

# MOVING THE NEEDLE

*...the journey from policy to implementation...*



**JUNE 2023**



Dear readers,

While the global economies are facing an inflationary economic scenario on one end, there is also a risk of recession on the other. A complex situation ain't it! Despite that, India's endeavours continue towards further strengthening the geopolitical landscape as well as mapping, building and maintaining the required infrastructure (including natural resources as well) to be able to dodge the recession-inflation paradox.

India's aerospace and defence industry as well as the healthcare industry continue to introspect and make headway with respect to developing solutions and productive assets within the boundaries of the country. That being said, de-dollarization is a significant development that can impact global economies significantly.

In our expert section, we have Ms. Rama Devi Lanka sharing her thoughts on how emerging technologies have the potential and hence are being leveraged towards benefit the entire society and ecosystem at large.

**We endeavour to cover above key areas in this edition of the now christened "Moving the Needle".** The intent is to highlight and converse on the most critical topics in the most strategic sectors for India.



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## Interview Series by Primus Partners

In Association with **BW BUSINESSWORLD**

### 01 – Policy Square

**Policy Square** | A Primus Partners initiative to understand the more fundamental questions in policy making

Primus Partners on 28<sup>th</sup> December 2021, launched **Policy Square**, in association with Businessworld.

Policy Square, an initiative by Primus Partners, is a monthly expert interview series wherein key constituents of the public policy ecosystem – senior policy-makers, civil society members, business executives etc. – are interviewed on critical issues and

policies of national importance to explore their impact on the country and industry at-large.

The motivation for the Policy Square series is driven by Primus Partners' rich policy-regulatory knowledge, as well as experience of delivering projects across multiple sectors, with an aim to leverage this knowledge, and create a platform to table in – depth discourse.

With this initiative, we have attempted to engage with experts at various levels within the country's ecosystem. Each expert has brought in a new perspective – all towards enabling India's growth both in absolute and relative terms.

**Latest episode** features **Dr Mukesh Aghi, President and CEO USISPF**



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Primus Partners India



## 02 – Economy

### ***The Global Recession Inflation paradox - to be or not to be!***

The World Economic Outlook, in its recent published report, forecasted growth to fall from 3.4% in 2022 to 2.8% in 2023, before settling at 3.0% in 2024. The world economy on one hand appears to be moving towards a stage of acceleration in inflation which has not been seen in the last forty years with record price rises in Europe and the US. On the other hand, these economies show signs of weaker growth leading to a slowdown.

This world situation has led to a 'Global Recession Inflation Paradox' because recessions are typically associated with falling prices, as businesses produce less, and consumers spend less. This is paradoxical because the traditional economic theory suggests that inflation and recession are somewhat inversely related. This is captured in the economic concept of the Phillips curve, which suggests a trade-off between inflation and unemployment - when unemployment is high (often the case in a recession), inflation is typically low, and vice versa. However, in the current situation, global economy is experiencing a recession, but inflation is still high which is similar to what was experienced by many countries in the 1970s, with high inflation rates combined with slow economic growth and high unemployment rates.

The current global recession is being driven by several factors that are causing prices to rise, including:

- The war in Ukraine, which has disrupted global supply chains and led to higher energy prices.
- The COVID-19 pandemic, which has also disrupted supply chains and led to higher demand for goods and services.
- Government stimulus measures, which have increased the amount of money in circulation and led to higher prices.

Does this mean that the world needs to choose between spiraling prices and a recession? Definitely not! However, effective steps need to be taken to mitigate the effects of inflation and recession through monetary policies

(raising interest rate to control inflation), fiscal policies (stimulating economy through spending on infrastructure) and addressing supply chain disruptions.

The global inflation and recession situation can have an impact on the Indian economy, negatively impacting foreign investments (leading to negative impact on India's capital formation and GDP growth), unemployment (increasing layoffs), increasing cost of imports and India's trade balance. However, the country stands steady in this gloomy global scenario. India is set to be among the fastest-growing major economies in the world, contributing some 15% of global growth.

However, if need be, some of the steps that the Central Government can take to mitigate the impact of the global inflation and recession situation are-

Firstly, it is important to increase the Government spending majorly on sectors such as infrastructure, healthcare, and education. This will boost economic growth and create jobs. This will help in increasing private consumption and rural demand in the economy, major factors driving the GDP growth of the country.

