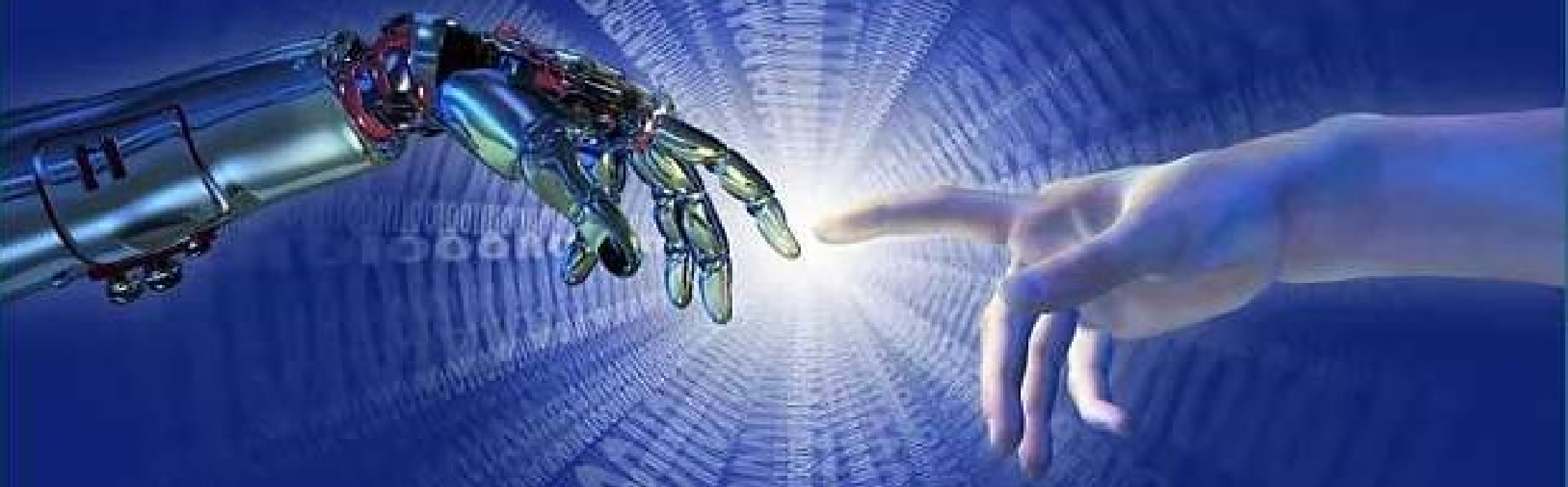
Humane and Ethical Dimensions of Digital Transformation and Cognitive Intelligence



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Acknowledgement

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The author acknowledges that graphics, freely available through internet, have been used for this presentation with the sole objective of propagating knowledge.

The World 2030 – Nine Megatrends to Watch

1. **Demographics*:** Will be 1 Bln. more to reach 8.5 Bln. population
2. **Urbanisation*:** Two third of population will live in urban areas
3. **Transparency*:** World will become even more open and less private
4. **Climate Crisis*:** Will continue to change faster toward extreme weather everywhere
5. **Resource Pressure*:** Humanity will aggressively confront resource constraints
6. **Clean Tech*:** Zero carbon technology will surprisingly be far along
7. **Technology Shift*:** IoT will won the day and every new device will be connected
8. **Global Policy?:** Open question about how important things will get done
9. **Populism?:** The rise of nationalism and radicalism may increase …. or won't

The BIG Question

Will digital transformation help mitigating ever threatening risks from these developments?

* **Source:** https://sloanreview.mit.edu/article/using-ai-to-enhance-business-operations/

