India@2047: Strategic Foresight As An Invaluable Tool

Abstract: This paper suggests two macro-level innovations for future-proofing governance systems to actualize Vision India@2047 through : a) Use of AI/ Big Data based Strategic Foresight to visualize alternate futures up to 2047, choose our preferred future, and develop effective strategies through back casting for achieving that future; and b) Introduction of Agile Processes for fast and flexible decision-making/ implementation, along with transformational changes in systems' capabilities and operations.

Introduction

India@2047 is a visionary initiative for making India a "future-ready" country, to become one of world's top three economies by 2047(100 years of independence), making best facilities available both in villages and cities. The elements being discussed include i) agriculture, infrastructure, industry, technology, governance as some key areas, ii) partnership with private sector, developing 3-4 global champions in every sector, iii) developing institutions, research centres, think tanks, futuristic skills etc., and iv) re-engineering government processes. Every Indian citizen, institution and entity, including leaders in government and industry, has to be passionately/ effectively involved in designing & implementation the strategy for actualizing this transformational Vision.

The fundamental challenge is: how to plan for 25 years in a world changing at a dizzying pace? How to navigate through the meta changes due to climate crisis, geopolitics/ geoeconomics, nationalism, demographic developments, stress on social fabric etc? How to handle the huge opportunities and potential threats unveiled by exponential technologies, and their impact? How to create a resilient, dynamically flexible implementation system, to respond effectively to fast-changing/ unforeseen situations? In brief, how to design and operate systems for an increasingly VUCA world and a foggy future?

Strategic Foresight

"Strategic Foresight "is a growing evidence-based discipline, which equips us to see the possible, plausible futures and understand the most probable future, through use of Foresight tools and technologies like AI and Big Data. In the process we get exposed to the transformative impact of exponential technologies, and what that means for governments, regulators and industry. We develop insights into the desirable governance policies, regulatory architectures and business strategies**.** The multiplicity of possible futures is a strong fundamental principle of Strategic Foresight, giving one the choice of creating one's own future, piercing the fogginess of future using technology. In words of **Leo Yip, Head Civil Service, Singapore,** who have been using Strategic Foresight since 2009: -

"Foresight helps us to see what the possible states of future are. Futures thinking helps us to understand how these states might unfold, and consequently how we ought to challenge our biases, blind spots and mind-sets. We then need to systematically translate these insights into strategies and policies, to take the necessary steps now to be prepared for the future." ([Foresight 2021 (8MB)](#))

The Futures Cone in Figure 1 explains the various kinds of futures. Foresight techniques like Horizon Scanning are used for 360-degree scanning of all possible relevant factors, trends etc., with special focus on identifying' weak signals" and their implications. Once all possible future

scenarios are developed, with insights into the key drivers of change, the policy makers can choose their preferred future, and develop effective strategies through back casting (coming back from the future). It is worth noting that those who believe in the "projected future" (extrapolation of past into the future, or "business as usual" future) are doomed, for disruption is the one thing certain about the future.
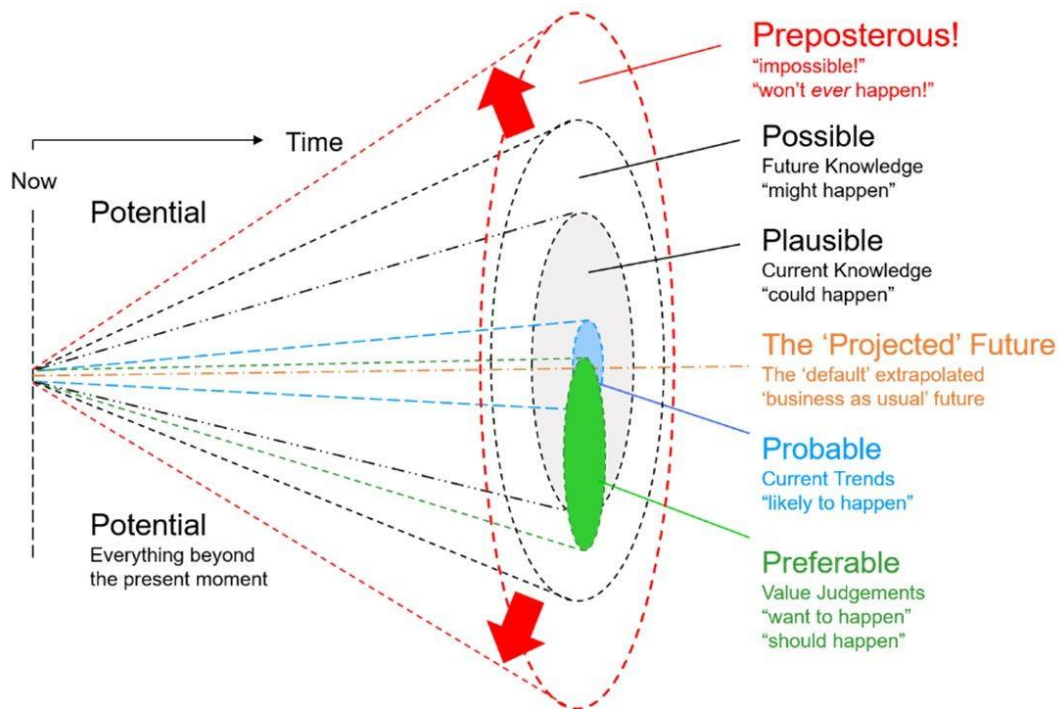