Secondly, reduction in the interest rates will help in increasing the liquidity by making it cheaper for businesses to borrow money, boosting investment and growth.

Thirdly, promoting exports by incentivising the sector through subsidies and tax breaks.

It is important to note that no-one-size-fits-all solution to the problem of inflation and recession. The approach varies depending on the specific circumstances of each country or region. However, India is taking a coordinated approach to mitigate the effects of both inflation and a recession and avoid major impact from the global economy.



## 03 – Geopolitics

### ***India's global outreach – Made in India: from Australia to America!***

Geopolitical remodeling is a continuous process and changes form and structure based on strategic realities. The key to unlocking a more secure, resilient and developed future for the global community lies in global cooperation. In its bid to further strengthen its global positioning with all stakeholders, India is on a path of enhanced outreach. The foreign policy alignments have gone beyond the conventional definitions of diplomatic outreach and are exuberating new warmth.

Furthering the uptick in its global stature, India's outreach has grown both geographically and diplomatically. Some of the key regions having high strategic importance for India are discussed below.

**Central Asia (CA):** In the light of the continuing Russia-Ukraine conflict, a fresh approach has been adopted to strengthen the age-old India - Central Asia relationship. India and Central Asian republics have a huge ground of strategic priorities to cover. Central Asian reserves of rare earth metals and natural resources are a key component in India's green energy plans. The cooperation between India and CA republics is also paramount for global security and regional peace. Thus, cooperation in countering terrorism and dysfunctioning the growing network channels of radicalisation are a few important areas in which stakeholders are coming together to further their engagement.

One limiting factor that eclipses this partnership in growing its full form, however, is that of geographical connectivity where India's western neighbour is an impediment. However, true to the nature of this partnership of commitment to realise full potential, India and the CA republics have been involved in exploring alternate routes leading to the joint participation in connectivity projects such as the Chabahar Port Project, International North-South Transport Corridor (INSTC) and the Ashgabat Agreement.

**Latin America (LA):** LA is at a far distance for India and comes with additional challenges of logistical gaps and deficiencies. However, despite the above, India's relationships have grown but are yet to achieve the full potential. Trade between the two have touched an all time high of \$50bn in 2022. The future of this relationship is hopeful and optimistic in segments including energy and food security as well as skill development and resource management.

**Africa:** India's priorities in Africa are aligned to the objectives of extending infrastructure and skill development to the African nations, sharing of expertise in healthcare and wellness, improving agricultural productivity and sharing of scientific know how to optimize resource utilization, technology transfer and cooperation across sectors, especially in matters of defence and security.

The new guiding agenda for India's developmental priorities in the continent is also well-encompassed in the Kampala Principles announced by Prime Minister Modi while addressing the Ugandan Parliament. The commitment towards socio-economic development of Africa is also reflected in the growing number of developmental projects being taken up by India through grants, loans and capacity building programs.

The relationship between India and Africa, however, goes beyond the conventions of developmental and economic partnership. It rests on the strong foundation of deep people-to-people ties going back to generations, the common plight of colonial atrocities and a joint vision for a more promising and rewarding future for the masses.

The India of the future will showcase strength based on more sustainable, inclusive and consistent developments rather than strength and muscular hustling.

## 04 – Infrastructure

### *Harnessing Gati Shakti: A New Era for India's Infra and Logistics*

India is on the verge of a significant transformation, comparable to the exponential growth seen in South Korea and China in the latter half of the 20<sup>th</sup> century. These economies successfully implemented multi-modal transportation networks, lowered logistics costs and increased export competitiveness, which proved critical to their socio-economic transformation. Despite significant capital expenditure on road and railway infrastructure, India's logistics cost remains 14-18% of GDP, significantly higher than the global benchmark of 8%. What is the ongoing issue? A glaring lack of inter-ministerial coordination, which frequently results in scenarios such as digging up a newly constructed road to lay underground cables or gas pipelines. This lack of coordination not only causes inconvenience but also wasteful spending.