Emerging Ecosystem and Digital Transformation

Change in ecosystem will bring directional change in decision making

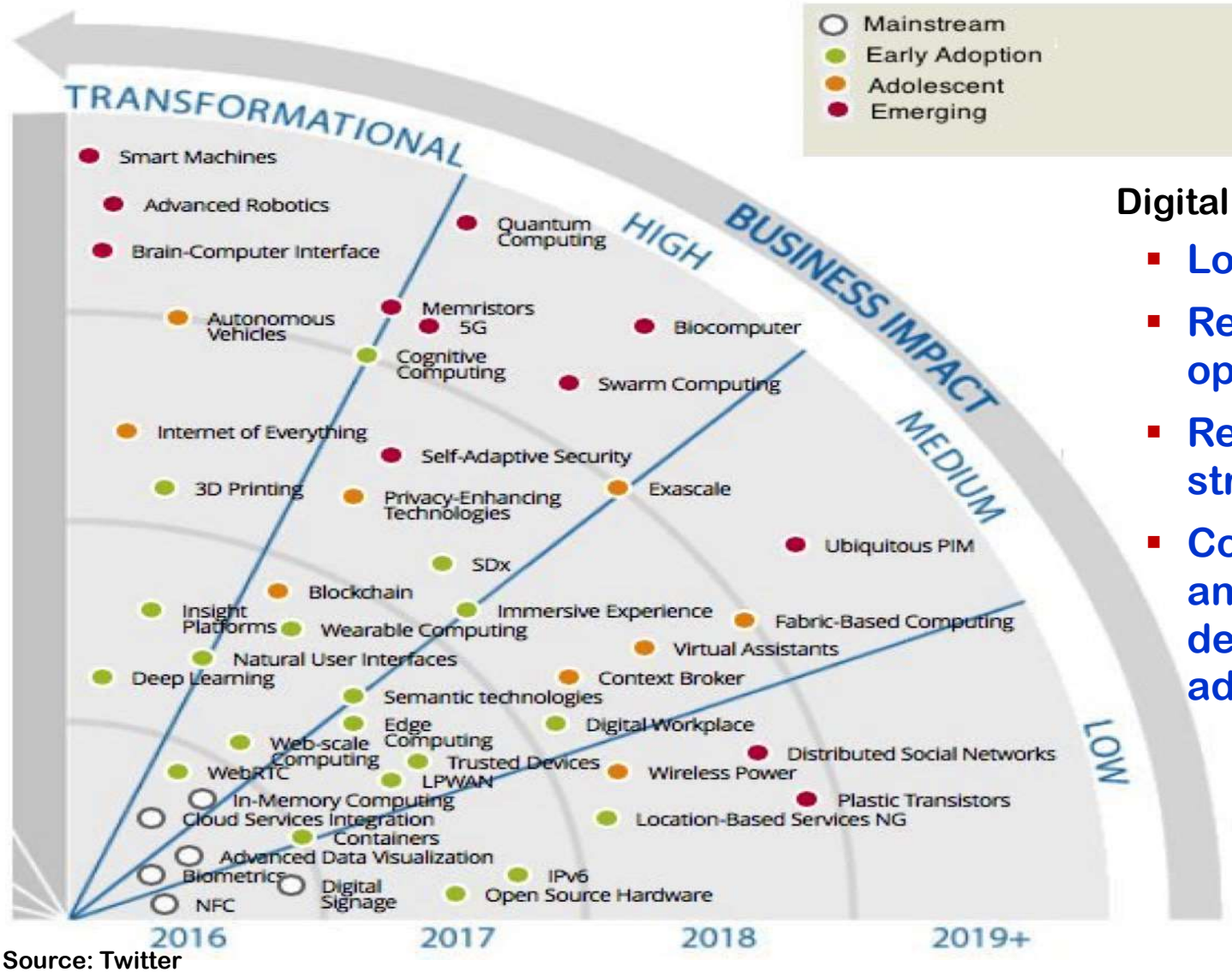
- 66% of consumers across 60 countries are ready to pay more for climate friendly products rising to 73% among millennials
- Dubai Government has pledged to make it the Happiest City of the world by 2022
- Copenhagen has pledged to become worlds first Carbon-neutral City by 2025
- Global smart cities market is expected to grow to $ 717.2 Bln. by 2023, up from $ 308 Bn in 2018
- In economic terms, all ten of the world's fastest growing cities (by GDP) will be in India
- Social and environmental considerations will become critical drivers of decision making

Directional trend in Digital Transformation – a few examples

- 7 times as many connected devices as people by 2020
- Smart home tech market to be $53.45 Bln. by 2025
- Smart fridges to advise when food items are to be bought and in what quantity
- Smart mattresses to monitor sleep patterns
- Smart baths to emit relaxing aromatherapy

Source: https://sponsored.bloomberg.com/news/sponsors/features/maersk/2020-vision/?adv=24910&prx_t=fWgFAAAAAAFEANA

Tech Developments - Map entity requirements and achieve readiness



Source: Twitter

Digital Leadership Group is expected to

- Look through the windows
- Reflect on markets, customers, opportunities
- Reverse map business strategies from market to entity
- Co-create and execute product and operating strategies to derive sustainable competitive advantages

Your journey for sustainable prosperity>

Eight Deep Technologies

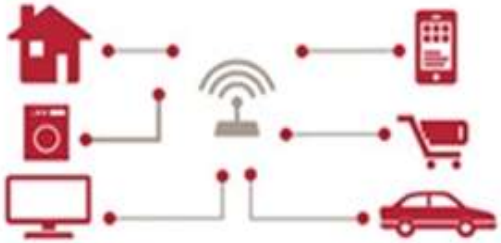
* Technologies that can simultaneously be applied

