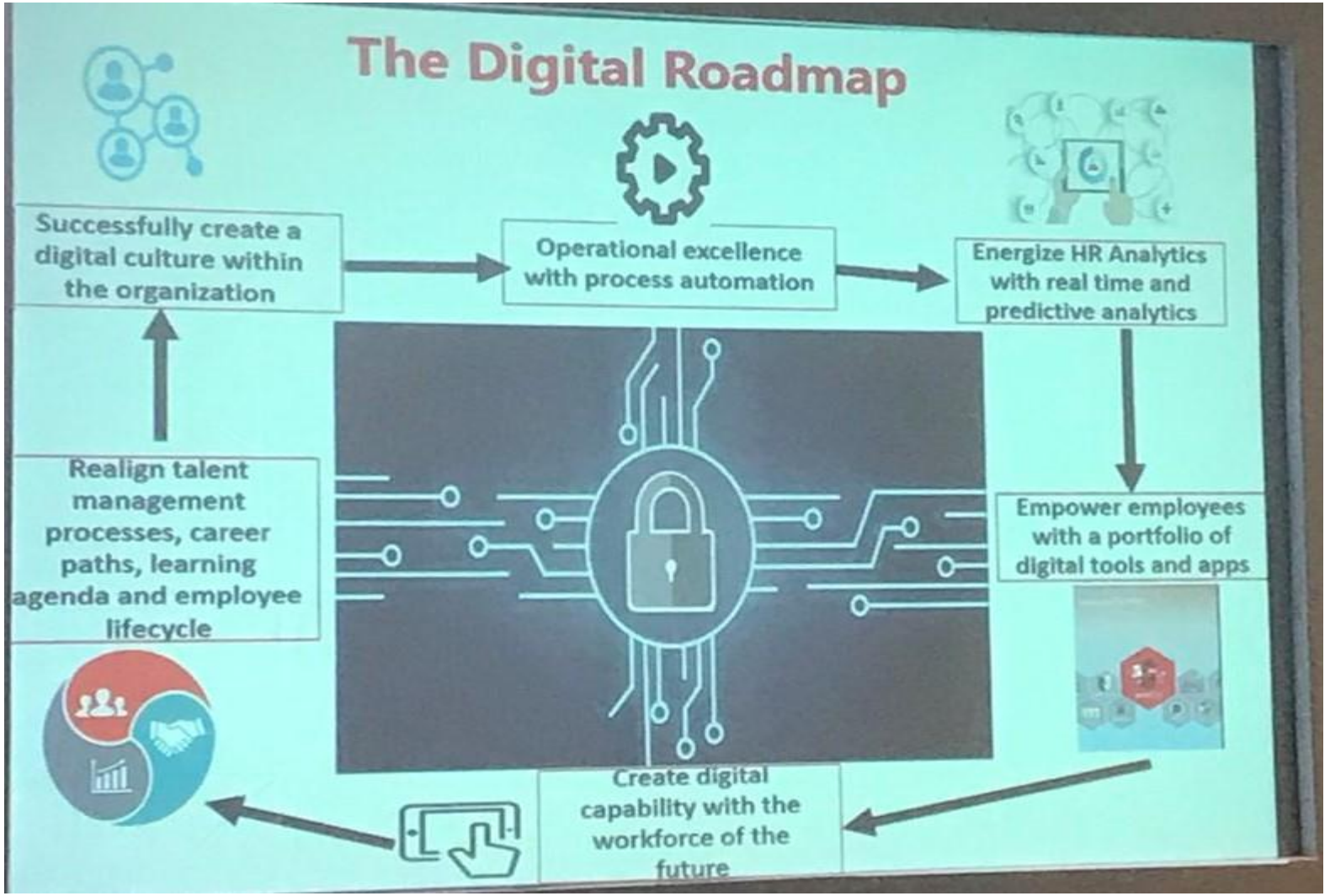
A	B	C
• No exit data • Happens • Organization does not know impact of attrition • Your competitors will be happy!	• Exit Analysis • Generic initiatives • Retain after resignation • You may loose your best!	• AI to predict • Proactive approach • Customized • You can decide!