The Government responded to this challenge by launching the PM Gati Shakti – National Master Plan for Multi-modal Connectivity. This initiative, a digital platform designed to integrate 16 key ministries, including Railways and Roadways, aims to promote integrated planning and coordinated implementation of infrastructure connectivity projects. Gati Shakti envisions providing seamless connectivity by combining existing schemes from various ministries and state governments, such as Bharatmala, Sagarmala, inland waterways, and others.

The transformative power of Gati Shakti is visible in India's rollout of 5G technology. A fiberized backhaul is critical to meeting 5G's high-bandwidth and low-latency requirements, with a projected INR 2.2tn investment required over the next five years. The Gati Shakti Sanchar Portal has significantly streamlined the clearance process, reducing the average number of days required to dispose of Right of Way (RoW) applications from 429 in 2019 to just 5 by September 2022.

Recently the Rail Ministry mapped the alignments for Dedicated Freight Corridors using Gati Shakti's National Master Plan (NMP). They discovered that the original alignment would cut through forest and industrial areas, necessitating lengthy and costly clearance processes by overlaying these alignments on the GIS-based NMP. However, using the insights provided by the digital platform, they were able to modify the alignment to

avoid these infrastructural challenges, thereby optimising the planning stage and reducing time and cost overruns.

The conception of ULIP has its roots in NITI Aayog's vision and is part of the PM Gati Shakti National Master Plan (PMGS-NMP). ULIP integrates disparate systems from various modes of transportation, such as roads and highways, as well as ports and railways. This centralised digital framework includes, for example, the National Highway Authority of India's FASTag system, which provides real-time tracking for more than 90 lakh commercial vehicles. Similarly, the Freight Operations Information System (FOIS) and the Port Community System have been integrated to improve efficiency in rail freight and port operations.

The above examples embody Gati Shakti's overarching philosophy: a synchronised, multi-modal, technology-driven approach to India's infrastructure and logistics landscape. While the Gati Shakti Plan has ambitious targets for 2024-25, including the development of 11 industrial corridors and two new defence corridors, as well as the addition of over 200 airports, helipads, and water aerodromes, its implementation must be approached with caution. There is criticism that the plan lacks a thorough understanding of ground realities such as land acquisition and environmental integrity. The challenge of dismantling bureaucratic silos and promoting cross-ministry coordination, despite the aid of a digital platform, is not to be underestimated.

**The initiative's success is dependent on state governments' active participation, and it remains to be seen how effectively the Centre can engage them in the process. As a result, while Gati Shakti holds significant promise for synchronous decision-making and the development of a world-class, multi-modal transport network, its implementation must take into account India's diverse socio-political landscape and the need for a sustainable approach to development.**

## 05 – Technology

### ***Semiconductors in India – there is a will, but the way requires resolving the headwinds***

According to the Semiconductor Industry Association, semiconductors touched a record sales of \$555.9 bn in 2021, up 26% YoY, and a record 1.15tn semiconductor units were shipped in the same year. The semiconductors market is projected to grow to around \$ 726.73 billion by 2027. According to a report, the Indian semiconductor market is expected to reach US\$55 billion by 2026 with more than 60% of the market being driven by three industries: smartphones and wearables, automotive components, and computing and data storage.

Global major industry players include companies like Intel, Samsung Electronics, Taiwan Semiconductor Manufacturing Company (TSMC), Advanced Micro Devices (AMD), Qualcomm, NVIDIA, and Broadcom, Micron, among others. These companies engage in various aspects of the semiconductor value chain, including design, fabrication, assembly, and distribution. The semiconductor industry has experienced periodic cycles of boom and bust, and is influenced by several factors including global economic conditions, consumer demand for electronic devices, technological advancements, and government policies. These factors have highlighted the industry's importance in various sectors and have prompted companies and governments to prioritize investments and collaborations to address supply chain vulnerabilities and strengthen domestic semiconductor manufacturing capabilities.

In India, the shortage of chips has deeply affected the automotive industry, as well as the production of laptops, smart TVs and other electronic devices. Moreover, almost all of India's semiconductor demand is met through imports. The government has been prompt in taking measures to mitigate this issue and has announced several policies to that effect, including the flagship PLI schemes, Scheme for Promotion of Manufacturing of Electronic Components and Semiconductors, Modified Electronics Manufacturing Cluster (EMC 2.0), etc. This was given further momentum by approval of the Semicon India program in December 2022, with an outlay of INR 76,000 cr for

the development of semiconductor and display manufacturing industry in India. The program aims to provide financial support to companies investing in semiconductors, display manufacturing and design ecosystem.