Blockchain *

Drones *

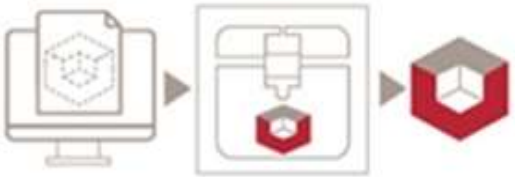
Internet of Body

Internet of Things *



Robots *

3D Printing *



Virtual reality

Augmented Reality

Artificial intelligence *

AIIoT

Mixed Reality

Internet of Body – Another emerging mega trend

IoBs have started helping mankind to live a better life when normal functioning of organs and senses start depleting. Soon proliferation of eCeuticals will be seen

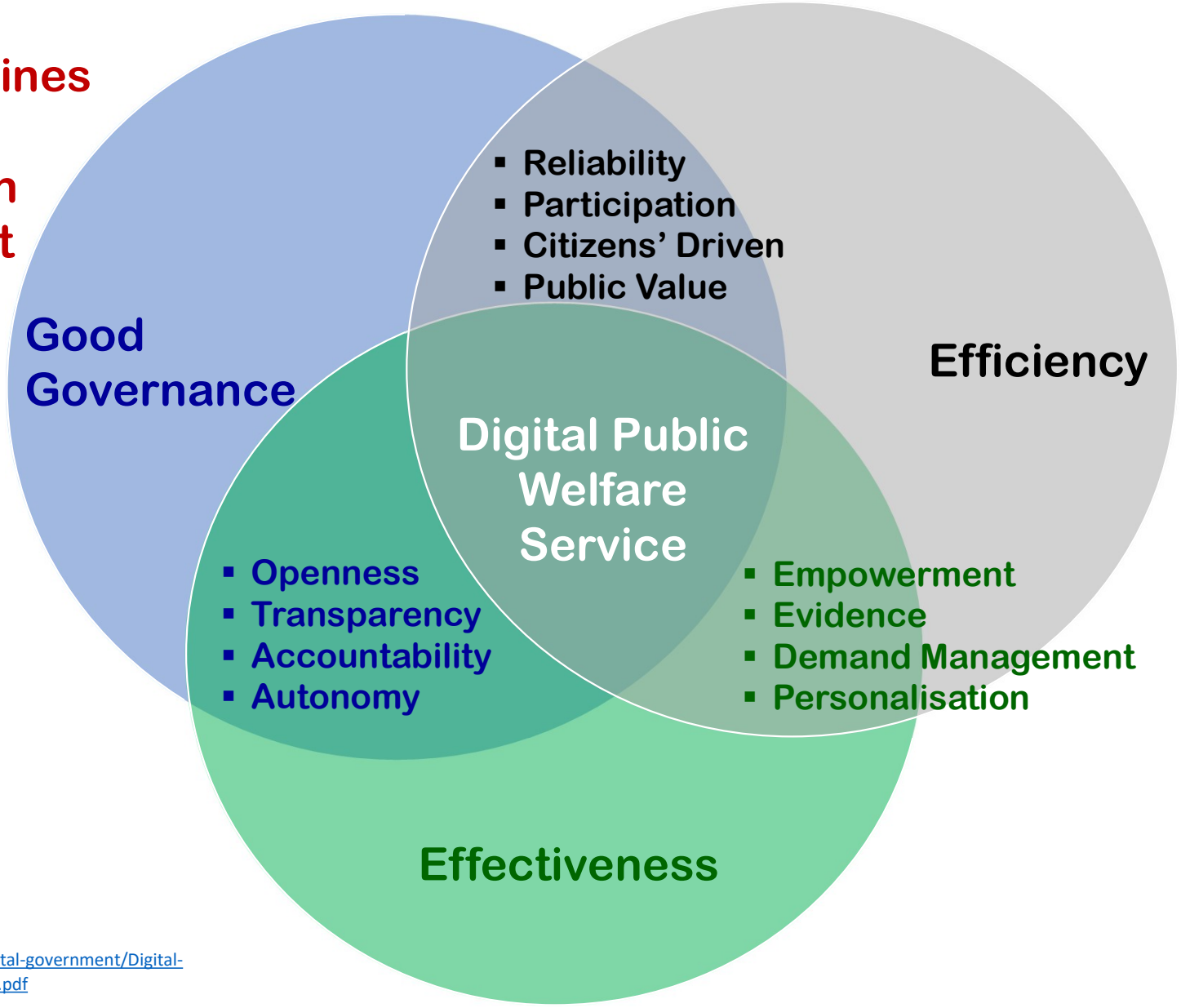
Source: https://www.slideshare.net/sujamthe/future-business-disruptions-with-internet-of-things-by-sudha-jamthe-izmir-university-march-2016


Ten Commandments for Digital Transformation
Humanity first
Redistribute power
Reduce complexities
Reimagine consumption
Go for creative destruction
Manage climate emergency
Be accountable without discrimination
Fix imbalance of humanity and technology
Enhance technology with universal altruism
Let imagination and ethics lead transformation

