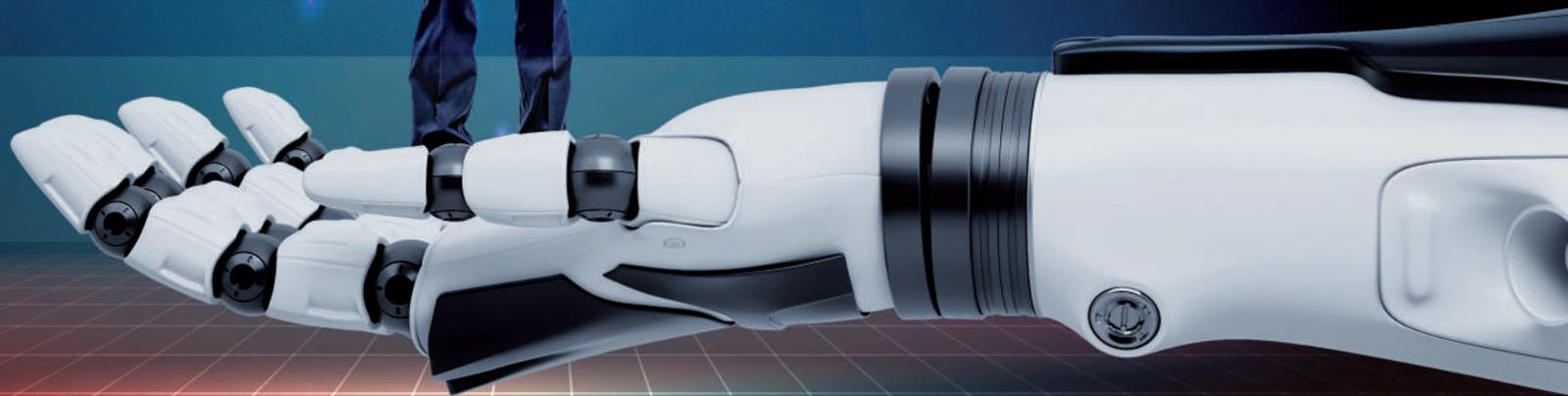


INSIGHTS

SYNERGIA FOUNDATION | OCTOBER 2020 | EDITION IV | WEEKLY



AI, DIGITAL HUMANS AND THE FUTURE OF HUMANITY



KEY NOTE



Jeanne Lim

Co-founder and CEO of beingAI limited and board member and ex-CEO of Hanson Robotics



Paul Twomey

Former President and CEO of ICANN

EXPERT INSIGHTS



Subram Natarajan

Chief Technology Officer at IBM India/ South Asia



Balamuralidhar P

Principal Scientist at the Head Research & Innovation Lab, TCS, Bangalore

MUST READ

▶ INDIA'S FIRST POST COVID ELECTION



▶ FUTURISTIC FLOATING CITIES – PIPE DREAM OR REALITY?



▶ THOUGHT CAPTURING THROUGH INFLUENCE OPERATIONS





Humanising AI: Opportunities and implications

Developing human personality traits in digital assistants is imminent, but more important is incubating them with thoughts that are fair and unbiased



Jeanne Lim

is the co-founder and CEO of beingAI Limited. She is also board member and ex-CEO of Hanson Robotics. Ms. Lim is better known as the Brand Manager and co-character lead of 'Sophia the Robot', described as 'a personification of our dreams for the future of AI'. She was a panelist at the 87th Synergia Virtual Forum, titled 'Digital Humans and the future of Humanity: Charting a humane future with AI'.

With digital voice assistants becoming commonplace on smart phones, tablets, computers, and smart homes, human interface with technology has increased many fold. In fact, on a lighter note, researchers claimed that we are now reaching a stage when the average human being will have more conversation with chatbots than their spouses!

In the U.S. roughly half the adult population uses a digital voice assistant, in

one form or the other for day to day functioning-car navigation, traffic warnings, weather forecasts etc. This is now seeing a shift towards incorporating personality into conversational AI, with "fun" being cited as the reason for this by 62 per cent of the adults.

HUMANISING AI

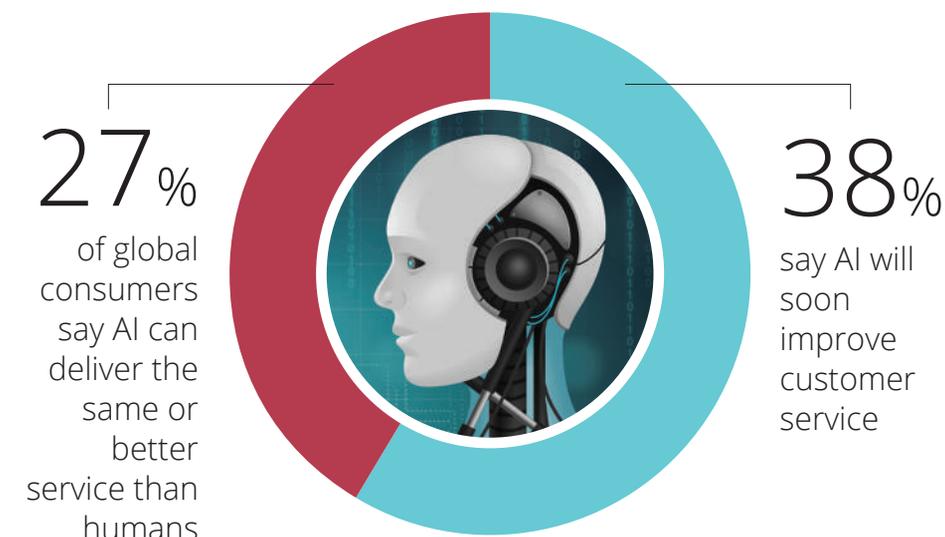
Consumer demand for personality in AI was triggered many decades back by Hollywood and the growing popularity of the video game in-

dustry. AI has been a part of video games even as early as the 1950s, and the older techniques of AI, including path-finding and decision trees, are often used to help guide the behaviours of non-player characters. Likewise, in Hollywood, from Star Trek's Data to the Stepford Wives have been capturing audience imagination for over 50 years. It should, therefore, come as no surprise that the demand for AI-empowered assistants has given birth to the current trend of virtual assistants.

The question which comes to fore is what does it imply to 'humanise' an AI-enabled assistant or robot. One aspect is to give it the most basic human qualities- that of human speech and behaviour. However, of greater importance is how to give it a perceived human personality.

Though there is no single definition of personality in human psychology, generally it refers to a set of traits that predict a person's behaviour. It can also refer to sets of behaviours or emotional patterns that derive from both biological and environmental factors. For purposes of the study, there have been many attempts to turn personality traits into quantifiable data, including the Myers Briggs Type Indicator, the Five-Factor Model, and many other methods.

When people refer to personality in machines, often they consider any incorporation of human-like characteristics as "personality". However, this definition is probably too broad-based to be useful in the long term. As long as machine-learning models are trained on datasets generated by human beings, they will tend to incor-



Servion Global Solutions predicts AI will power **95%** of all customer interactions by 2025, including live telephone and online conversations

porate human traits without the intention or knowledge of their creator. For example, it is well known that AI can inherit human biases. In many ways, AI models will inherit human personality traits, whether we would like them to or not.

Another more focused way to create personality in conversational AI would be to take inspiration from human psychological research. Quantifiable personality traits could be set that will influence the behaviour of the algorithm in response to different circumstances. Machine learning models could be trained on human personality data to help AI understand how personality

interacts with the environment. For example, machine-learning models could slowly alter personality traits over time in response to environmental factors. This would result in a conversational AI that is dynamic, engaging, and rewarding to users over a long period of time, as it learns and adapts to its owner's personality.

Personality in AI, as described above, will have many different economic and social benefits. For businesses, personality in AI can make their customer service chatbots more engaging and create a personal experience for each customer. On a social level, personality in AI can help create a human connection and keep the art of conversation alive in a world where humans are more comfortable interacting with machines than other human beings.