Apart from investment promotion and policy interventions, India has also earmarked 20,000 MW (20 GW) of energy for sustainable semiconductor manufacturing. Since the announcement of the semiconductor policy on January 1, 2022; 106 Indian universities have started offering courses on semiconductors and the country had also inked an MoU with the Purdue University (US), with many more institutions expressing their interest to participate in the program. These initiatives to create a cohesive ecosystem have already started to show results. In February 2022, Vedanta and Foxconn signed an MoU to form a joint venture company that will manufacture semiconductors in India.

At a global level, the four-nation Quad, comprising India, Australia, Japan and the USA have formed a semiconductor supply chain initiative, which aims to map and identify vulnerabilities and bolster supply-chain security for semiconductors and their vital components. Put together, all these initiatives will play a positive role in making India a semiconductor hub in the coming decade.

**However, it is important to consider the fact that manufacturing semiconductors is more economical when done so in a cluster of fabs with 24x7 water and glitch-free electricity supply. It is critical to develop the required infrastructure and the skilled workforce as well as have requisite funds in place since building a state-of-the-art fab itself takes almost 4-5 years and anything less than 90% utilization of the fab can result in higher costs.**

**The recent step of accepting and considering new applications for fabs from new and existing applicants is another initiative by the Government to work towards this industry in India.**

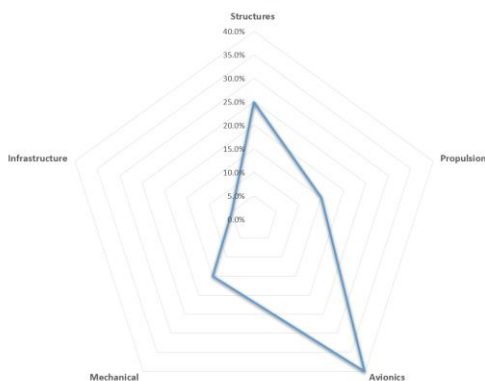
## 06 – Aerospace and Defence

### Aerospace Manufacturing – Is India ready?

Military aerospace manufacturing in India has taken significant strides. It is like the calm duck in water today. On the surface one may possibly deduce that Army and Navy segments are the ones which are relatively seeing more developments on the indigenous front.

However, like a calm duck which consistently paddles beneath the surface, the aerospace ecosystem has grown in both capabilities and capacities in the last decade or so. From small “built to print” parts, components and structures to design and development of the fifth generation AMCA – the Indian military aerospace industry has come a long way. The intent to be self reliant, coupled with the geopolitical situations and their derivatives resulting in supply chain challenges, have further added to the momentum.

If we were to look at the entire aerospace value chain, the key areas broadly add up under structures, aero engines and APUs, avionics / electronics, engineering / software and MRO with a general / indicative cost structure as under:



When it comes to each of these segments, over the years, the Indian industries have developed capabilities in two of the important areas, which account for almost 50% of the cost:

**Structures** including manufacture of detailed parts, sub-assembly and major structural assemblies. The Indian industry today manufacture empennages, fuselages, tail fins for aircraft and helicopters of Indian and global platforms.

**Avionics / electronics** where the industry has started manufacturing radars and other electronic solutions. While there are many areas of import still, the industry is today moving at a fast pace towards indigenization.

The one important area where India is currently working towards is aero engines. In APUs as well, there is a lot of successful work being pursued towards indigenization. However aero engines is one highly capital intensive and high gestation period segment where there is a lacunae and hence import dependence. Given the fact that engines are almost a third of the total life cycle costing of a fighter aircraft or helicopter, the importance of having a domestic supply chain for aero engines can never be understated.

There are important policy steps being undertaken to ensure there is no dearth in intent, effort and investments. A strategic program like for the AMCA being planned under an SPV model with private industry is an important step. Other areas including procedural and regulatory are being worked upon and are evolving at a fast pace. More importantly, areas including technology transfers from foreign industry, IPR protection and visibility of orders are three very critical areas that need to be focussed on in earnest.