The Noble Prize on Economic Sciences, 2019

Their work is for helping upliftment of the poor and impoverished people of the world

OECD's Guidelines for Digital Transformation of Government Services



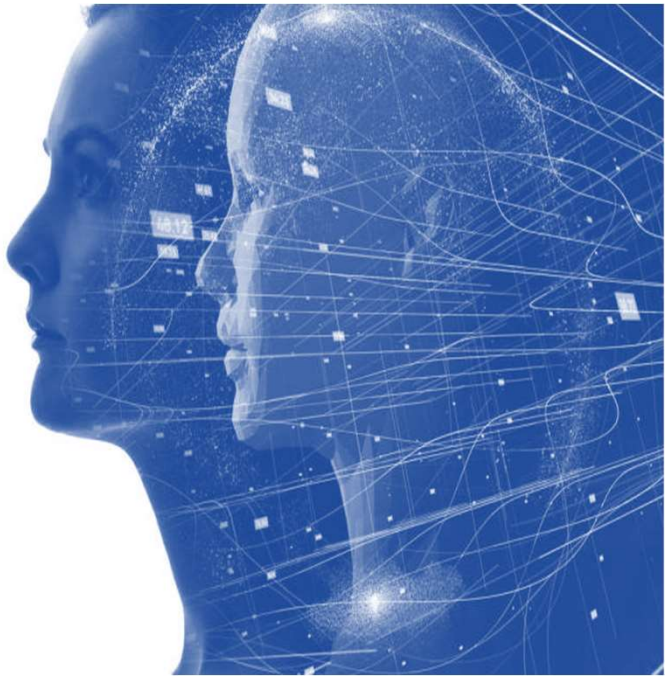
Source: http://www.oecd.org/gov/digital-government/Digital-Government-Strategies-Welfare-Service.pdf


Cognitive Intelligence and Digital Transformation

Together we shall achieve

“The future won't be made by either humans or machines alone – but by both, working together. Technologies modeled on how human brains work are already augmenting people's abilities, and will only get more influential as society gets used to these increasingly capable machines.”

Terrence Sejnowski
Professor (Computational Neurobiology)



Status of Cognitive Intelligence – Where are we?

#ANI Artificial Narrow Intelligence - Capability in specific context, e. g., weather forecasting

#AGI Artificial General Intelligence - Human level of cognitive functions across wide variety of domains. Equal capability of a human being

#ASI Artificial Super Intelligence - Entering the stage of science fiction surpassing all hitherto seen human intelligence.

Two questions?

Accepted that AI is helping to drive Sensors with IoT, which in turn is helping senior citizens to live more independently and safely at home. But,

- Will AI be able to a substitute the wisdom of our seniors by mimicking the way their brain works for dealing with issues involving emotional intelligence?
- Will that stage of #ASI ever come when AI will overtake human intelligence that is continuing to proliferate?

Status of Cognitive Intelligence – Where are we?

"Despite these astonishing advances, we are a long way from machines that are as intelligent as humans—or even rats. So far, we've seen only 5% of what AI can do."

Yann LeCun

Director of research, Facebook

What should AI Shed-off?

"While I do believe human-machines collaboration will bring many benefits to society over time, I fear that we will not have made enough progress by 2030 to ensure that benefits will be spread evenly or to protect against downside risks, especially as they relate to bias, discrimination and loss of accountability by that time."

Eileen Donahoe
Executive Director and Global Digital Policy Incubator, Stanford University
U.S. Ambassador to the United Nations Human Rights Council, Geneva

Mind the words: Bias, Discrimination, and Loss of Accountability

AI and Future of Humans - A 2018 Survey by Elon University, USA

Question to 979 Participants about views of future till 2030

- Is it most likely that advancing AI and related technology will enhance human capacities and empower them?
- Will most people be better off than they are today? Or,
- Is it most likely that those will lessen human autonomy and agency to such an extent that most people will not be better off?

Answers to the second question

- ~ 63% of these respondents, said most people will mostly be better off
- ~ 37% said people will not be better off
- 25 respondents chose not to select either option

Analysts expect that people will

- Become even more dependent on networked AI in complex digital systems
- Continue on the historic arc of augmenting lives with mostly positive results from wide range implementation of such tools
- Increasing dependence on AI and systems is likely to lead to widespread difficulties

Source: http://www.elon.edu/e-web/imagining/surveys/2018_survey/AI_and_the_Future_of_Humans_credit.xhtml

OECD Council Recommendation on Artificial Intelligence

The first intergovernmental standard on AI adopted by the OECD Council on 22 May 2019
(First document based on consensus of 36 OECD Countries)