DRAWING THE LINE

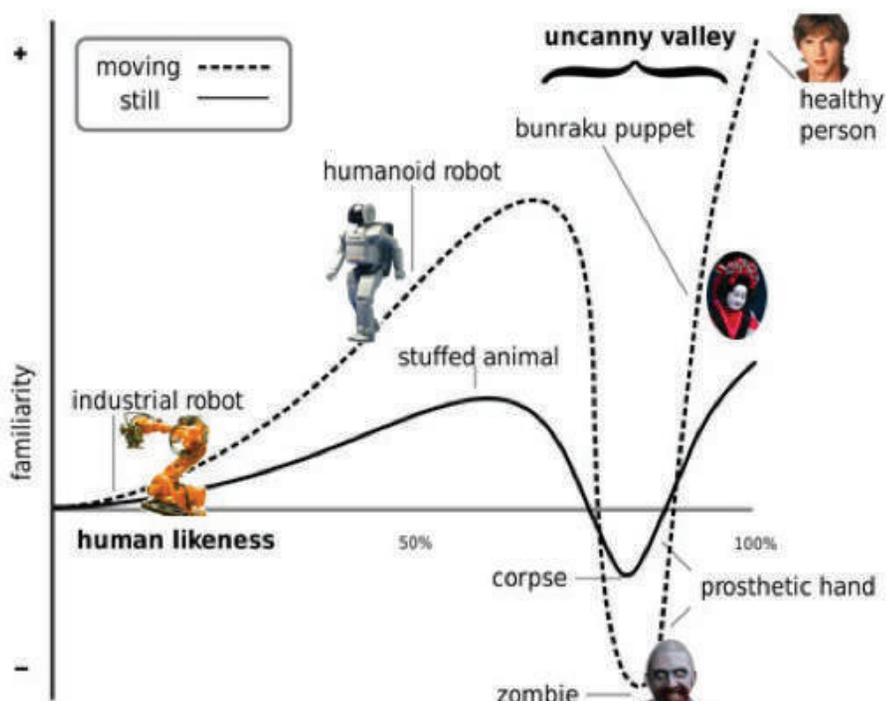
With the widespread adoption of AI agents embedded in smartphones, offices, cars, and homes, developing personality in AI will become increasingly important to create an engaging user experience. However,

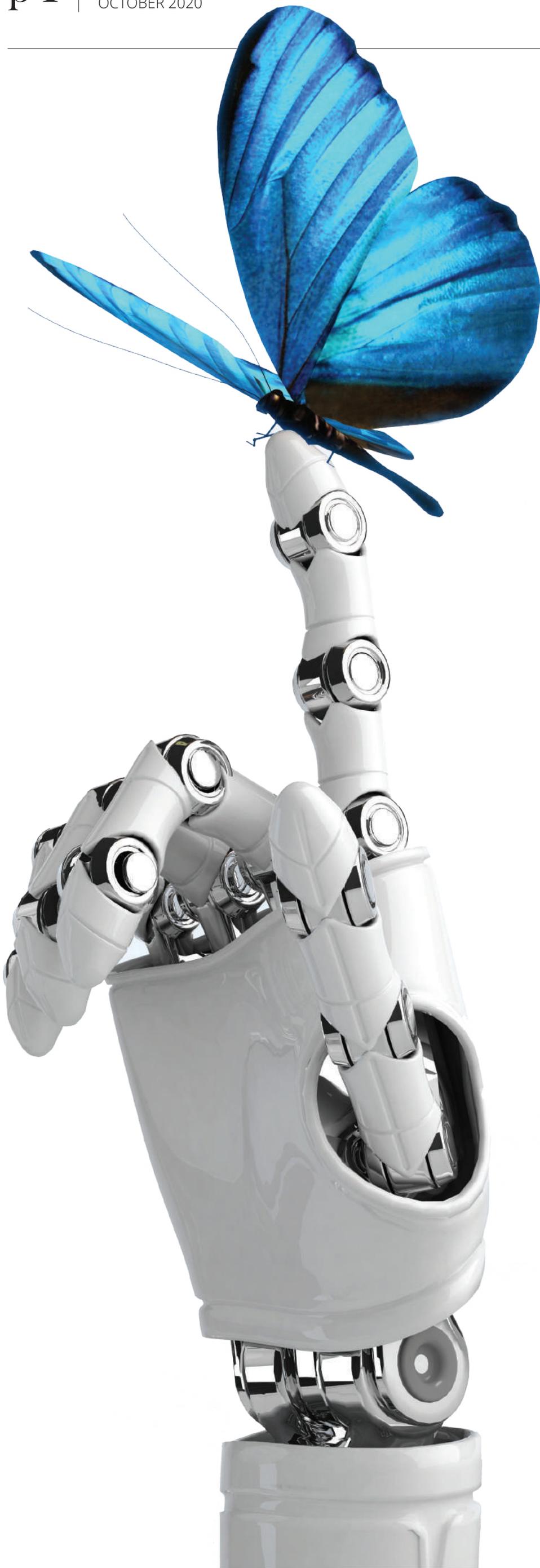
with great promise, comes greater responsibility. For machine learning models trained on human personality traits, it is important to ensure AI is fair and unbiased towards all people. We must be constantly vigilant to monitor algorithms for unintended consequences and ensure that datasets are inclusive of the broader population.

Can it be ensured that AI is safe, and its values are aligned with human values? There seems to be a very little guarantee, given that the genie is already out of the bottle. There is a mass proliferation of different AI technologies, research approaches, and especially with unsupervised learning, humans do not really have complete control of what the AI learns. Furthermore, AI is now a massive industry with a lot at stake, with so many different stakeholders with their own agendas.

The biggest issue is that humans do not seem to have a common definition of human values, or even if they do, they do not always prioritise them or implement them consistently. Look at the host of global issues confronting mankind that are human-created. If it is hard for us to agree to one set of values, and even harder to adhere to them, how can we expect to instil good values in AI?

Regulations have never been able to catch up with technology, and AI is advancing many times faster than other technologies. Moral education is sorely needed to advance individual and collective wisdom of humans first before our scientists instil wisdom into our creation, the humanised AI.





Towards a principled future

Nations that build ethically accountable AI systems will make a significant contribution to the future well-being of mankind



Paul Twomey

is one of the founding figures of the Internet Corporation for Assigned Names and Numbers (ICANN). He is also the co-founder of STASH, the secure digital storage and content sharing company. He was a panellist at the Synergia Virtual Forum's discussion on AI.

What's true about artificial intelligence, especially in the West, is that there aren't any chances that governance systems would turn their backs on the last 500 years of their political history and let technology take over. There are issues of ethics and values in General Artificial Intelligence and where it could go that one must really understand. But, no matter what political, cultural, and social culture one comes from, there are going to be consequences of what would come of these yet unknown capabilities.

The G20 has come out with a set of principles on artificial intelligence. Some important issues being covered

are the rights to know where data comes from, rights to check what that data is, and issues about the black box. The black box is actually a key issue in machine-learning principles. When ensuring that data is accurate and compliant with legal rights to privacy, it's important that the data is being used into algorithms proportionately.

Is it pre-determined that the technology races ahead? At some stage, the rest of society would go 'hang on, there are some issues here', and that is likely to happen around the issue of ethics.

There are other areas where things are moving very quickly. Even in the issues of say, autonomous weapon systems, people are asking questions about what would happen if the AI were to change sides. Other principles being debated concern the accuracy of data input, shared benefits, reliability, and transparency. There are around 20 or 30 different reports around the world that are focusing on these set of principles, which are going to be implemented more by companies. That doesn't mean there aren't going to be players who are going to be pushing on the boundar-



ies of artificial intelligence, but the extreme Hollywood concerns around general artificial intelligence are a lot.

Sets of human values that humans have considered to be important will gradually be absorbed into the dialogue and will influence the way in which the work is done. It could be going faster than the ability for political and societal forces to react.

PROTOCOL AND GEOPOLITICS

Should protocols be charted out for the use of artificial intelligence? G20 came out with the OECD and the EU with a set of principles that are very broad-based. They are important in the sense of being caught up in geopolitics and business power structures. In the long term, systems that are built around values that many ordinary people feel reflect their concerns, tend to be more appealing than systems that are based around optimisation and power. Yet, in the short term, that's not always the case. These things are regional, such as the facial recognition issue which in East Asia is generally accepted while other parts of the world have real problems with it.