FIGURE 1: The Futures Cone

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Time Machine for Seeing the Future?

Policies, by definition, are shaped around a credible medium/ long-term perspective of the emerging/ future challenges, threats, opportunities and aspirations. Foresight is a powerful tool to help see/ visit the possible futures, almost as if you are traveling in a time-machine. Following offer a glimpse of the futures envisaged by some of the world's leading futurists: -

i) Futurist Anton Musgrave - The World in 2029:

" It is 2029. it's an amazing world, exciting different, challenging, disruptive, many, many new opportunities, and many industries really struggling ………. other new exciting innovative players really grab the new opportunities of this world……. This is a world with the human beings ubiquitously and seamlessly connected to one another, all 9 billion on the planet, through built-in wearable devices, through the portable handheld smart computing devices, or

even implants in the body....... This is a world where these connected individuals are also connected to every single object on this entire planet, and all of this real-life data information streaming at us, is allowing new solutions to mankind, solutions that address healthcare needs, education needs, energy and so forth. Healthcare advances allow us to look forward a life beyond 120 -130 years, ... Concept of retirement of our children and their children will all be forgotten. ..... Jobs as we knew them 15 years ago have almost disappeared; permanent, regular monthly salaries are an unknown feature.

ii) Historian Yuval Noah Harari - Will the Future be Human:

"We will learn how to engineer bodies, and brains and minds, these will be the main products of the economy of the 21st century, not textiles, and vehicles and weapons.... How exactly the future masters of the planet will look like, this will be decided by the people who own the data, those who control the data control the future, not just the humanity but future of life itself, because today the data is the most important asset in the world.... Data is replacing the machinery as the most important asset…….you can really summarise 150 years of biological research since Charles Darwin in three words 'Organisms or Algorithms', this is the biggest insight of the modern life sciences, that organisms are algorithms, that the virus, bananas or humans are just biological algorithms, and we are learning to decipher these algorithms..... if we are not careful it (algorithm) may give rise to digital dictatorship.

India@2030

The pace of change, ever-accelerating due to convergence of exponential technologies, however, make it difficult to visualize 2047 in one go. It might be better to take this up in two steps, starting with constructing India@2030 as the first step, and then building on that experience to visualize and actualize an aspirational India@2047.

This exercise may be initiated with developing insights into what the year 2030 would look like, in terms Foresight based visualization of i) World of 2030, ii) Technologies in 2030, iii) Life in 2030, and iv) different sectors in 2030. These would provide the context for building the necessary governmental institutions and organizations. The challenging institutions building exercise may draw on the current building blocks of i) SDGs 2030, ii) Industry 4.0, iii) Society 5.0, iv) National Policies etc.

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Reimagining Organizations Through Process-Reforms

Ministries are already developing and implementing carefully crafted strategies for implementation of Vision India@2047. Extrapolating and deep diving into their insights, including the 8 key insights generated during the Vision India@2047 Plenary Session on the Civil Services Day, 2022, may provide the initial strategic guidance.

For example, insights relating to data driven administration, collaborative approach, benchmarking governance, scrapping redundant rules and digital governance may be clubbed under a major umbrella initiative for "**Process Reforms** ", including introduction of **Agile* Processes** in the Ministries. (* Agile methodology is a type of project management process, mainly used for software development, where demands and solutions evolve through the collaborative effort of self-organizing and cross-functional teams and their customers. It is a collection of principles that value adaptability and flexibility. Agile aims to provide better responsiveness to changing business needs and therefore focuses on enabling teams to deliver in workable increments. It's tools can be suitably selected/ tailored for governmental processes e.g. "scrum" delivers through collaboration, accountability, and iterative progress, while "kanban" paints a picture of the workflow process, with an aim to identify any bottlenecks early on in the process, so that a higher quality product or service is delivered https://zenkit.com/en/blog/agile-methodology-an-overview/).