- **Aim to foster innovation and trust in AI**
- **Promote responsible stewardship of trustworthy AI**
- **Ensure**
  - **Respect for human rights and democratic values**
  - **Inclusive growth, sustainable development and well-being**
  - **Human-centred values and fairness**
  - **Transparency and explainability**
  - **Robustness, security, safety and accountability.**

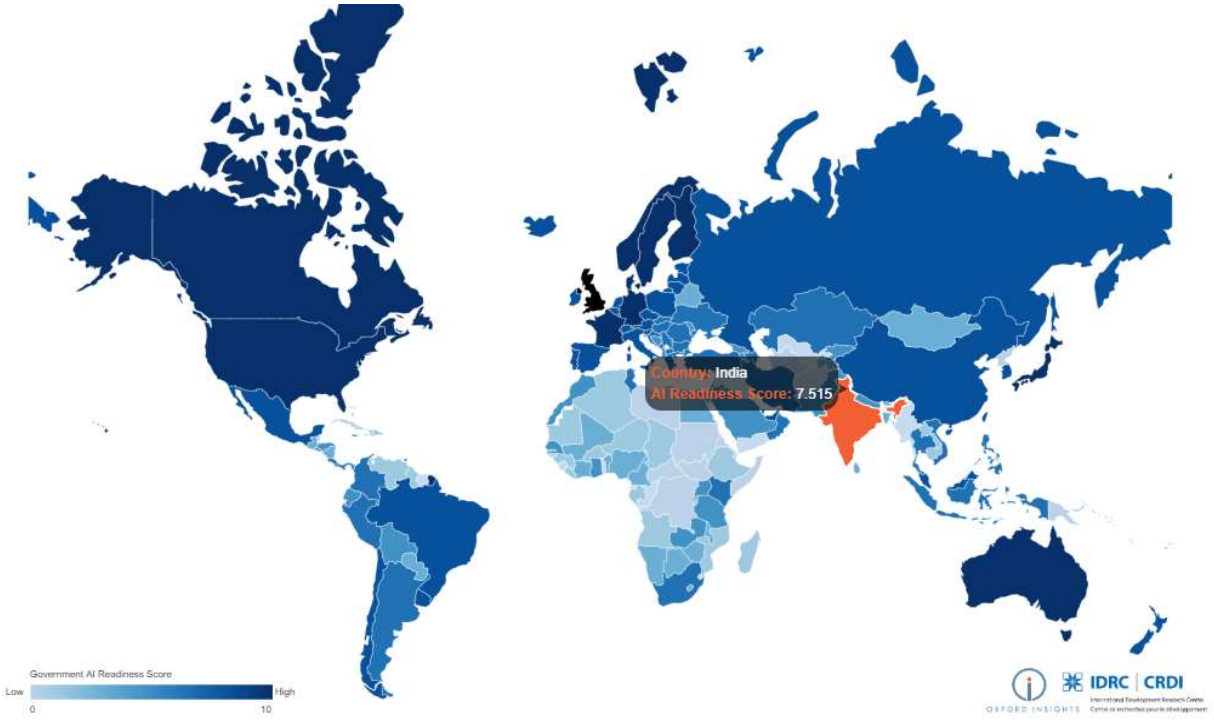
Other NonOECD countries such as Argentina, Brazil, Colombia, Costa Rica, Peru and Romania have adhered to the AI Principles

Sources:

https://www.humane-ai.eu/humaneai-oecd/
https://legalinstruments.oecd.org/en/instruments/OECD-LEGAL-0449

Government Artificial Intelligence Readiness Index, 2019

(Oxford Insights and the International Development Research Centre)



Country	Rank	Score
Singapore	1	9.186
United Kingdom	2	9.069
Germany	3	8.810
United States of America	4	8.804
Finland	5	8.772
Sweden	6	8.674
Canada	6	8.674
France	8	8.608
Denmark	9	8.601
Japan	10	8.582
Australia	11	8.126
Norway	12	8.079
New Zealand	13	7.876
Netherlands	14	7.659
Italy	15	7.533
Austria	16	7.527
India	17	7.515
Switzerland	18	7.461
United Arab Emirates	19	7.445
China	20	7.370
Israel	21	7.348

Singapore - 9.186 (1st)

USA - 8.804 (4th)

India - 7.515 (17th)

China - 7.370 (20th)

Source: https://ai4d.ai/index2019/

Findings for UNO 194 Countries

Artificial Intelligence in 2030 - A Prediction

(Oxford Insights and the International Development Research Centre)

Prediction

- AI and related technologies will add ~ US$15 trillion to the global economy by 2030.
- Countries in the Global North are better placed to take advantage of these gains than those in the Global South.
- **The risk** is that countries in the Global South could be left behind by the so-called fourth industrial revolution.
- The danger is unequal implementation will widen global inequalities

Objective

To encourage governments to be as prepared as possible to help citizens take advantage of the benefits of automation, while protecting them from its associated risks.