Managing Promotions

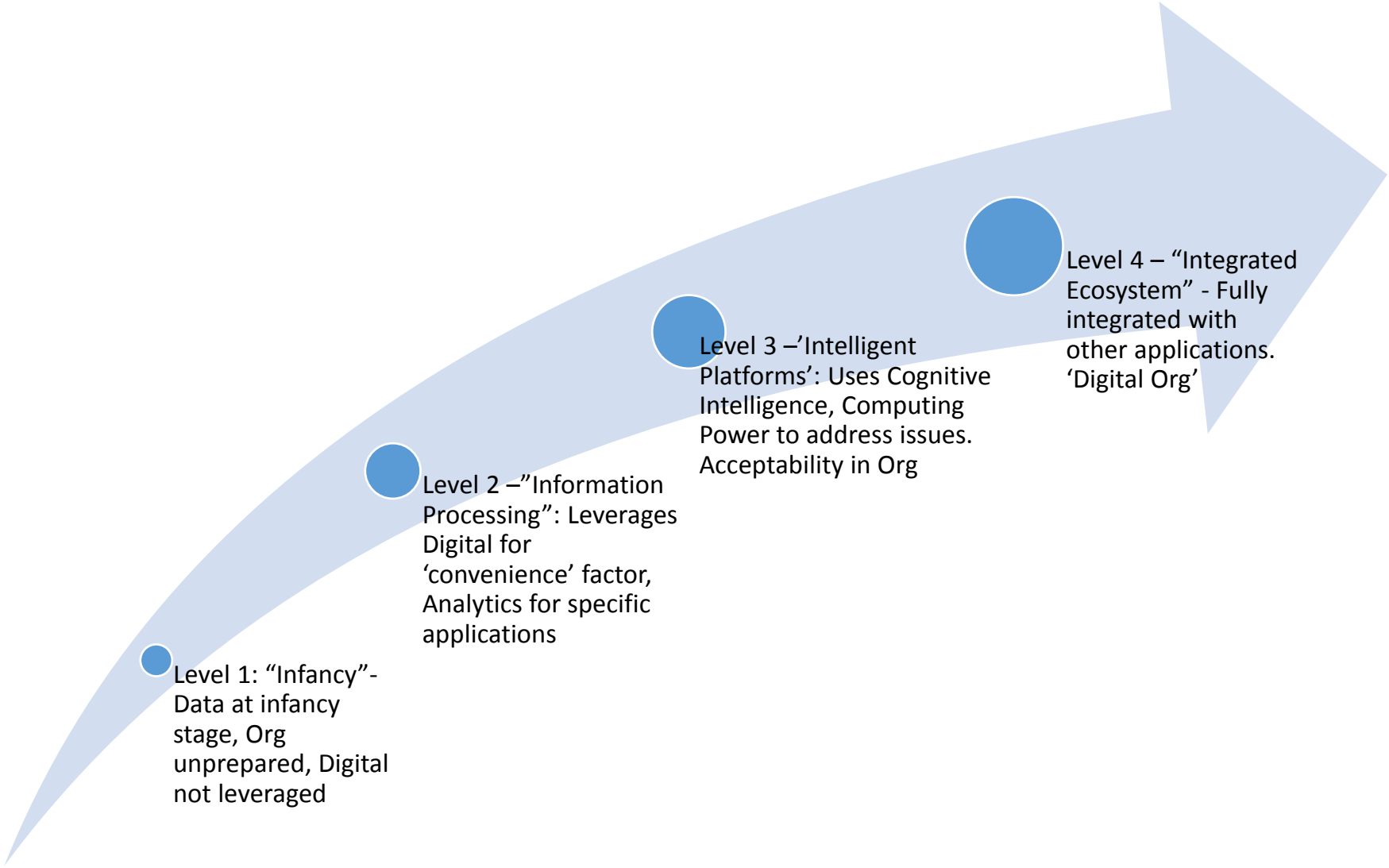
A	B	C
• Based on tenure • Loyalty important • Person continues to do same job	• Based on performance • Role change, but at times fitment bad. • *'Loose a good sales person and get a bad manager'*	• Use AI to predict • Mapping against competencies • You can decide!