**A fast growing civil aviation market is a plus given its overlap with tier 2/3 vendors of the military aerospace ecosystem and hence adding to the business case for the industry. However, more is required to be done to ensure a long term sustainable model. It is important to focus on emerging trends and leveraging them across the entire spectrum while exploring partnerships between public and private industries. Where the public industry's infrastructure and experience meets the private industry's efficiency – that is the point which will thrust the industry forward. Investments in R&D need to be further focussed. It is important that DRDO and the industry forge more partnerships and have more such DcPP / SPV models across critical areas as well.**

**To answer the question if India is ready – Yes! India is ready in few areas and in few areas works are ongoing but there is capacity and capability to absorb more and with the right frameworks, a lot of distance can be covered.**





## 07 – Healthcare

### Pharma Manufacturing in India Tackling Challenges, Unleashing Opportunities

India has emerged as a global hub for pharmaceutical manufacturing, playing a crucial role in supplying affordable medicines to both domestic and international markets. The country's pharmaceutical industry has grown rapidly over the years, fueled by a robust ecosystem of manufacturers, skilled workforce, and favorable policies.

In the years of the pandemic, India strongly built its position as a capable and reliable manufacturer of high-quality vaccines and drugs; and post-pandemic it is the largest supplier of vaccines and generic drugs, satisfying more than 60% of global demands.

The significant boost in exports in this industry has obvious economic benefits for the country and the government is investing heavily to further strengthen manufacturing capabilities. But as we move towards capturing a larger global market, there is also a need to acknowledge the immediate bottlenecks in the system that might cause India to hit a plateau in its growth trajectory. Few of the key areas that require most urgent attention include:

**Import Dependency:** India is still very heavily dependent on other countries, especially China for raw materials, i.e., Active Pharmaceutical Ingredients (API) and due to numerous reasons including geopolitical relations between the countries, there are frequent price fluctuations which have a cascading effect on the domestic pricing of the drugs. The unstable pricing also creates a confusing environment for investors and innovators.

**Lack of Innovation:** Playing off on the success of the pandemic, relatively more investment has gone into boosting the manufacturing industry and developing skilled manpower and facilities in that direction. However, further investment is required in the Research and Innovation segment as well, to make the Indian pharmaceutical Industry independent in developing products in order to gain a strong and sustainable grip on the market.

With all its challenges, there are certain areas where India has an edge over its global competitors:



**Cost Advantage:** India's pharmaceutical industry enjoys a competitive advantage due to lower production costs, including affordable labor and raw materials. This cost advantage positions Indian manufacturers as attractive partners for global pharmaceutical companies looking to optimize their supply chains and reduce manufacturing expenses.



**Generic Drug Market:** The global demand for generic drugs is steadily rising, presenting significant opportunities for Indian pharma manufacturers. India's expertise in generic drug production, coupled with its strong regulatory framework, positions the country as a key player in the global generic drug market.

Investing in research and development (R&D) capabilities can drive innovation and foster the development of new drugs in India. Collaborations between academic institutions, research organizations, and pharmaceutical companies can accelerate R&D efforts, leading to the discovery of novel therapies and expanding the industry's potential.

**The pharma manufacturing sector in India faces both challenges and opportunities. Addressing regulatory compliance, IPR concerns, and ensuring consistent quality will be crucial to maintaining and enhancing India's reputation as a reliable pharmaceutical manufacturing hub.** Embracing the cost advantage, focusing on the generic drug market, and investing in R&D can further propel the industry's growth. With a strategic approach, collaborative efforts, and continued emphasis on quality, Indian pharma manufacturing can continue to thrive and contribute to the global healthcare ecosystem.

## 08 – Financial Services

### ***INR as an alternative for economic transactions: Dethroning of US\$ is on the cards***

In recent years, the concept of de-dollarization, initiated by Moscow and Beijing, has gained significant attention. As of 2022, IMF had highlighted that central banks have not been holding greenback (dollar as reserve) in similar quantities as before, having fallen below 59% in Q4 2022 from 71% in 1999. However, interestingly this decline in dollar's share has not been accompanied by an increase in shares of other long-standing reserve currencies such as Pound sterling, Yen or Euro. Rather the shift is seen in two directions: (1) A quarter into the Chinese Yuan and (2) Three quarters into currencies of smaller countries that have played a more limited role as reserve currencies. India, as one of the world's fastest-growing economies, has long recognized the importance of diversifying its currency reserves.