Source
https://ai4d.ai/index2019/

Ethical issues in AI

- **Ethics of AI**
  - Ethical quality of its prediction
  - Ethical quality of the end outcomes drawn out of that
  - Ethical quality of the impact it has on humans

- **Harm**
  - When a prediction or end outcome
    - Negatively impacts an individual's ability to establish their rightful identity (harms of representation)
    - Leading to or independently impacting their ability to access resources (harms of allocation)

Ethical issues in AI

- **What AI is: datasets, models and predictions**
  - Bias and Fairness
  - Accountability and Remediability
  - Transparency, Interpretability and
  - Explainability

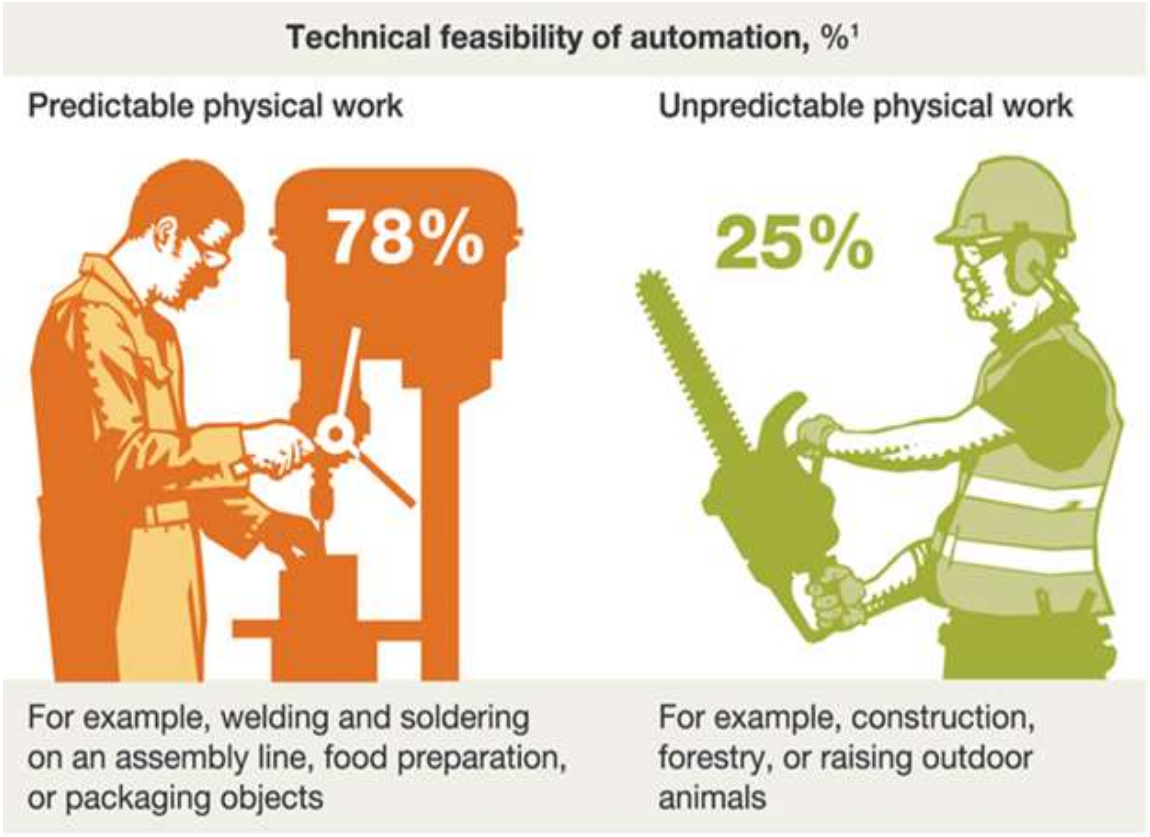
- **What AI does**
  - Safety
  - Human-AI interaction
  - Cyber-security, **Malicious use**
  - Privacy, Control, Surveillance

- **What AI Impacts**
  - Automation, Job loss, Labour trends
  - Impact to democracy and civil rights
  - Human-Human interaction

- **What AI can be**
  - Threats from human-like cognitive abilities
  - Singularity
  - Robot rights

Technical feasibility of automation – A McKinsey Study

It is more technically feasible to automate predictable physical activities than unpredictable ones