Let not Human do work which Machine can do better

Digital Transformation



Stages in Digital Journey



Stage 2: Information Processing

- technology to automate basic HR processes –like leave, attendance, travel, hiring, manpower planning, performance management, HR data base, hiring, salary processing, legal requirements and exit.
- Improve efficiency, speed up transaction time
- Reach out to large number of employees spread over.
- Organizations generate data and use data for generating reports, based on which decisions are taken

Stage 3: Intelligent platforms

- Uses cognitive intelligence in processes like hiring, onboarding, performance management, improving employee experience, development and real time salary processing among others.
- Use of chat bots, AR and VR.
- Uses information in making real time decision, and in absence of human intervention in many nodal points.
- This stage needs re-design of organization processes
- Can improve employee experience, enhance predictability and improve decision making.

Stage 4: Integrated platforms

- SaaS to PaaS
- processes ‘talk’ to each other – not just in HR domain, but extend to processes in other functions.
- For example, based on market sentiment which affect product demand, manpower hiring numbers could get adjusted. This need not be restricted to within the organization - it could be ‘fused’ with external data points.
- This needs wholesale change in how organizations are structured and capability of people.

Saves Costs

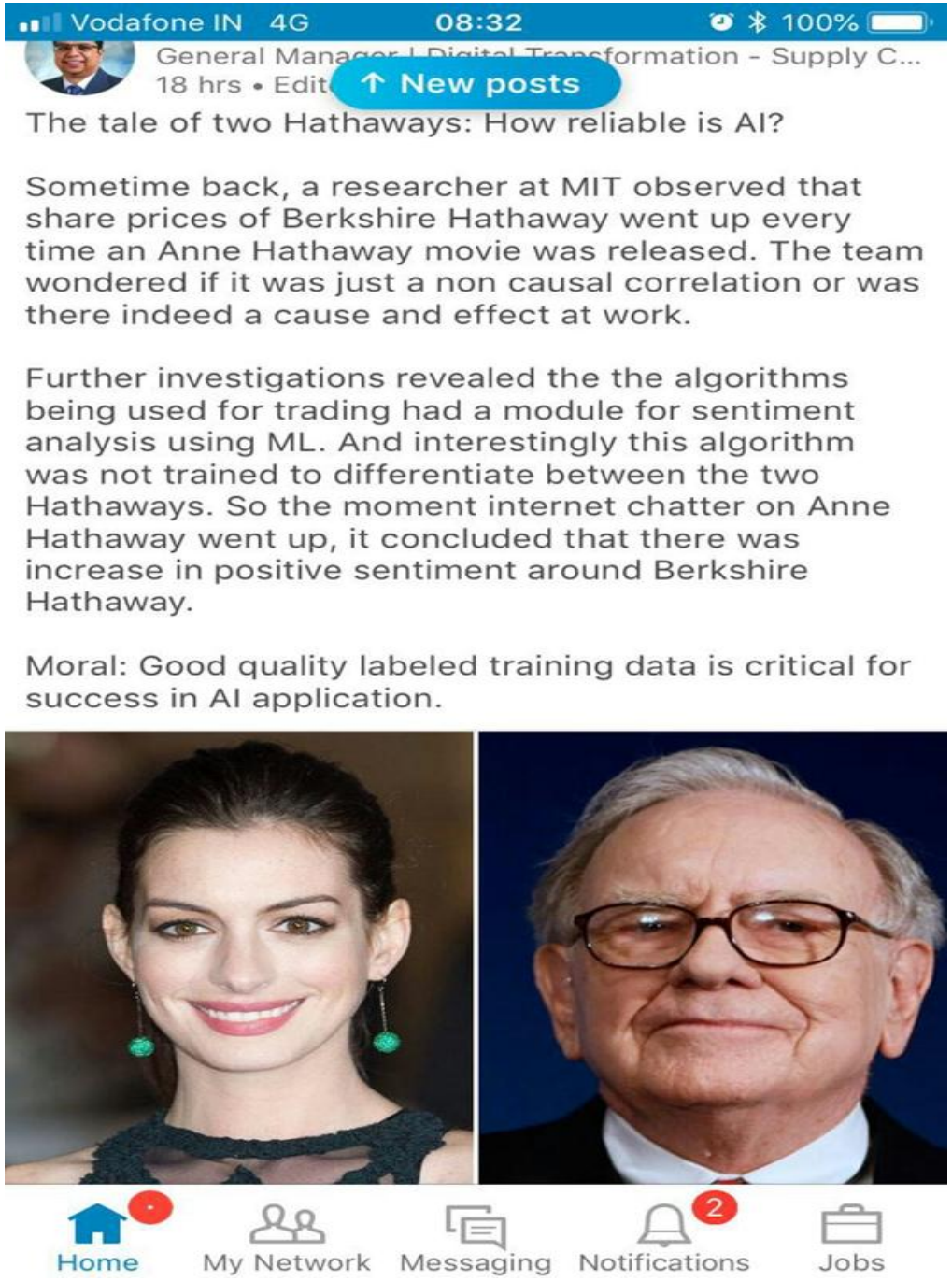
Efficiency

Personal Bias

Reduces Errors

- Lose of Human Touch
- Security
- Ethical Practices
- Over Reliance on Machine
- Potential Danger if in wrong hands
- Privacy

AI – if we get it wrong?