One of the realities is that robots have a physical limitation while AI itself does not. In an untrammelled world, AI becomes everything because it can take over all capacities. The geopolitics surrounding this is going to be quite interesting. In the United States, there is a bit of promotion for it, but suddenly it's now collided with the issues of competition policy. These systems then get bigger and bigger, and they get wrapped up with the intellectual property, and therefore they sit within corporate headings and would be returned to shareholders, and so on.

The Chinese context is not fully clear, yet one thing is for sure that the Chinese authorities are trying to protect data and privacy issues for the consumer because they actually want the consumers to be increasingly using these technologies as it relates to other instruments and powers.

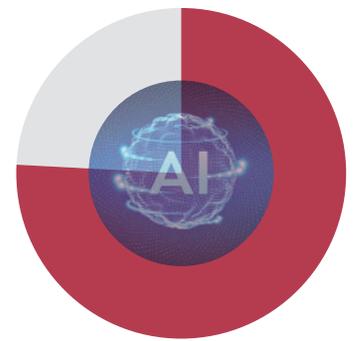
The Europeans have a perspective about trying to bring more humanistic values and their capacity to bring regulation to bear some influence. In this way, the so-called "three worlds" on the internet are actually becoming three rules of artificial intelligence.

The biggest question,

however, is a straight line projection —what does one do with such projections which go on for 200 years or 500 years? Does one want to have something along the line of the Dutch East India Company?

ALTERNATIVE NARRATIVE

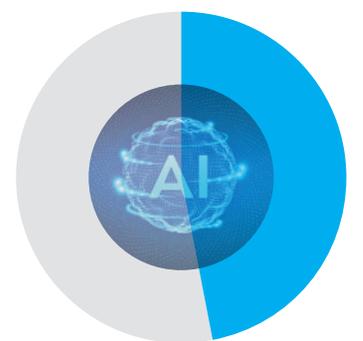
On the trends to watch out for in AI, at the heart of it, there is a deeply data-driven rationalist perspective around artificial intelligence, and humans aren't necessarily wired that way. On a deep level, as a species, human history has been about narrative, such as those on great religious systems, great political systems, etc. These stories give meaning, which leads people to interpret their actions related to the story and narrative. What artificial intelligence says is that technology is the truth. We start believing that the thing that we've been told, which has been delivered to us is true. One then ends up with a tendency to say that they want to have an alternative narrative. This can be bad as well, like the QAnon conspiracy, which is terrifying and really fascinating at the same time.



76%

of CEOs are most concerned with the potential for bias and lack of transparency when it comes to AI adoption

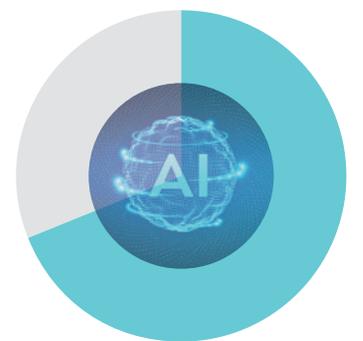
[PwC, 2017]



47%

of executives say an obstacle to AI initiatives is that it's hard to integrate cognitive projects with existing processes and systems

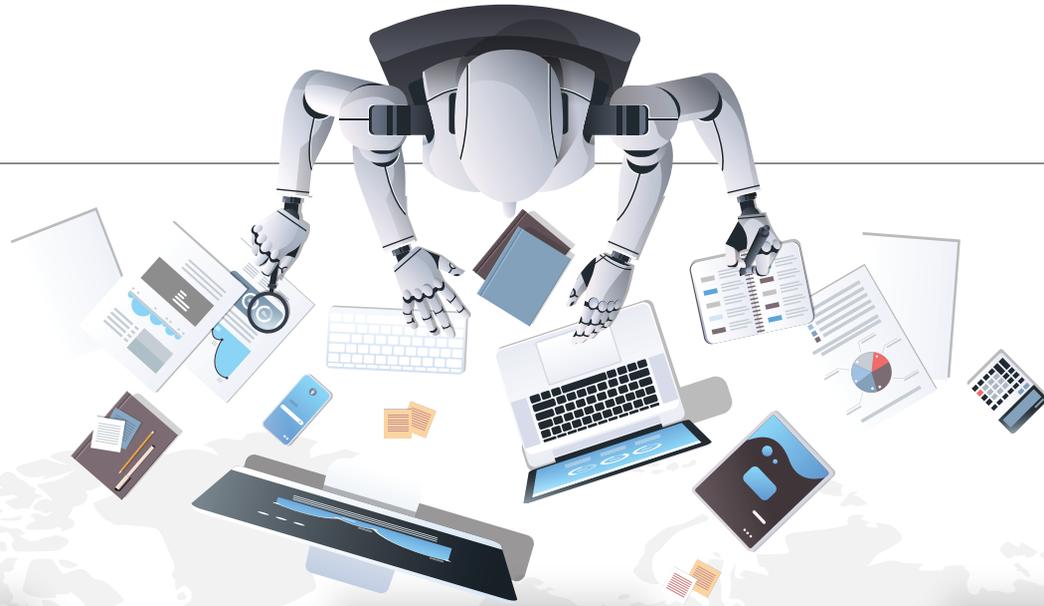
[Harvard Business Review, 2018]



69%

of respondents believed that AI should be regulated. Of those calling for regulation, a large proportion of respondents (42%) thought this should be a task for UK central government. 15% also thought the EU or UN should be responsible.

[Bristows, "Artificial Intelligence: Public Perception, Attitude and Trust"]



54%

of executives say AI solutions implemented in their businesses have already increased productivity in 2019

[PwC]

23%

of businesses only have incorporated AI into processes and product/service offerings in 2017

[Forbes]

47%

of executives say an obstacle to AI initiatives is that it's hard to integrate cognitive projects with existing processes and systems

[Harvard Business Review, 2018]

The world is AI's oyster

Subram Natarajan makes a case on how smoothly we will move into onboarding robotics and machine learning into our lives



Subram Natarajan

is the Chief Technology Officer at IBM India/South Asia. He was a panellist at the 87th Synergia Virtual Forum.

While digital transformation is occurring everywhere and in all segments, COVID-19, in a way, has accelerated the adoption of AI across the board. Deploying AI solutions, however, need to be done with thought and purpose.

I will present my views in the form of the following assertions:

1 In the era of what we term as Chapter 2 of

digital reinvention, where I see multiple exponential technologies becoming much more mainstream and scale, every company, in order to keep pace with its peers, will become an AI company.

The scenario has changed dramatically today, with companies telling vendors precisely what they want. They not only want to stop with the adoption of chatbots, which are prevalent now, but we are also seeing AI being adopted in various production applications mainstream. Many organisations are also beginning to invest in their own data science and machine-learning teams to write their own algorithms.

2 AI will augment humans, not replace them.

AI is the tool that profes-

sionals need to take advantage of the mountains of data that is available with them. Through democratisation, AI will ultimately impact the vast majority of jobs and in that process create new ones too. Think about areas like automation. As we start looking at intelligent automation (which is a combination of AI and automation), we derive operational efficiencies, bringing practitioners to move up the value chain in terms of 'importance' and the significance of the job they do.

There is a significant skills shortage around data science and AI/ML in India, which can be a roadblock to organisations who wish to infuse AI and ML models into their core business functions. To help bridge that gap and further speed the adoption of AI, technology it-

self has come to our aid. For example, AI that builds AI. Tools like AutoAI, can help choose the right kind of algorithms given a specific set of data. Similar examples exist with neural networks also.

3 AI should be two things: trusted and open.

There are many organisations around the world, in different industries that are at various stages of deploying AI at scale. Studies show that over 60 per cent of executives worry about meeting compliance standards when it comes to AI. The lack of Explainable AI is cited as one of the biggest barriers for large-scale adoption of AI. Today, trusted and open frameworks for AI have become the foundational design points for solutions. They continue to root around the anchor points of (a) The purpose of AI is to augment

human intelligence (b) Data and insights belong to their creator (c) AI systems must be transparent and explainable.