Other insights relating to enabling governance for making it citizen-centric, compounding patterns of growth, and evolving a well-structured and layered vision for next 25 years, may be operationalized by creating a matrix in terms of time lines on one axis (India@80, India@85, India@90, India@95, India@100), and major forces/ domains like economy, exponential technologies, climate change, demography, concerned Ministries' specific domains etc on the other. This will give 5 yearly snapshots of India as a whole, and also of the domains of each Ministry, and provide the basis for strategic planning, as also analyzing performances.

It would be essential to factor in the impact of emerging technologies, as also the power they offer for seeing and creating our preferred future. For example, 3 D Printing (Additive Manufacturing) will make huge number of present factories and manufacturing processes fully or partly redundant, significantly reduce the need for supply chains, transportation networks, warehouses etc, and threaten trillions of dollars of business in the manufacturing sector. Metaverse will create a whole new world for business (beginning with education, entertainment, travel, real estate etc), and disrupt number of existing businesses/ institutions. Agriculture and Food will be transformed with smart farming/ farmers, vertical farming, major shift in food habits including cultured meat etc.

Strategic Foresight, built into the agile processes, will help the concerned ministries in better understanding the drivers of change and forces impacting their operations, creating alternate future scenarios, and choosing their preferred future as per their India@2047 Vision. Back casting techniques will then be used to develop effective strategies for actualizing the Vision. This allows for desirable scenarios to be driven intentionally by stimulating the events that would make it the most probable future and curtail undesirable scenarios by tackling the components that would generate them. The strategies will include encouraging / supporting policies, technologies and factors which help achieve their India@2047 vision.

The initiatives to reimagine organizations will have to be rooted in a clear understanding of the disruptive changes organizations and Human Resources would be going through in the years to come. The current drivers of change make this disruption inevitable. Even more importantly, governance in future would require organizations and processes very different in many ways, with emerging technologies intrinsically woven into the organizational design. Human Resources (HR) may be even more different, with the need to remove the word Human from HR, since a major part of these resources may comprise units with human-machine interface/ integration and robots. Organizational issues would, therefore, need a separate deep dive for

futuristic analysis and reimagining. Any Ministry/ Department which plans on the basis of present organizational structures, processes and Human Resources will be acting against the fundamental purpose and premise of Vision India@2047 and is bound to fail in the medium-long term.

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Possible Next Steps

At a broad level, we could start by inserting in existing systems a virtuous cycle to help develop necessary skills, comprising steps like scanning for weak signals, testing that assumptions are credible/ vulnerable, exploring how external change drivers are shaping the system, developing scenarios to explore how the problem and its context could evolve, testing strategies to ensure they are robust across a range of futures, and developing new effective approaches or strategies. This will give the concerned functionaries new systemic insights, including about emerging technologies and likely future scenarios. Agile process design and implementation will be an intrinsic part of the scenario planning/strategic foresight as part of iterations. Partnership with software industry and others, who have experience of using "Agile" effectively, would be valuable.

In the Agile cycle, population may be treated as the client, and concerned Ministry, other stakeholders and futurists/forecasters are part of the mix. We create a constant conversation between client/population and the executive stakeholders through systems (in India@2047, there is already a desire to create a feedback loop from population to governance), using participatory futures techniques (Nesta: "Our Futures : by the people, for the people" Our Futures), when required. The initial feed may be the goals already decided and the outcomes of the Strategic Foresight exercises. Agile techniques may be used for implementation, with monthly milestones. At a macro level, the entire progress and process may be reviewed annually for corrective decisions and action, using Foresight and other tools.

Requisite expertise on Strategic Foresight may be harnessed through collaboration with Governments of UK, Canada and/ or Singapore, who have been using this as a policy tool for more than a decade. The following extract from " The Futures Toolkit" (Futures Toolkit) by Govt Office of Science, Govt of UK is relevant in this context :-

"The Government Office for Science (GO-Science) ensures that government policies and decisions are informed by the best scientific evidence and strategic long-term thinking. The Futures Toolkit is a key resource that policy professionals can use to embed long term strategic thinking in the policy and strategy process."

Conclusion

Vision India@2047 provides a historic opportunity to central and state governments for transforming India into the country of our dreams. A major initiative to sensitize policy makers and key governmental functionaries about the power and potential of Strategic Foresight, and related strategies for building requisite institutional/ organizational capabilities, would go a long way in helping actualization of the Vision.

Anurag Goel IAS (Retd)
Former Secretary, Ministry of Corporate Affairs
Adviser, IIT, Jodhpur