Skills and Capabilities

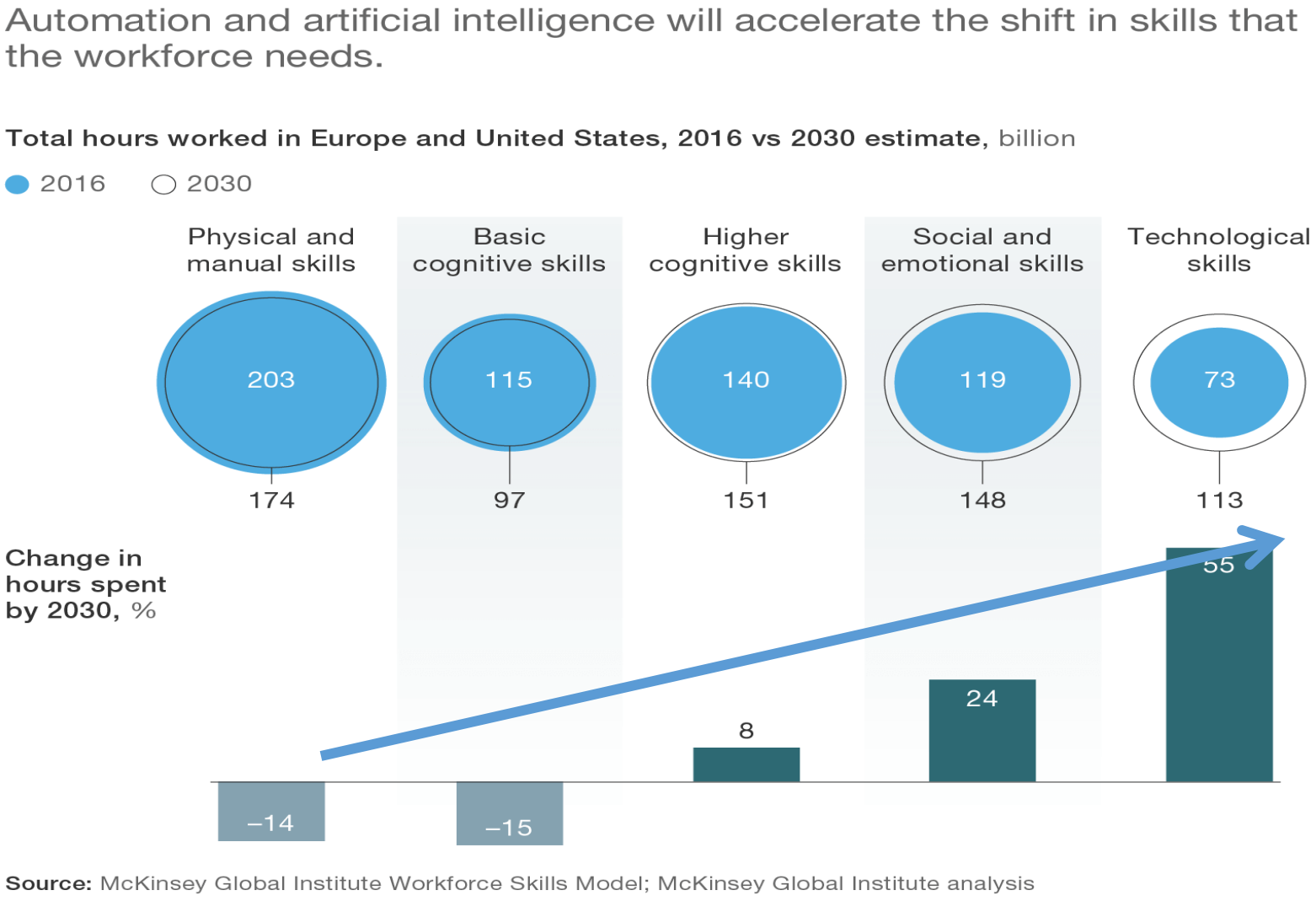
Skills Change from 2016-2030

Ethics

Maths

Empathy

Self



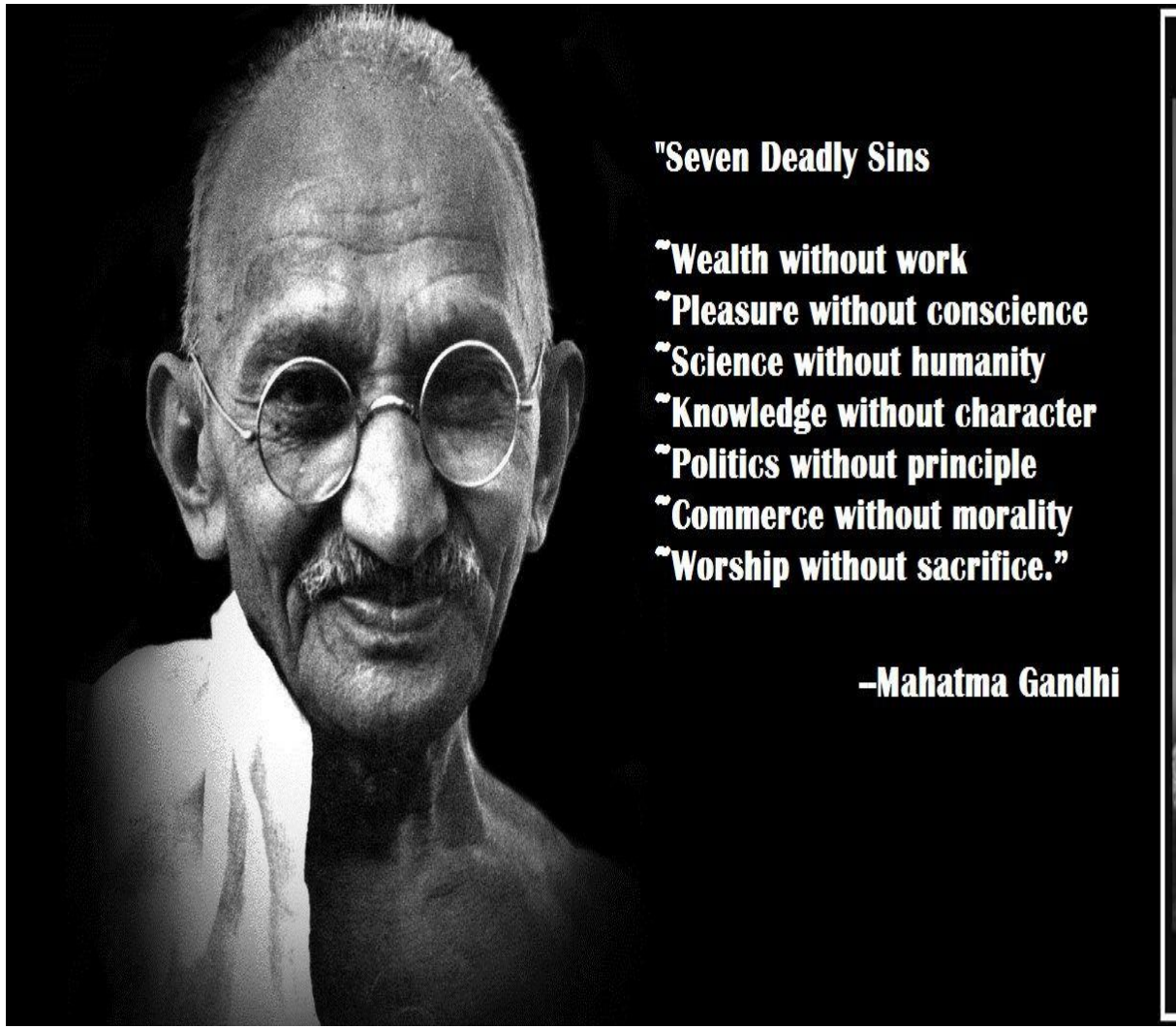
Future lies in our hands

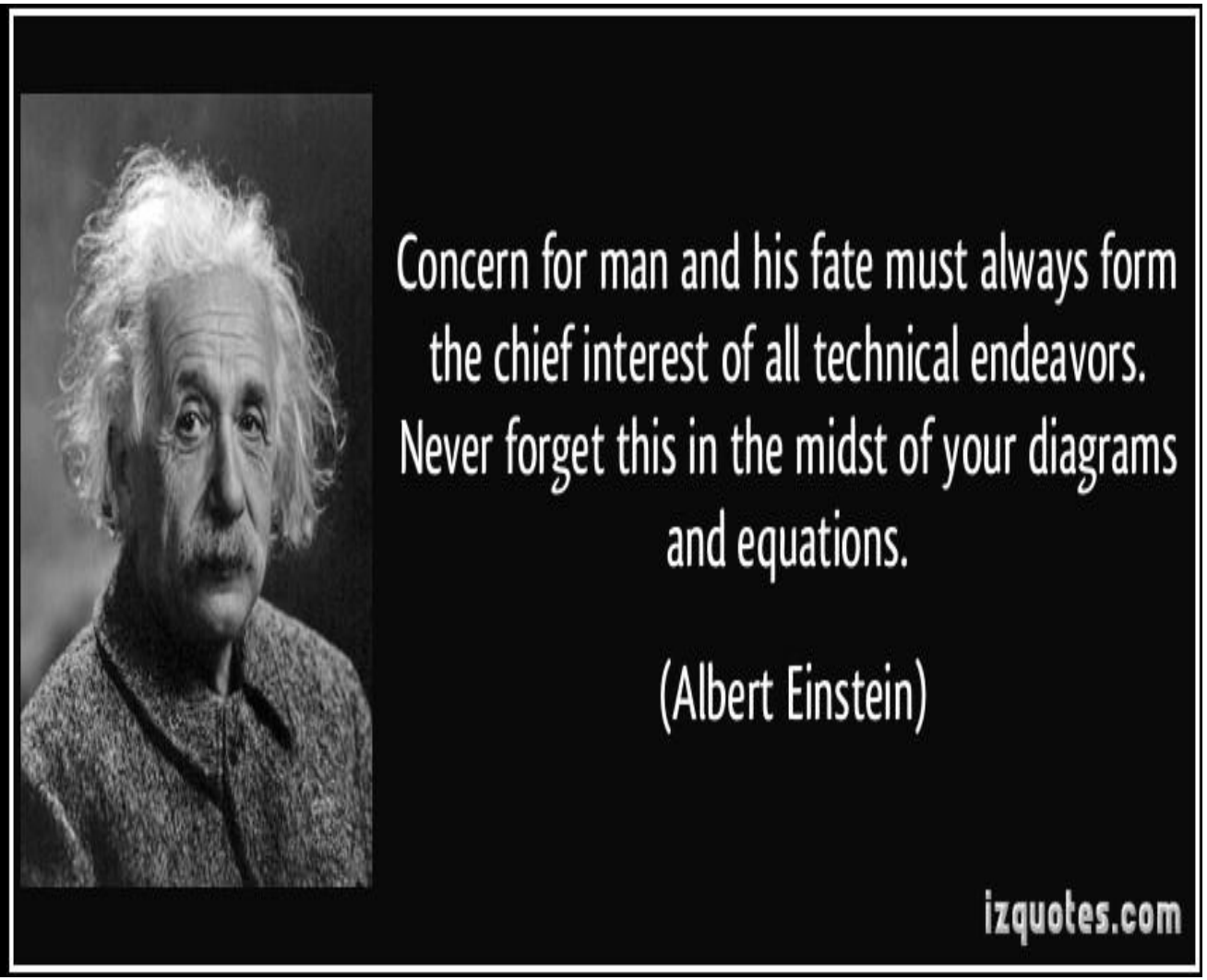
Future lies in our hands

Summary

- Interesting times –lot of opportunities thrown up by technology changes, driven by expectations of work force.
- Important for HR to ensure maximum success in people related decisions.
- Artificial intelligence can help predict outcomes in HR
- The key is
    A. Defining the problem
    B. Implementing the solution
- While there are sceptics on the use of AI, it is clear that there are benefits. But at same time, important to define the protocol and boundaries that we will use AI for.