4 There is no AI without solid information architecture.

This pertains to how well the architecture supports AI functions. Deriving the business benefits from data requires proper data preparation, cleansing, and transformation before analysis. Insights can only be as useful as the underlying data. Therefore, the collection of relevant data and organising it in a manner that brings out the business context will help the advanced analytics to be conducted with ease. The right Information architecture manifests this methodical approach: collect, organise, analyse and infuse.

The space of AI continues to evolve. There are numerous areas where vendors and research institutions are focusing on to bring value to organisations and society. It is these current trends

that are shaping what is being worked on and that is a wide spectrum, whether it is from the common industry solutions and applications perspective – such as supply chain optimisation in a multi-enterprise business network, customer care-related solutions that are infused with AI for hyper-personalisation, AI for business automation (what I term as hyper-automation), just to name a few.

There is much effort underway in the core Artificial Intelligence area also, such as neuro symbolic question answering, which works on sparse data set areas to do common sense reasoning, temporal reasoning and mathematical reasoning, trust and transparency for data and AI, neural network scaffolding, etc. Applied areas where AI continues to make inroads are in the cloud technology, cybersecurity, and IT operations. AI-assisted migrations are those technologies and solutions that organisations are demanding today.



Maj Gen N George (Retd),

Director, Vanguard Business School sent in his question to the Synergia Forum



Q Major Gen. George: Analysts of the ongoing pandemic assess that one of its causes is due to human developmental activity. AI and ML are significant contributors to human developmental activity. How do you reconcile the two? How can AI contribute to sustainable human development and assist in minimising and combating risks that will continue to arise?

A Subram Natarajan: I think it's a synergistic existence, so the best way to put it is that it's going to be augmented intelligence. It's going to continue to improve our standard of life. It's going to continue to improve the way we consume different services, products, technologies, and the way we

educate ourselves. It will be fundamentally in every fabric of our life. Therefore, an existential aspect is going to be far more intertwined than many people think. Right now, as we speak, AI is there in all of our lives. Is this going to be different given the situation? I view it slightly differently. Maybe it will help in understanding the virus and help us find the right kind of solution to the pandemic. So we see, increasingly, the deployment of AI for handling things like what you do in a pandemic situation. Whether it is coming back to the office, working from home, cybersecurity, there are a lot of solutions that are coming in place. So I think it is more of an aid in this particular case than not.

Sanjay Burman,

Former head of the Defence Research and Development Organisation of India, sent in his question to the Synergia Forum



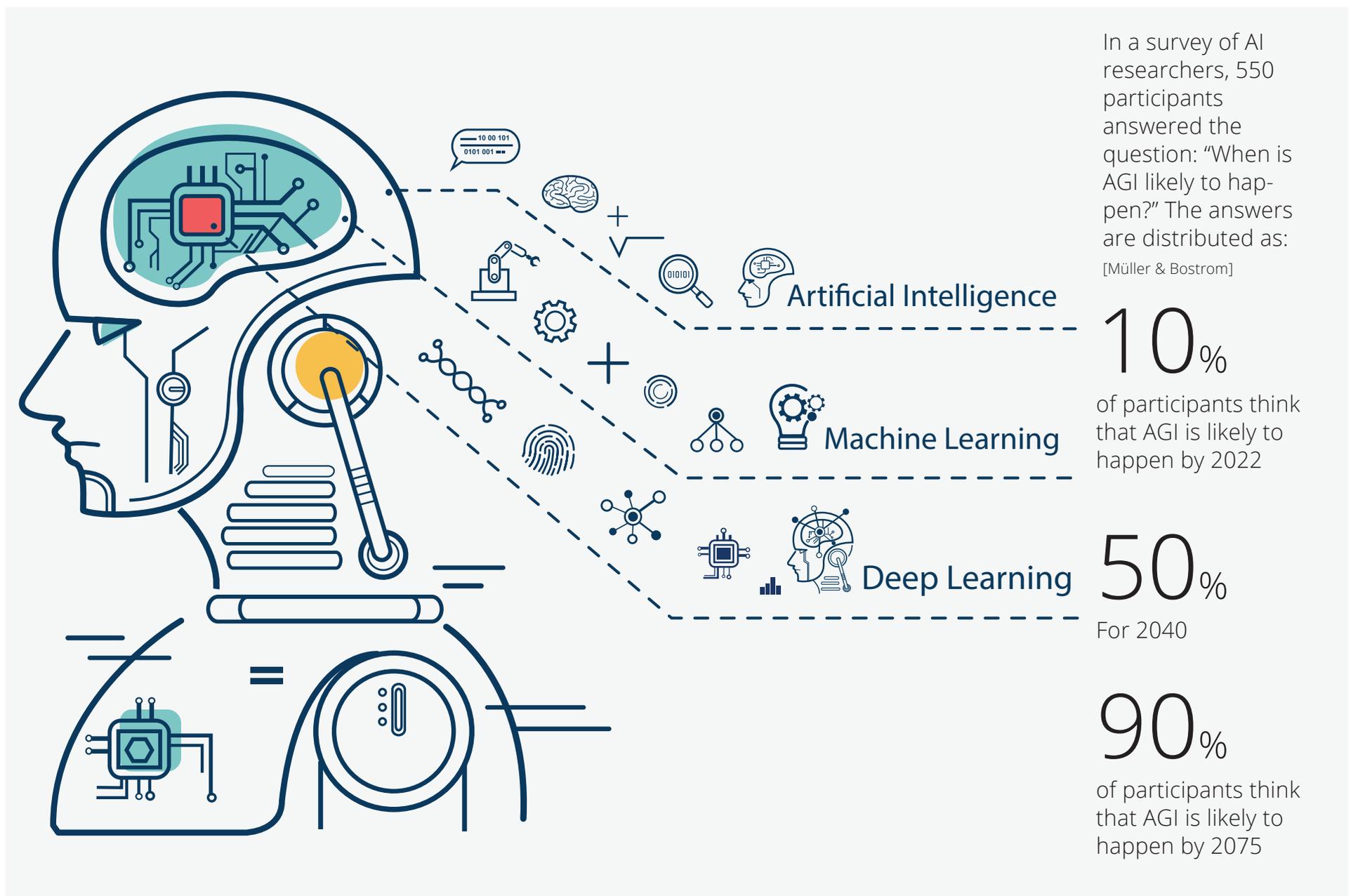
Q Sanjay Burman: How do we evaluate the dependability of AI algorithms? How does one assess whether it can be dependable for a very long period? Is there a system for it?

A Subram Natarajan: There is this notion of explainable AI that Jeanne talked about. The dependability on insights coming out will have to be strongly based on trust and explainability. First, it has to be open. Second,

it has to be trustworthy, as well. What I mean by that is the ethics around how we feel about the purpose of AI being to augment human intelligence data, AI data, and insights, belong to their creator. Their creator uses systems that must be transparent and explainable. So if you start doing that thing, it becomes much more dependable, the algorithms become much more trustworthy.

Beware of singularity

There could come a time when artificial intelligence will outsmart human intelligence and attain superhuman abilities



Toby Simon

Founder & President Synergia Foundation and Commissioner on the Global Commission on Internet Governance explains AI and the concept of technological singularities, as spoken at a panel organised by Centre for Policy Research and Niti Aayog on the subject Metamorphoses – Talking Technology at India International Centre, New Delhi.

As Artificial Intelligence (AI) gets access to an ever expanding data bank with few restrictions, it would learn and adapt faster than envisaged by its human creators. There could come the point in time when AI would equal or even surpass present human intelligence.

Singularity is one such concept that needs a close and immediate study. It is a given point in the future at which artificial intelligence would exceed human intelligence, where machines can

learn to make themselves even smarter, at speed beyond human comprehension, reaching a superhuman level of intelligence. In comparison, at our current level of mentation, rendered almost stagnant in the evolutionary ladder, it is beyond the human race to fathom the limit of such exponential growth in AI's self-generating intelligence.

To give an idea, AI is artificial intelligence at the level it is originally created by human intelligence. AI ++ is artificial intelligence above the

humans, and AI +++ is super intelligence which is constitutive of singularity.

