



# Moving the Needle

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



**November 2023** 







Dear readers,

In this edition of Moving the Needle, we are pleased to feature Sabeer Bhatia – a serial techpreneur whose career has been marked by various entrepreneurial endeavors beyond Hotmail. He has been involved with diverse technology startups and ventures, driven by a commitment to innovation and the desire to create meaningful change in the tech industry.

We highlight the more recent NCAER monthly economic review while evaluating the economics of conflicts beyond just monetary features. This edition also focusses on how it is important to change with the times, be it by adapting infrastructure and navigating shifting alliances or be it looking at sustainable technology. Having said that, with changing geopolitical scenarios, it is important to be self reliant when it comes to the country's security and hence having a domestic testing infrastructure ecosystem is critical.

When it comes to healthcare, it is equally important to recognize the importance, contribution and critical relevance of allied health services for a country like India. And it is equally important to ensure maximum digital penetration in Indian schools so that no one is left behind in education. And as technological evolution takes place, it is important to leverage that and tap its potential in financial services as well.

We hope you find this edition a valuable read and look forward to your inputs and suggestions.



# 01 - Primus Outreach

#LeadersSpotlight – Charu Malhotra, Co-Founder and CHRO, Primus Partners

# 02 - Economy

Economic growth – Towards maintaining status quo on India Shining!

# 03 - Geopolitics

The economics of conflicts – going above and beyond just ledger entries

# 04 - Infrastructure

Adapting infrastructure strategies in a dynamic world – Navigating shifting alliances

# 05 - Technology

Sustainable technology – more a "Need" now rather than a "Luxury" in Maslow's hierarchy

# 06 - Aerospace and Defence

Defence Testing Infrastructure Scheme - Elevating India's indigenous capabilities

# 07 - Healthcare

Unveiling the Vitality of Allied Health Sciences: Unsung Heroes at the Heart of Healthcare

# 08 - Financial Services

'Asset Tokenization: Tapping its economic Potential'

# 09 - Impact

Digital penetration in Indian government schools – still a long way to go

# 10 - Expert Speak

Sabeer Bhatia - Serial Techpreneur





# 01 – Primus Outreach (an initiative to...)

#PolicySquare	understand the more fundamental questions in policy making
#LeadersSpotlight	highlight opinions of sector / segment leaders
#PrimusPodcast	to bring together policymakers and thinkers in areas of critical importance

Policy Square, Leaders Spotlight and Primus Podcast are initiatives by Primus Partners wherein key constituents of the public policy ecosystem as well as the sector experts - 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 these initaitives series is driven by Primus Partners' rich policy-sectoral-regulatory knowledge base, as well as experience of delivering projects across multiple domains and geographies, 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.



#LeadersSpotlight

**<u>Latest episode</u>** features:

Ms Charu Malhotra, Co-Founder and **CHRO, Primus Partners** 

For the latest on Policy Square:

Subscribe to Primus Partners on

VouTube











# 02 - Economy

# Economic growth - Towards maintaining status quo on India Shining!

The National Council of Applied Economic Research (NCAER) as a monthly exercise carries out reviews of the economic and policy developments in India while also monitoring and highlighting the impact of global developments - all through a series of high frequency indicators.