Saint and Scientist





Time starts…..

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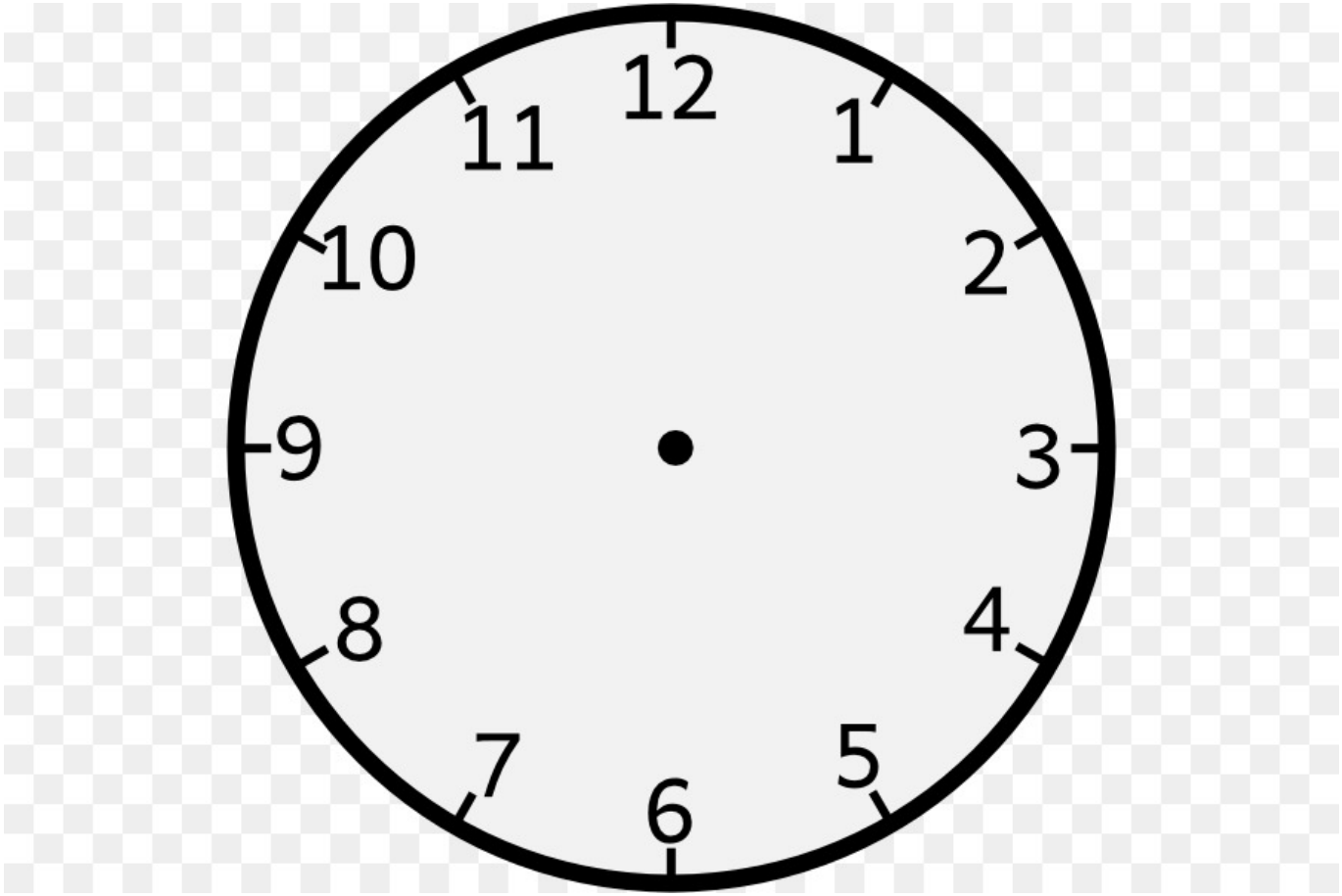

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