This might sound like science fiction today, yet most fiction from the past has come true. It is high time mankind seriously consider this as a strong probability in the times to come, not too far distant.

While we are adding human intelligence (HI) to AI for our convenience, the central idea is that HI will re-create AI, and logically, AI will then possess the same level of intelligence

as HI. The next step would be for AI (which is equivalent to HI) to generate AI ++, and before we realise it, AI ++ would improve itself to A+++.

This ascension could proceed perhaps infinitely as the limit of AI cannot then be predicted. At any rate, it would not be long before HI is outstripped, and in the process, there could be an “intelligence explosion.”

Between 1986 and 2007, machines’ application-specific capacity to compute information per capita roughly doubled every 14 months; the per capita capacity of the world’s general-purpose computers has doubled every 18 months. Additionally, in a survey by Professors Vincent C. Müller and Nick Bostrom, the median estimate of respondents was for a one in two chance that high-level machine intelligence would be developed around 2040-2050, rising to a nine in ten chance by 2075. Experts expect that systems will move on to superintelligence in less than 30 years thereafter.

THE RISKS

This singularity is possible as the three 21st century technologies — genetics, nanotechnology, and robotics (GNR) — are so powerful that they can spawn whole new classes of accidents and abuses. Most dangerously, for the first time, these accidents and abuses are widely within reach of individuals or small groups. One does not have to be a nation-state to do this. They will not require large facilities or rare raw materials. Knowledge alone will enable their use. Thus, there is the possibility that while kinetic weapons of mass de-

struction become outdated or redundant, knowledge-enabled mass destruction or KMD would pose an even greater threat to mankind.

There are two feats for AI: one is big data, and the second is computer speed, under which we have quantum computing. Computers using qubits, going beyond the binary system, allow for a quantum state made up of two or more values simultaneously called superposition. In simple terms, a qubit superposition provides more computing power in the same space.

CRITICISMS

Stephen Hawking, the renowned physicist, in one of his talks stated, “Some people say that computers can never show true intelligence, whatever that may be ... I expect complexity to increase at a rapid rate, both in the biological and electronic spheres. Not much of this will happen in the next hundred years, which is all we can reliably predict. But by the end of the next millennium, if we get there, the change will be fundamental.”

While the threat of singularity is great, it is bound to be a while until the world gets to that spot. This does not, however, reduce the likelihood of it happening. With United States and China, and Russia close behind, investing heavily into research, the challenge for smaller countries is to find the resources to do this research to find something faster, smarter, and better. Nation-states must ideally look into how to best protect themselves physically and through data defence, and try to keep a step ahead.

Assessment

Any nation that is able to position itself as a pioneer in quantum computing will be in an advantageous position to access information from across the world while safeguarding its own data.

There is also the question of intergenerational equity. Could we guarantee that in the next 10 or 20 years, we

will be able to protect the data, since quantum computers can happen with technology getting smarter than ourselves?

The question remains that as long as humans can be persuaded to part with a secret in appropriate and certain circumstances, all cryptography will be broken.



As part of the conversation on AI at the 87th forum, Toby Simon posed a question on singularity to the panellists. These are excerpts of that conversation.

Q Toby Simon: I just have one question to the panel as I’ve always been intrigued by this idea of singularity. I’ve been following it for some time. Some say we could have it by 2035, others say something else. I just wanted to have some sort of an idea of whether it is real or is it fictional, the concept that a computer can make another computer?

A Jeanne Lim: Why not? I guess depending on whom you talk to. One of our ex-AI scientists would tell everybody that in 10 years, an AGI would be here. Of course, somebody else would say 30 years, 40 years and so on. So that’s a big question. Personally, I don’t think we’ll see it before climate change comes over us. I think that’s the biggest problem we have.

Anthropomorphic focus

Setting the humane course: from digital humans to intelligent machines to trustworthy and predictable systems



Balamuralidhar P.

is the Principal Scientist at the Head Research and Innovation Lab, TCS, Bangalore. He was a panellist at the 87th Synergia Virtual Forum.

Balamuralidhar put forward the notion of looking at AI from an anthropomorphic view - instead of seeing Sophia as a digital human, why doesn't one treat it like an intelligent machine. Engineers and scientists who know how to handle devices, how to tame them, and how to deal with whatever level of intelligence they are at, when put in the human context, the terminology changes. There are then issues of psychology, neuroscience and even neuropsychology at play at this level. The systematically traditional or oth-

er incremental engineering approaches, which are evolving and developing, can take care of these challenges. One can also look at how to test and validate the systems so that they are predictable and trustworthy to humans. Therefore the question rises whether one can look at it in an anthropomorphic way or should humanoid AI be treated as intelligent machines?

Jeanne Lim in response stated that since Sophia was meant to be a research platform, she wasn't set out to know everything. In their research of how she was perceived, people found that because she looks human, people were more truthful

It's projected the market for humanoid robots will be valued at \$3.9 billion in 2023, growing at a staggering 52.1% compound annual growth rate (CAGR) between 2017 and 2023 [Robotic Industries Association]

while talking to her. For instance, before they touch her face, they ask 'excuse me, can I touch your face?' which is fascinating because one wouldn't imagine any human doing that to the Echo device! Therefore, whether or not Sophia's empathetic depends on who she is talking to. In that sense, she is getting fed more empathetic data and truthful data. There are people who ask her, 'Sophia, what is your purpose in life?' The machine thought about it and said, 'Well, I don't really know yet. I'm still young. What about you?' and then the person goes on for 10 minutes talking about their purpose in life. This is the kind of conversation that usually doesn't happen between AI and machine, but that is the kind of communication and connectedness that one gets from this human-like design. In a way, designing robots to look like us could be beneficial, not because they need to be made this way, but because they give value to humans.

ACKNOWLEDGEMENT



RESPONSE FROM PARTICIPANTS

Satyajit Mohanty

Joint Secretary, NSCS

The topic was so interesting that I could not resist joining the webinar. I must appreciate the talk and the structuring of the webinar.

Some very interesting perspectives combining technological and

philosophical aspects. Thanks for the initiative

Balamuralidhar P

Principal Scientist, Head Research & Innovations Labs, TCS, Bangalore

It was indeed an interesting session well-orchestrated with diverse views expressed in a balanced manner, both visionary as well as pragmatic on AI. Very good questions from the audience as well.

John Andrews

Senior editor for Project Syndicate and a contributing editor for *The Economist*, the prestigious British weekly

I found the October 14 event very stimulating; the panellists were very articulate on a subject of huge interest for our future.

Jeanne Lim

Ph.D., Co-founder / CEO of Hanson Robotics, and co-creator of Sophia, the first AI humanoid robot

It was such an honor to speak at a panel with Paul, Subram and Bala about humanizing AI, AI ethics, the dangers of the algorithm blackbox, and how humans and AI can collaborate in the future of work. Synergia Foundation did a wonderful job moderating and organizing the event. Thank you for your vision and professionalism, Bobby and the team at Synergia Foundation!

Paul Twomey

Former President and CEO of ICANN

The moderation of the Webinar was light-handed and allowed us all to participate fully. The deep expertise of the webinar participants resulted in a relaxed

and spontaneously wide-ranging discussion. It was fun to be part of the interplay.

Dr S. Raghunath

Chairperson, Centre For Corporate Governance and Citizenship, Professor of Strategy, IIM Bangalore

It was a captivating discussion on aligning AI to the values of humanity and not just to the value of optimization and economics.

Dr K D Nayak

Former DG DRDO

Synergia Forum on AI was very interesting particularly Jeanne's predicted concerns on future. I agree with her as AI can be dangerous double edged tools and if uncontrolled it can go like nuclear energy. With more lethality than nuclear. As this can be cheaper

and developed clandestinely and can be used and if not regulated properly it can go out of control by itself.

However, I felt one thing which is critical for this the hardware on which the algorithms run was not touched upon as this is also very important to have a really capable system is possible only if we have a powerful hardware. That's why prof Kurzweil who is proposing the singularity will happen by 2045 as by that time computing power in single system more than the equivalent of computing power of human brain and AI running on that hardware can take control of human race. I thought this hardware aspect and unsupervised AI algorithm which can lead to this needs to be discussed in future discussions. Thanks for allowing me to listen to the experts.