**India has been grappling with a substantial current account deficit (CAD) of 2.7% of GDP during April-December 2022.** Heavy reliance on the US\$ for international trade exacerbates this deficit which can strain forex reserves. De-dollarization offers several benefits to India's economy, particularly in terms of (1) BOP, (2) reducing the CAD, (3) enabling greater autonomy in monetary policy by reducing the influence of the US Federal Reserve's decisions and (4) in mitigating impact of economic and political changes in the US on their economies.

***India has embraced a basket of approaches, identifying strategic partners to improve their BOP and increase the viability of its currency***

**RBI's Special Rupee Vostro Accounts (SRVAs)** with banks from 18 countries to trade in INR.

**Iran's Escrow Account and Currency Trade Assistance** to mitigate impact of U.S. sanctions on its trade with Iran thereby circumventing restrictions imposed by the dollar-centric global financial system.

**Russian Foreign Minister's Perspective** having expressed preference for INR over Chinese Yuan as a potential replacement for US\$, given the friendly relations and strategic benefits.

**BRICS Currency** to replace the US\$ and challenge US' dominance. A new BRICS currency can help stabilize

their economies, as increased investment in BRICS countries would lead to an increase in spending and economic growth.

**Use of a digital framework to strengthen bilateral trade and co-operation between India and Sri Lanka** in an array of dimensions – thus minimizing the net dollar requirement for imports and exports and ensuring that the Sri Lankan currency is converted seamlessly, reducing reliance on US\$.

**New Foreign Trade Policy of India** released in 2022 allowing use of INR in trade with countries facing dollar shortages or currency crises such as Malaysia, Russia, Mauritius, Iran, and Sri Lanka.

Additionally, inter-bank agreements and allocation mechanisms can also help accumulate forex from partner countries and can be used for export payments thereby reducing reliance on the US\$. A digital payment system such as UPI can facilitate currency conversions without the need to acquire dollars. Such arrangements incentivize bilateral trade and strengthen economic ties.

#### **Challenges and Way Forward**

The potential impact of this step on global financial stability requires careful consideration. Reduced reliance on the US\$ may lead to shifts in capital flows and asset prices, causing financial instability, especially in emerging markets. Creating an alternative reserve currency is challenging, and requires stability, liquidity, and acceptability. De-dollarization could increase currency exchange rate volatility, affecting trade and investment. Policymakers and market participants must monitor and manage these risks to safeguard stability and growth.

A bouquet of currencies can prove to be beneficial in stabilizing economy. Integrating digital architecture with bilateral trade, international transactions and collaborating with strategic partners can capture demand on the retail and consumer front as well. **Although, the idea to completely shed reliance on US\$ is a far-fetched dream, it holds immense benefits for India and the world. Therefore, a step-by-step approach taken by India can help INR emerge as a viable solution for financial resilience.**



# 09 – Impact

## India's first water census – Insights and learnings?

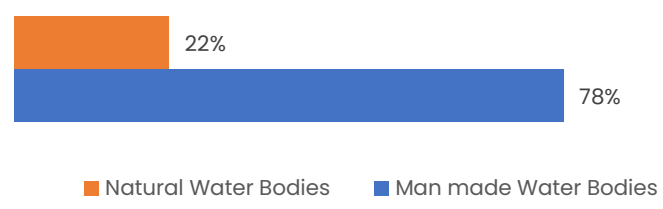
India's first water census has been released by the Jal Shakti Ministry, with comprehensive database of reservoirs, lakes, ponds, and water tanks in the country all together which covers more than 2.42 mn water bodies across country including all states and Union territories.

The main objective of this census is that the findings should help in the formulation of policies of effective, efficient, and more importantly judicious uses of water as well as its conservation. The survey reveals some very interesting findings:

Availability of water bodies



Category of water Bodies



Water bodies as per ownership



The study also reveals some interesting facts about encroachment of water bodies. Almost 38,496 out of 24,24,540 water bodies had been encroached upon. Out of these encroached water bodies more than 95% are in rural areas. This list is topped by Uttar Pradesh followed by Tamil Nadu and Andhra Pradesh. The census also discloses disparity between rural and urban areas in terms of number of water bodies.