Indicators	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23
Agriculture								•					-							•					
Fertilizer Sales: Urea	-2.4	-31.1	-22.0	-5.3	0.1	22.7	50.6	64.3	17.3	5.5	14.3	15.0	-3.3	16.5	26.3	2.4	15.1	4.3	-6.1	-16.6	4.3	0.5	-8.5	-2.8	
Industry							0.000	1250410											730/00						
IIP Manufacturing	4.27	3.33	0.31	0.58	1.9	0.2	1.4	5.6	20.7	12.9	3.1	-0.5	2.0	-5.8	6.7	3.6	4.5	5.9	1.2	5.2	5.8	3.1	4.6	9.3	
IIP Core	5.4	8.7	3.2	4.1	4.0	5.9	4.8	9.5	19.3	13.1	4.8	4.2	8.3	0.7	5.7	8.3	9.7	7.4	4.2	4.6	5.0	8.3	8.0	12.1	
PMI Manufacturing	53.7	55.9	57.6	55.5	54	54.9	54	54.7	54.6	53.9	56.4	56.2	55.1	55.3	55.7	57.8	55.4	55.3	56.4	57.2	58.7	57.8	57.7	58.6	57.5
PMI Services	55.2	58.4	58.1	55.5	51.5	51.8	53.6	57.9	58.9	59.2	55.5	57.2	54.3	55.1	56.4	58.5	57.2	59.4	57.8	62.0	61.2	58.5	62.3	60.1	61.0
Automobile Sales: 2-wheelers (excluding EVs)	-17.4	-24.9	-34.4	-10.8	-21.1	-27.3	-20.9	15.4	255.3	24.0	10.2	17.0	13.5	2.3	17.7	3.9	5.0	8.8	9.0	16.5	17.4	1.7	-7.2	0.6	0.8
Natural Gas Production	26.5	24.7	23.1	19.5	12.2	12.8	7.5	6.6	6.3	1.3	-0.4	-1.0	-1.7	-4.1	-1.0	1.9	4.0	1.9	2.4	-2.9	-0.1	3.4	8.3		
Crude Steel Production	9.0	6.4	2.8	2.0	6.4	8.6	6.1	8.8	18.4	5.8	2.9	0.6	1.8	2.6	5.5	1.6	2.6	2.4	2.7	7.7	5.9	13.6	13.7	17.4	16.7
Electricity Supply	0.2	3.3	2.5	3.4	1.9	4.6	6.5	12.8	24.2	16.4	3.7	2.0	12.9	1.0	11.0	11.7	13.4	9.7	-1.3	0.1	0.9	5.9	12.3	15.8	9.2
Services									200000	0.000000							-					-200			
Rail Passenger Traffic	646.1	446.3	210.3	111.0	46.3	43.6	52.9	116.1	478.0	237.6	168.6	113.6	87.6	62.2	51.1	40.7	64.5	29.8	20.5	20.2	17.7	12.5	10.3	9.4	3.9
Rail Freight	3.6	8.4	6.2	7.2	7.7	6.6	6.7	9.4	14.6	11.3	8.3	7.9	9.1	1.4	5.2	3.1	3.9	3.6	3.8	3.5	1.9	-1.9	1.5	6.4	6.7
Air Passenger Traffic	82.7	75.5	71.2	59.1	-8.7	4.7	44.2	95.3	502.4	288.1	127.4	73.1	61.6	40.0	21.8	23.1	101.0	64.4	27.0	25.5	19.0	20.5	25.8	23.2	19.4
Air Cargo	14.9	16.5	6.2	6.9	0.5	-2.8	0.3	2.3	13.8	13.9	6.1	-1.2	-0.5	-14.5	-2.3	-5.9	-3.7	2.1	-0.9	0.03	-0.3	-0.8	-1.2	6.9	-0.3
Trade																									
Merchandise Export	22.7	43.4	34.6	44.3	27.9	34.5	26.4	29.1	20.8	30.2	8.1	10.9	4.8	-12.1	0.6	-12.2	-6.6	-8.8	-13.9	-12.6	-10.2	-22.0	-15.9	-6.9	-2.6
Services Export	25.0	22.8	21.0	38.8	24.5	19.4	29.6	33.2	40.7	32.6	20.2	24.3	29.7	24.6	26.9	20.4	29.6	28.8	13.1	7.4	7.7	0.7	16.8	3.8	0.5
Fiscal																									
Gross Tax Revenue (Centre)	49.6	16.5	18.2	24.0	-4.4	17.6	19.8	36.5	20.1	12.8	33.3	-7.7	14.5	20.8	-3.8	0.8	13.5	4.5	16.8	-6.1	4.4	11.3	1.5	95.2	
Goods and Services Tax Revenue	22.5	23.7	25.3	12.7	15.5	17.6	14.7	18.5	37.2	55.8	28.0	28.2	26.2	16.6	10.9	15.2	12.7	12.4	12.7	11.6	11.5	11.7	10.8	10.8	10.2
Banking																									
SCB bank Credit: Total Outstanding	6.7	6.8	7.0	8.2	7.1	8.1	8.6	10.1	11.1	13.3	13.4	14.3	15.3	16.6	16.0	14.9	16.3	15.5	15.0	15.9	15.4	16.2	19.7	19.8	
SCB bank Credit Non-food: Personal Loans	13.3	12.8	12.7	15.1	12.8	12.5	12.6	14.4	16.3	18.1	18.7	19.4	19.4	20.1	19.6	20.0	20.4	20.4	20.6	19.4	19.2	20.9	31.7	30.8	
SCB bank Credit Non-food: Agriculture	10.6	10.8	10.5	14.5	10.4	10.5	9.9	10.6	11.7	13.0	13.2	13.4	13.4	13.6	19.0	15.8	14.4	14.9	15.4	16.7	16.0	19.7	16.8	16.6	
SCB bank Credit Non-food: Industry	1.7	3,3	3.6	7.8	6.9	7.4	7.5	8.0	8.8	9.5	10.5	11.4	12.6	13.6	17.0	13.8	8.7	7.0	5.7	7.0	6.0	8.1	5.8	6.7	
SCB bank Credit Non-food: Services	1.2	2.8	2.9	10.4	6.0	6.3	8.7	11.2	12.7	12.8	16.5	17.2	20.0	22.5	29.2	26.2	21.5	20.7	19.6	21.6	21.4	26.7	23.1	24.7	
Financial Markets																									
NIFTY 50 Index	56.6	51.8	31.0	24.1	27.2	15.6	18.9	16.9	6.4	0.4	8.9	3.7	-3.0	1.9	10.5	4.3	1.9	3.0	-0.6	5.6	11.8	21.6	15.1	8.4	14.9
BSE SENSEX	55.3	49.7	29.3	22.0	25.3	14.6	18.3	17.0	7.0	1.0	9.5	3.4	-2.9	2.4	10.6	4.4	2.6	4.8	0.7	7.1	12.7	22.1	15.6	8.9	14.6
Employment and Inflation																									
Naukri JobSpeak Index	56.9	43.4	25.8	-2.9	41.1	30.5	16.3	38.2	39.9	22.0	20.8	5.8	12.7	-2.7	42.9	50.9	1.7	-2.2	5.2	-5.2	-0.5	-2.9	-19.0	-6.0	-9.0
EPFO Net New Subscribers	4.6	6.6	42.1	22.3	17.1	17.6	40.4	46.8	87.4	42.7	25.4	11.7	9.4	1.7	16.2	-2.5	-3.4	-3.2	-11.6	-1.7	-0.5	2.5	6.0	5.8	
Consumer Price Inflation	4.3	4.5	4.9	5.7	6.0	6.1	7.0	7.8	7.0	7.0	6.7	7.0	7.4	6.8	5.9	5.7	6.5	6.4	5.7	4.7	4.3	4.9	7.4	6.8	5.0
Wholesale Price Inflation	11.8	13.8	14.9	14.3	13.7	13.4	14.6	15.4	16.6	16.2	14.1	12.5	10.6	8.7	6.1	5.0	4.8	3.9	1.4	-0.8	-3.6	-4.2	-1.4	-0.5	-0.3
															Source	e· NCA	FR: N	/onth	lv Rev	iew o	f the F	conor	nv O	ctober	2023