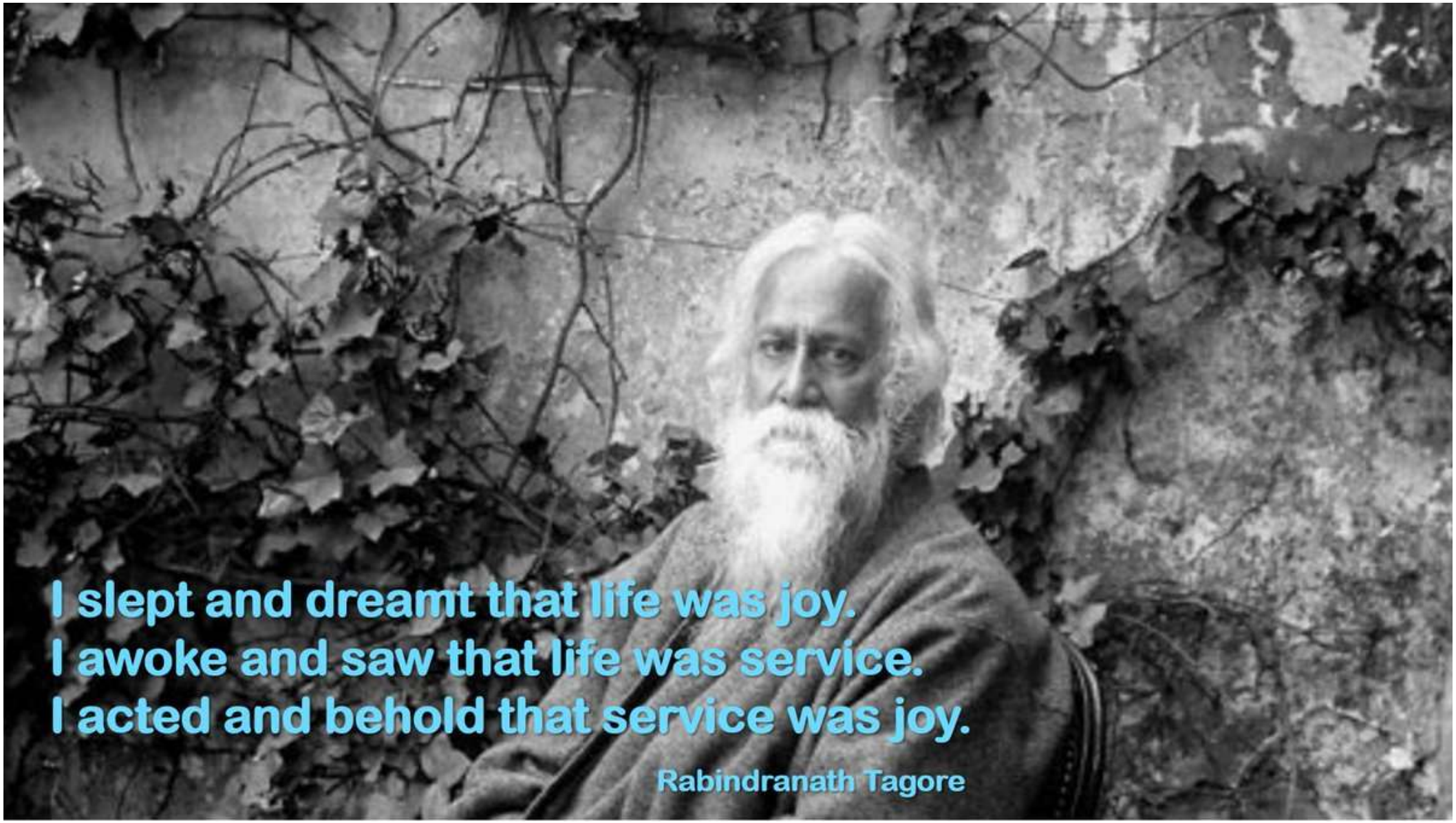
The question

How far it will be feasible and desirable go with digital transformation of 78% of the physical work using AI and RPA in India?

AI and RPA - Ethical and humane issues for solution designing

The presenter's view - Digital Scientists would certainly find solutions for 'Humanity to Continue to be the Master'

1. **Directionless** - What happens if there is no directional guidance and regulation?
2. **Legal authority** - What happens if users suffer losses due to advices from humanoids?
3. **Unemployment** - Will AI be able to generate new jobs with more thinking content?
4. **Collaboration** - What happens if RPA and robots fail to collaborate with human beings?
5. **Transition** - How to ensure transition with painless change management?
6. **Inequality** - How do we distribute the wealth created by AI, RPA and machines?
7. **Humanity** - How to ensure that human beings not become slaves of networked AI?
8. **Bias robots** - How do we eliminate bias from 'Artificially Intelligent Robots'?
9. **Security** - How do we keep AI safe from adversaries and cybercriminals?
10. **Evil genies** - How do we protect against unintended consequences?
11. **Singularity** - How do we stay in control of a complex intelligent system?
12. **Robot rights** - How do we define the humane treatment of AI?
13. **Artificial stupidity** - How can we guard against mistakes?