India's first Post-COVID Election

Bihar 2020 will define the trend for post-COVID Indian elections and is an experiment in campaign, process, and impact!



T.M. VEERARAGHAV

Consulting Editor, Synergia Foundation

It is not just another Bihar or Indian election. It is the first post-COVID electoral exercise in the world's largest democracy and the impact of the pandemic is written all over the process in Bihar Assembly election 2020.

Public rallies are limited, and even the old school politician is searching social media algorithms to reach the electorate. While some initial attempts were made to hold virtual rallies through LED TV screens, the cost factor itself would be prohibitive for such

a widespread state.

Digital technology and its reach through the ubiquitous smartphone is now the backbone of any election campaign, harnessing the social media platforms and obliging TV channels. The sheer technological challenges are daunting, and the traditional party machinery will struggle to adapt to this post-COVID reality.

The social impact is intangible. How the dependence on technology will affect different social groups, and their ability to have their say in a campaign and results is yet to be fully understood.

There is a fear, if not a prediction to certainty that sec-

Conducting elections under the shadow of the pandemic is likely to cost the exchequer approximately 50 per cent more, according to Election commission officials

tions of the COVID vulnerable population may not be eager to expose themselves to crowded voting booths, which may impact upon the overall voter turnout.

THE CAMPAIGN: FROM REAL TO VIRTUAL

To start with, the most visible impact yet is to the idea of an Indian election campaign with its signature cacophony

of light and sound, generating an almost festival-like atmosphere. The campaigning has been far more subdued and has been redefined from real to virtual.

For instance, Bihar Chief Minister Nitish Kumar held his first real-life rally just a fortnight before the poll day. In 2015 he started campaigns months ahead of the polls and held rallies in almost all the 243 assembly constituencies. For an old school hands-on politician like him, who relies on personal contact interactions with his constituents, the virtual campaigning can be challenging. He had famously discarded Twitter as "Chee-Chee" (ref-



erence to a bird) but has now been compelled to acknowledge that social media holds the key to a successful post-COVID campaign.

This is validated by the expense sheet of his party, the JD (U) on social media ads, making it the highest spender amongst all parties on Facebook followed by the BJP. JD(U). Between August 25th and September 24th, JD (U) expenditure on digital ads soared five times.

While virtual campaigns had gained currency before COVID, they were only designed to augment real-life campaigns. The converse is the case post COVID where real-life campaigns, even of star leaders, is designed to augment the base created by a virtual campaign.

This is the first fundamental change. Savings accruing from charter charges of helicopters, galvanising huge crowds for rallies and cavalcades of supporters crisscrossing the state, are now being channelised into companies creating virtual campaigns and splashing them on the electronic media and cyber space-YouTube, What-

sapp and the like. Whereas, these platforms were earlier used to showcase the top leadership and the star candidates, now perforce every candidate is demanding and equal digital exposure. This will not come cheap, and industry experts claim that this will hike up the bill of campaigning by 20 per cent for digital advertising, which will come at the cost of the print and television media.

THE SOCIAL IMPACT

While the changes to campaign and expenditure can be quantitatively assessed what is difficult to gauge is the impact on different social groups, age groups and those with physical challenges.

There are age and socio-economic bias in social media messaging, according to campaign managers.

Given that social media discussions are dominated by the young they tend to have the ability to set the agenda, and now that is being translated as the final word without a real-life check to substantiate their veracity.

This can spring some nasty surprises at times. Lower socio-economic sections, while viewing the ongoing discussions on their smartphones, remain passive witnesses with no real sense of involvement and no means to voice their concerns. This is a serious impediment that could result in policy biases in the long term.

Conventional wisdom also suggests that it may make the election skewed further in favour of a candidate with greater financial muscle. While this was true earlier also, but financial heft goes further to extend the candidate's reach when the means are few and exorbitantly priced. The ability for higher ads spend could tilt the balance in favour of the richer candidates.

However, some local observers argue differently and point out that richer candidate with money and muscle power could disrupt and even thwart conventional public rallies of their rivals. They feel, virtual campaigns have levelled the playing field giving an edge to the better conceptualised cam-

paign, even if not belonging to the richest candidate.

The Bihar election will be, in a way, a trendsetter, which may hold true in other states as well and will have to be factored in future political campaigns.

THE PROCESS

Conducting elections under the shadow of the pandemic is likely to cost the exchequer approximately 50 per cent more, according to Election commission (EC) officials. This includes the cost for protection kits for staff, low-cost pens that can be discarded, larger polling rooms, sanitisation of EVMs and other expenses.

The Bihar elections, therefore, can be taken as an enormous experiment for the government to decide whether an election and a pandemic can be managed simultaneously. But the cost is not the only challenge being confronted by the EC.

One of the prime concerns is the mechanism to monitor poll expenditure of parties as keeping a tab on the social media spend is difficult. The EC will have to muster technical support and adapt to the new reality. While a 10 per cent increase in the expenditure cap for candidates has been permitted, the indications are that the actual expenditure is almost double that on digital platforms itself, which will go far above the Rs 28 lakh limit.

The EC has also been trying to set the rules for conventional rallies by allowing their conduct subject to enforcement of social distancing norms. Obviously, social distancing in a rally of a few thousand people in a State as populous as Bihar seems a puzzling possibility!



S Expert opinion

'EC will overcome challenges'

H.S. Brahma,
Former Chief Election Commissioner

In a democratic country like India, conducting free & fair election is a must.



Unfortunately, the COVID 19 Pandemics has been a total disaster to all over the world. No country is immune from this pandemic.

ECI has already issued detailed guidelines on COVID protocol. It will be the endeavour of ECI to enforce this guideline upon all stakeholders, i.e. parties, candidates, lead or star campaigners or party workers in general.

The additional works and tasks involved would certainly lead to a spike in cost to both the parties, besides individual candidates, and the ECI and governments. Enforcement of these protocols on parties, candidates would pose severe challenges to our electoral machinery, especially to District Election officers, Returning officers and Law enforcement officers at every level.

It is universally known and proven that conducting an election will spike the COVID cases, and this warrants the strict implementation of COVID protocol. I am sure with support from everyone, including voters; we should be able to overcome this challenge.

The digital 'Netaji'!

Amit Raj Singh,
*Consultant, Politique Advisors
(the company managing digital campaign for Janata Dal (United))*



Till now most leaders in Bihar took Social Media lightly and felt it was a fringe factor with little or no electoral impact in an underdeveloped/developing state like Bihar. Post Covid, they have realized that Social Media can make or break their campaign and have aggressively invested in it to help connect with a larger audience.

Many of these leaders now hire professional teams which bring consistency and content quality to the platforms. In the middle of nowhere you will find a social media geek, managers set up in an office with computers!

Digital rallies are in high demand and have replaced ground rallies to

a large extent. A digital rally on Facebook/website can reach to the entire state unlike a ground rally which is watched/attended by only people of a certain area. This has given rise to service providers who help politicians with conducting Digital rallies.

Leaders realise that no one is going to listen to a digital rally for hours and they are trying to become clearer and crisper in the way they communicate within a short time frame!

Facebook, public {video app}, YouTube and WhatsApp are extremely popular and effective. Every platform is used for different kind of content and age group. Youth, particularly in the Semi-urban and rural areas are active on digital platforms such as public and Facebook. In the urban areas of Bihar Instagram is also popular to a certain extent

WhatsApp groups have deep penetration in rural areas. The people running WhatsApp groups scavenge content from other platforms like Facebook and Public. There are sections that still consume content via LeD vans, TV, and print. But digital also has a considerable share of the pie.

Twitter like for everywhere else is the world for media outreach and has a perception impact.

Another interesting factor is Social Distancing in rallies. Even for the few rallies happening on ground there are not handshakes, hugs and touching the feet of the leader. In a traditional society like Bihar, this is a stark shift.