As water is one of the most crucial aspects of survival and development and is linked with every Sustainable Development Goal, it is important that access to water for all purposes should be ensured and just. It is a recyclable resource but with limited availability and there exists a very distinct gap in demand and supply. Therefore the need to conserve, preserve, development of water bodies and management of water as a natural resource was so valuable. The census will help in bringing the policy in that direction.

The approach towards the water sector is multidimensional. On one hand government is spearheading the ambitious programme to provide safe and adequate drinking water to every household in the country by launching "har ghar nal" scheme, and on the other it is trying to rejuvenate Ganga and its tributaries, improve the safety and performance of existing dams so that water resources can be improved.

The first water census will help the authority in proper assessment, development, regulation, monitoring, and clearance of water resources.

**There is however scope in the future for such a census, which would include a wider coverage, a more exclusive categorization of water bodies, as well as, a standard interpretation guideline across the nation. Given the critical need to preserve natural resources, it is imperative that this census, at least for the initial few instances, be done every 5 years and not 10.**



**Rama Devi Lanka**

*Director - Emerging Technologies | Officer on Special Duty (OSD)*

Ms. Rama Devi Lanka leads the Emerging Technologies Wing of the Information Technologies, Electronics, and Communication Department (ITE&C) in the Government of Telangana.

Her role includes formulation and execution of policy frameworks in frontier technologies such as AI, Blockchain, Cloud, Drones, Cyber Security, and others that would create a conducive ecosystem for the growth of emerging technologies in the State.

***The Telangana Emerging Technology Division has identified agriculture, education, healthcare, smart cities, and law enforcement mobility as the five major AI focus areas. What is the reason for choosing these domain areas? Being very diverse areas, how do you ensure the right talent and time to focus on all parallelly?***

The Emerging Technologies Wings formulates frameworks for each technology such as AI, Blockchain, Drones, Robotics, etc. and it is a best practice that the government is following to identify domain areas or sectors where these technologies can be leveraged to create impact or deliver social good.

Of the 30 departments or domains that the government has, we believe that the top sectors where AI could create an impact are agriculture, education, healthcare, smart cities, and law enforcement mobility. By deploying effective AI solutions, farmers can gain increased revenue, similarly citizens can have access to better healthcare and students can have access to quality education.

Well, we have a small team. But we work with partners from across the ecosystem and leverage their expertise and experience in this technology. Today we are working on more than 15 projects with about 20 partners and these partners are from the industry, academia, foundations and startups. Some of our partners include Google, Wadhvani AI, WEF, UNDP, NASSCOM, Wells Fargo, Intel, GIZ and others.

***What are the 2-3 big learnings that have come out while using AI in agriculture in Telangana which does not really have major water bodies around it?***

Well, all of us know that data is the key to AI algorithms. When we started working, we realized that the data is not available, or where it is available, it is not of good quality. That was a big learning for us.

So, we decided to address this challenge and we are now building the Agricultural Data Exchange Platform, -



## 10 – Expert speak

ADeX, which enables the exchange of data through APIs between data providers and data consumers. We are also bringing out a data policy framework to enable government departments to share data.

Another learning is that it is kind of a trial and run scenario because there are no off-the-shelf solutions available. We identify problem statements and scout solutions that solve the problem or challenge at hand. So, we pilot the solution and if it is successful then we scale it up across the state, if not then we look out for another solution.

***Education is a key focus area across the country but to make it more inclusive and accessible, what should be the 2-3 most important action items in the coming 1-2 years?***

Yes, education and skilling are the key priorities of the government and I believe technology will play an enabling role to make education more inclusive and accessible. We would be planning to use learning platforms that increase the reach to the students.

Just to give you an example, we have launched an AI-based skill enhancement platform for students of IIIT Basara in collaboration with MyPerfectice startup. The startup is part of Telangana AI Mission (T-AIM) under its RevvUp program. This platform offers personalized learning recommendations and continuous assessment to address the challenges of engineering education.

With data insights and technology, teachers and students can bring personalized learning to students and enhance their employability quotient. This initiative aligns with our vision of increasing employment opportunities for students.