I slept and dreamt that life was joy.
I awoke and saw that life was service.
I acted and behold that service was joy.
Rabindranath Tagore

Humane Dimension

Technology does not have morality, emotion, ethics and value generation skill of its own. The technologist have

Success of Digital Transformation will depend on those human qualities of solution builders, leaving least scope for the user to deploy against humanity with an ulterior motive

7 Ts for Success in Technology

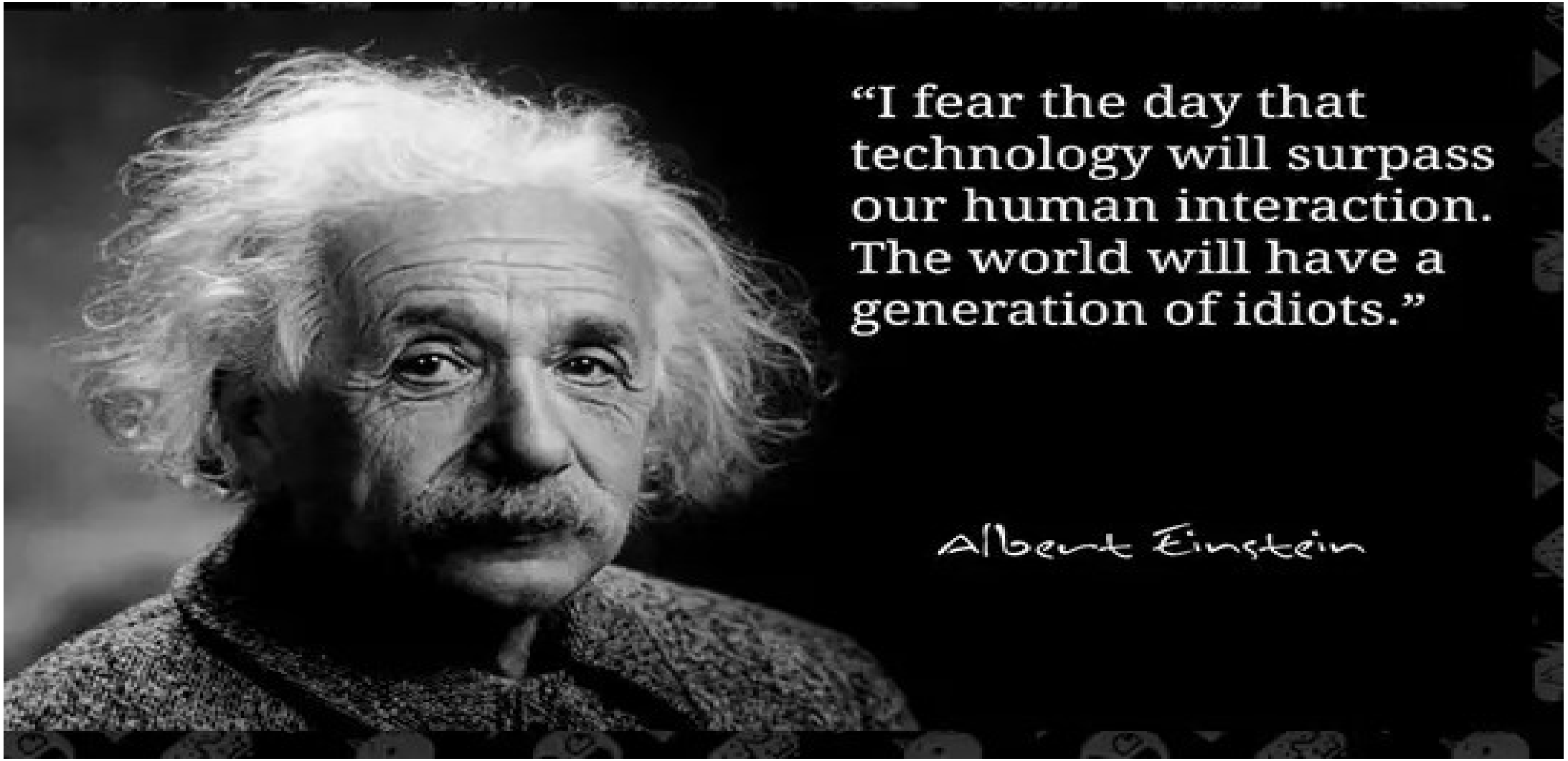
- Technology
- Talent
- Truth
- Trust
- Transparency
- Tenacity
- Timeline

7 Ps for Shared Development

- People
- Patience
- Passion
- Perseverance
- Piety
- Purity
- Penance

Source

Dr. Paritosh Basu, *"Blockchain Technology – A Prismatic Analysis'*, The Management Accountant, February, 2018. http://www.innoventionians.com/blockchain-technology-a-prismatic-analysis/



Could not validate whether he really said this. But is it true that we are seeing some symptom of it? Let me leave this question for you to ponder over …….

Thank you