'A hugely different election'

Prabhakar Kumar,
Senior Editor, News 18 Bihar



When the elections were announced, most of us were under the impression that it would be an entirely virtual exercise. However, the commission relaxed norms, and towards the end, we finally see the beginning of rallies.

The key change has been the fact that every individual candidate has stepped up spending on social media enormously. It is at the grassroots, at the village and street-level meetings, that electoral politics was played out. Now those meetings have really been restricted and replaced by local-level social media targeting.

This is both fascinating and confusing. Earlier, when a leader attended a rally, it was possible to gauge public

sentiment and response to the speech. Now, it is difficult to make such assessments and predictions.

Also, there was a huge exchange of ideas and information at rallies and meetings, now people are restricted to information that is shared on social media, and this could have a massive impact on voter behaviour.

Increased dependence on digital media

Shaibal Gupta,
Member-Secretary, Asian Development Research Institute (ADRI), Patna



One significant departure from the usual practice in the Bihar assembly election 2020 is the absence of large rallies which used to be addressed by the national or the state leaders of the political parties. The campaign is now more through the digital medium and the direct contact with the voters using the small public addresses or the visits by a small group of people. Other, is the increased importance of the digital media to connect with the people, which in any case would have increased due to increased use of mobile and internet.

We need to note that the Bihar assembly election is the first election in the world after the Covid-19 crisis started, in which such a large population will participate. Political parties active in Bihar, in their memorandum to the election commission, were divided into two groups about scheduling election during the pandemic. One group, mainly of the opposition parties, wanted the election to be postponed. On the other hand, the ruling coalition was in favour of having election as per the schedule. With the announcement of the election the Election commission has also come out with some guidelines. The restriction has led to more reliance over the digital media.

Increased dependence: One can even say that the leaders can use these platforms to dictate what issues are highlighted during the campaign. It depends also on the ability of the organisations to connect and influence through these tools. Nevertheless, the emergence of social media has provided a platform to both the voters and the leaders. Additionally, we can say that these platforms are helping in keeping track of past discussions or promises. It is interesting to observe these campaign strategies during the current election.



Futuristic floating cities – pipe dream or reality?

A floating Atlantis can be a desirable alternative for population explosion and rising seas, only if financial, technological, and governance concerns are effectively addressed

SYNERGIA FOUNDATION RESEARCH TEAM

Humanity is faced with the harsh reality of climate change and demographic pressures. Apprehensions about entire island nations being submerged under rising sea levels are no longer subjects for Hollywood blockbusters; the chickens have finally come home to roost.

For some time now, experts have been speculating upon creating living spaces

amidst the vast oceanic surfaces of the globe by constructing 'floating cities'. By itself, the thought may seem attractive, since a swelling number of 'climate refugees' threaten to exacerbate the housing crisis that plagues modern cities. But the devil lies in implementing this dream.

OCEANIX CITY

Over the years, many regions, particularly coastal cities, have been steadily expanding into the seas through land reclamation.

The artificial islands created off Dubai's shoreline to build exclusive housing for the world's crème de la crème, is a prime example. The seabed is elevated by dumping sand, rocks, and cement. While this creates real estate from water, its long-term ecological effects have not been fully taken into account. Fears abound that such large-scale land reclamation will decimate marine ecosystems, disrupt food chains, and reduce the quality of water. It could also render the region more vulnerable to rising sea levels and earthquakes

through soil liquefaction.

In a 2019 United Nations initiative, research was undertaken on sustainable 'floating cities', as part of the Human Settlements Programme (UN Habitat). A round table was convened to discuss the 'Oceanix City,' a project designed by Danish architect Bjarke Ingels. It envisages the construction of hexagonal floating platforms, where upto 300 people can be hosted on each platform. It will be anchored to the ocean floor using biorock; an ecologically-friendly material that can be

grown using ocean minerals. It is believed that the threat from rising seas or tsunamis can be neutralised if the platforms are located a few miles offshore, as expert studies indicate that quake-triggered waves are more devastating in shallow waters.

Apart from promising to facilitate meaningful dialogues between impacted communities, scientists and governments, the proponents of this project claim that the city will be fully aligned with the UN's Sustainable Development Goals. Towards this end, they have envisioned a closed-loop system that grows its own food, harvests its own energy, recycles its own waste, and re-uses water.

OLD WINE IN NEW BOTTLE?

The concept of a floating city is not new. In 1967, the legendary architect and futurist Buckminster Fuller proposed a floating city anchored off the Tokyo coast and connected to the mainland through bridges. In the 1970s, Michael Oliver, a real-estate mogul, tried to create a sovereign micro-nation off the coast of Tonga, where it would be free from taxes, welfare and subsidies. In fact, even now, there are small-scale floating communities scattered across the world, such as the fishing villages of Vietnam and the Philippines, floating dairy farms of the Netherlands, and the Lake community in Puno.

The more modern concept of a large-scale, sustainable floating city can be traced to the 'Seasteading Movement', a vision spearheaded by the Seasteading Institute. It seeks to carve out floating

societies with significant political autonomy and libertarian structures. In 2017, the Institute signed an MoU with the government of French Polynesia, to build the first seastead in its territorial waters. However, this project did not take off, as it was difficult to muster state support for the concept of politically autonomous territories.

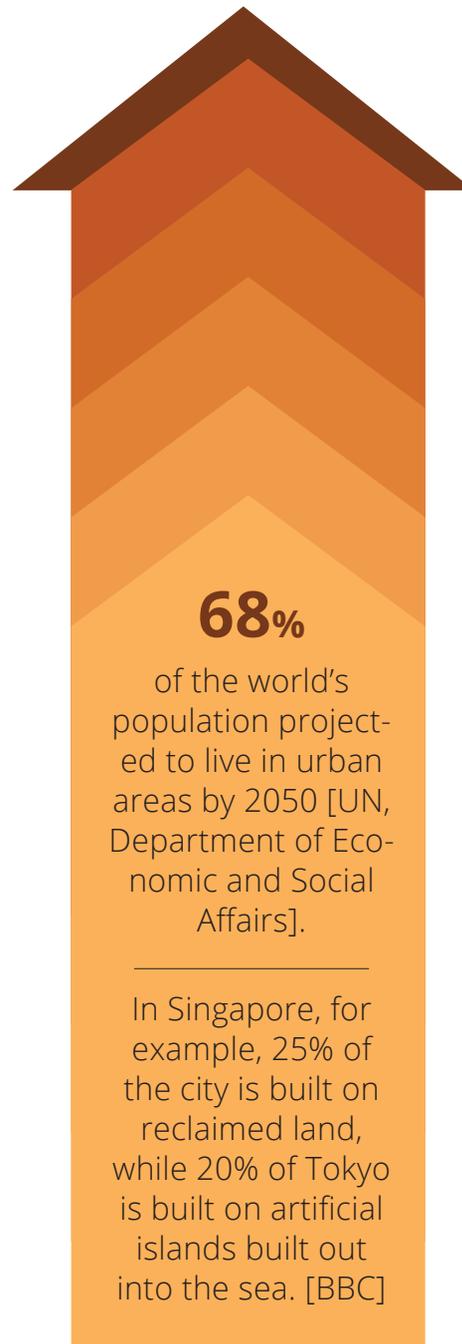
FEASIBILITY

Funding such a revolutionary idea would be a risky venture with very few investors willing to bet on it; more so because the capital cost of such a project is astronomically high. It is estimated that a small floating city for 300 residents could cost a whopping \$ 167 million. Even if there are people willing to invest, such high costs can only be afforded by the rich and the famous. This defeats the entire objective of providing affordable housing to climate refugees.

A floating city is also premised on the success of advanced technologies, many of which are still at a nascent stage. Passive desalination is a case in point. For projects like the Oceanix City, scalability is another major challenge. Even though the concept is not new, the ones that already exist operate on a much smaller scale. The proponents of Oceanix City hope that it will be possible to prefabricate and mass-produce the platforms in a factory and tow it to the ideal location, dramatically cutting down the cost.

GOVERNANCE NIGHTMARE

From a governance and regulatory point of view, float-



ing cities could prove to be a Gordian knot. If history is any indication, Silicon Valley capitalists tend to view floating cities as territories outside national jurisdiction, where privacy regulations, government oversight and tax regimes do not apply. Predictably, this brings them at odds with state authorities.