From the  
real experts

## 10 – Expert speak

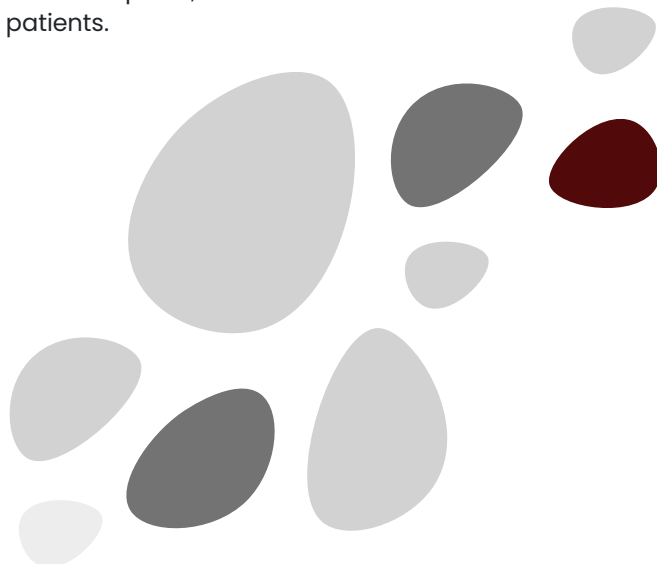
***Technology penetration in healthcare has increased multi-fold, especially post the pandemic. What according to you is the one big lacuna in technology / otherwise that India should focus on in order to be a world leader in the industry.***

The one big lacunae that India should focus on to become a world leader in the healthcare industry, is the development and implementation of interoperable health information systems. Creating a unified digital ecosystem that allows seamless sharing of patient data across healthcare providers and institutions will enhance the efficiency and effectiveness of healthcare delivery. Utilizing blockchain technology for health records would be a significant improvement in implementing this initiative.

AI and cloud can be leveraged to augment the doctors in diagnostics and treatment plans, thus enabling doctors to cover more patients.

***We have heard about AI being used in the Forest Department. Please tell a bit more on that.***

We are all worried about climate change and one of the factors contributing to the same is extinction of certain animals. Currently, the forest department monitors the animals by manual inspection. We have developed an AI tool, with the help of a startup, called Think Evolve. This tool analyzes about four million images and provides insights in to the animal movements and their behaviour spread across 20 different species of animals. The tool also identifies zones of human-animal conflicts, ecotourism zones etc. We have deployed the tool as a pilot in Jannaram and Amarabad forest in Telangana.



## About Primus Partners

Primus Partners has been set up to partner with clients in 'navigating' India, by experts with decades of experience in doing so for large global firms. Set up on the principle of 'Idea Realization', it brings to bear 'experience in action'. 'Idea Realization'— a unique approach to examine futuristic ideas required for the growth of an organization or a sector or geography, from the perspective of assured on ground implementability.

Our core strength comes from our founding partners, who are goal-oriented, with extensive hands-on experience and subject-matter expertise, which is well recognized in the industry. Our core founders form a diverse cohort of leaders from both genders with experience across industries (Public Sector, Healthcare, Transport, Education, etc.), and with varied specialization (engineers, lawyers, tax professionals, management, etc.).



### PASSION

for providing solutions to help clients achieve their goals

### RESPECT

For all and alternate viewpoints

### INTEGRITY

of thoughts and actions

### MASTERY

of our chosen subject to drive innovative and insightful solutions

### US

Representing the Primus collective, where each individual matters

### STEWARDSHIP

for building a better tomorrow



#### CHANDIGARH

2nd Floor, Netsmartz, Plot No. 10  
Rajiv Gandhi  
Chandigarh Technology  
Park,  
Chandigarh – 160019



#### BENGALURU

91 Springboard  
Business Hub 175 &  
176, Bannerghatta  
Rd,  
Dollars Colony,  
Bengaluru – 560076



#### DELHI

15, Tolstoy Rd,  
Atul Grove Road,  
Janpath,  
Connaught Place,  
New Delhi,  
Delhi – 110001



#### KOLKATA

Siddhartha Apartments  
4th Floor  
188/2, Block J, New Alipore  
Kolkata – 700053



#### MUMBAI

601, 6th floor,  
Raheja Centre,  
Nariman Point,  
Mumbai –  
400021

Write to us at: [feedback@primuspartners.in](mailto:feedback@primuspartners.in)



Primus Partners India



@partners\_primus

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