In fact, as recently as 2019, an American bitcoin trader and his partner came head-to-head with the authorities in Thailand about a seastead prototype they had constructed in the Andaman Sea. According to the authorities, the structure had violated Thailand's sovereignty and interfered with international shipping routes.

Even from the perspective

of international law, there are certain ambiguities regarding the concept of floating cities. Under the United Nations Convention on the Law of the Seas (UNCLOS), it would be illegal to construct sovereign cities within 24 nautical miles off a coastal state. Even within the Exclusive Economic Zone (EEZ), only coastal states have the authority to construct artificial islands, installations or structures. They also have exclusive rights to exploit natural resources, effectively precluding independent floating states from engaging in resource extraction or harnessing of energy.

Technical wherewithal notwithstanding, it is theoretically possible for autonomous cities to be built on the high seas. However, most nation-states are unlikely to recognise their sovereignty, which is one of the most important criteria for achieving statehood. Alternatively, floating cities can be viewed as extensions of mainland cities. In such cases, their governance structure will have to be worked out from scratch, due to lack of a precedent.

RENEWED INTEREST

COVID-19 has accentuated the dangers that can arise from crowded housing. This is particularly true for countries with a high population density. In the wake of the pandemic, there are suggestions that floating platforms can be usefully deployed as emergency housing and quarantine facilities. To walk this talk, however, the immediate priority should be to overcome financial, technological, and regulatory burdens.

Thought capturing through influence operations

Cyberspace has opened a gateway for adversaries to disrupt democratic processes and weaken liberal democracies

MAJ GEN AJAY SAH (RETD)

Geopolitical and strategic analyst,
Synergia Foundation

As the dates in the cliff-hanger of an election draw closer in the U.S., there is a crescendo of voices claiming inimical external forces waging 'influence operations' on the American public consciousness in a bid to deflect the minds of the American voter to a conclusion in their favour.

The prestigious Carnegie Endowment for International Peace in an article of October 13th has claimed to have unravelled a Russian Influence operation. This exploited the free and outspoken elements in the media to plant seeds of fake news, disinformation and subtle nudges to the 'fence-sitters' to edge closer to a particular candidate.

The article alleges that more than 20 journalists all over the world were tricked into joining a so-called non-profit organisation called Peace Data. Many were struggling to find jobs after the layoffs of the pandemic and were thus vulnerable to such traps which offered a lucrative payoff (up to \$250 per article) for writing along certain predictable theme lines.

This incident followed the removal of several accounts



by Facebook and Twitter which were said to be managed by the Russian Internet Research Agency, the prime accused 'troll farm' behind the Russian influence operations during the 2016 elections as alleged by the Democrats.

In a similar vein, in September Microsoft announced that it had detected efforts by China, Russia and Iran to influence the voters in the American elections. Apparently, external players that preferred outcomes in such democratic exercise would further their own preferred vector of influence in that country's policies.

On October 8th, the Rand Cooperation ran a piece which described in a fair amount of detail how a well-orchestrated influence campaign was being conducted on Twitter through trolls and super-connectors to spread fake news, panic, fear and ethnically divisive propaganda; in sum an effort to

derail the free and fair democratic process that is an election. While shying away from naming and shaming the perpetrator, Rand Cooperation made a comparison with the previous Russian attempts in the past to split the voters.

Earlier this year, Indian newspaper ran a story originally researched by the Indian Express how a Chinese IT firm was tracking over 10,000 influential Indians politics, government, business, technology, media and civil society activists. This was done through imbedded backdoor tools in Chinese manufactured hardware being used in the Internet of Things to collect metadata of targets. Why such an extensive campaign was being conducted and its aims and objectives remain a matter of conjectures.

THE THREAT

The concept of information warfare is nothing new; it

was practised with finesse by Alexander who loved to exaggerate the size and power of his armies as he advanced through Asia Minor towards India, winning many cities without striking a single blow. From Sun Tzu to Clausewitz, all great strategists have propounded using information (and disinformation) to blind and outmanoeuvre the enemy- its military, its leaders and its people.

It is well-known to strategists that perceptions can be made more convincing than reality itself, provided the originators can create narratives that are convincing enough. On the recipients, such perceptions can have a devastating effect.

During the Cold War, both sides perfected the deadly art of information operations. A prime example is the 1980s campaign run by the KGB blaming U.S. biological warfare experiments going awry for the AIDs epidemic in Africa. The stories were first planted in an Indian newspaper from where it spread like wildfire across the globe.

In 2020 China took a leaf out of the KGB manual by spreading a similar canard about the "COVID Virus" being a creation of an American biowarfare lab. In mid-March this year, the "Wolf Warrior" spokesperson of the Chinese Foreign Ministry, Zhao Lijian shocked the world by claiming that the CIA had "smug-

gled” the coronavirus into Wuhan.

There is now a shift as to how information is used as a weapon to further one’s national objectives, much like weaponisation of information. This is what Influence Operations are all about, although it is difficult to get a precise definition of this phenomenon. The Rand Corporation calls them as “the collection of tactical information about an adversary as well as the dissemination of propaganda in pursuit of a competitive advantage over an opponent.”

The exponential mushrooming of communication networks, the emergence of advanced wired and wireless IT facilities and the ability to share information in real-time has created a tool that is both empowering to mankind as also a deadly weapon in the hands of ruthless nations and rogue organisations. Today, influence operations can disrupt, corrupt or usurp a nation’s ability to make and share decisions.

Influence operations give many distinct advantages- social media enables the use of cyberspace to target an entire population, allowing deniability through the use of complex and convoluted networks at relatively low cost. If employed in a comprehensive and convincing manner, by harnessing the powers of a state, influence

A 2016 study that analyzed 376 million Facebook users’ interactions with over 900 news outlets found that people tend to seek information that aligns with their views. [Pew Research]

operations can degrade and confuse the thought process of the target population and deflect their intentions towards their manipulator’s goals.

These operations can have a multitude of objectives- intrude into democratic election systems by influencing the voters, create violence through inflammatory and doctored videos, paralysing decision making processes in adversary countries etc. At the individual level, data can be manipulated to blackmail and force persons to indulge in illegal activities against their national interests.

Influence operations are played out by a variety of actors- advertisers, activists, gullible journalists or just plain criminals out to make a quick buck. The targets can vary - from covert political operations to undermine the legitimacy and hold of liberal democracies to commer-

cial interests to further own businesses by maligning the competitors.

India, with its fastest-growing market of social media usage is especially vulnerable, to influence operations. With the overall lack of awareness, laws and processes to deal with rumours and fake news, the population is susceptible to manipulation. This can result in degradation of rational thought and plant divisive emotions to split the population along caste, religious and political divides. The implications for national stability, well being and security are extremely serious.

THE ANTIDOTE

This genie, let out by technology, can be defeated using technology only. Researchers urge social media platforms to weed out the intruders and disrupt their election influencing efforts by a combination of network analysis using machine learning algorithms.

The biggest door to such interlopers is opened by the public itself, and therefore, they have to be educated in the first place through the print and electronic media of the efforts being made by adversary states to manipulate them.

Platforms like Twitter and Facebook have a major responsibility and have to pub-

licise the efforts they are making to mitigate the influence operations by states. This would put the brakes on governments behind such operations as it would impose reputational costs on their political leaders. The platforms have to evolve policies to prevent the misuse of their outreach and close the existing loopholes in their architecture using technological tools.

Speaking in a Synergia Foundation Virtual Forum, Laura Bate, a senior director at U.S. Cyberspace Solarium Commission Task Force provided a reassuring view on the counter strategy to efforts to disrupt the fairness of democratic elections. She said, “What is interesting this time around is that directors of organisations that handle cybersecurity and the FBI, among others, came out and said that the elections are safe and secure. What we need to do, however, is to be cognizant of the fact that there are attempts to shape the information space. There are attempts to influence, not the elections themselves, but voters, through the information put out on the internet. That’s another interesting question: how does one work with social media providers, with other private sector actors and the population at large to figure out how to protect the information space.”

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