Source: NCAER: Monthly Review of the Economy October 2023

Public capex has reportedly performed well till date with a YoY growth of almost 48% till August 2023. Even the state budgets have witnessed almost a 20% YoY growth. When it comes to private sector capex, total capex in FY23 has reportedly risen above the pre-pandemic levels for the first time. Growing geopolitical issues coupled with a global economic slowdown and the continued hawkish pause in monetary policy (due to relatively higher inflation rates) pose a caution to the growth cycle and hence require constant monitoring. The IMF has marginally increased its growth outlook for India's FY24 GDP at 6.3% (vis-à-vis 6.1% earlier) based on relatively stronger than expected consumption in the first quarter of the fiscal year.

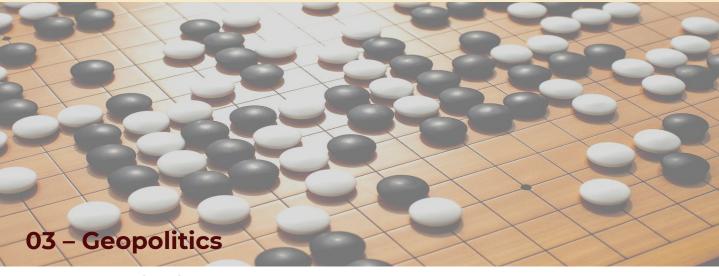
As reflected in the metrics above as well, the Purchasing Managers Index (PMI) appears to be maintaining momentum with IIP Manufacturing and IIP core steadily growing on a YoY basis as well as GST revenues showing continuous double digit increase YoY - all indicative of increased business activity across manufacturing and services segments.

Given the growth projections as well as considering the same being slightly offset due to global cues, it is important to continue focusing on the below:

- Continued investment in infrastructure
- Skilling of the workforce to ensure industry ready capabilities
- Further promoting innovation through investments in R&D (especially in niche areas) and promoting more of public-private collaboration in the same
- Further strengthening the IP laws to ensure a larger prevalence of confident innovations in the ecosystem
- Investing in renewable energy (supported by green financing as well) which will lay the foundation for accelerated financial and social returns a decade down the line.
- More inclusive growth through a concerted focus on interventions like SDGs which will ensure the whole society grows with the nation







normalcy.

# The economics of conflicts – going above and beyond just ledger entries

Conflicts and rivalries have been a part of mankind for as long as the existence of humanity. Be it the early day civilisations or modern-day societies, no era in human history has been devoid of differences and clash of interests. What used to be inter-group rivalries took the shape of inter kingdom conflicts and eventually wars in modern day parlance.

The nature of conflict has evolved over time however what needs greater attention is the changing nature of human costs involved in such situations. Any alteration in the normal balance of societal co-existence has social, economical and financial implications. Prolonged wars or turbulence along borders are a huge deterrent to investor sentiments.

clash The on-going between Russians and Ukrainians and the most recent attack on Gaza by Hamas leading to the ensuing conflict between Israel and Hamas are cases in point. As per recent estimates by the Kyiv School of Economics, the cost of destruction in Ukraine since the beginning of the conflict ranges to \$143bn. While the cost of war estimates the total cost of infrastructure destroyed and ammunition used, what it often misses on is the opportunity cost being incurred by those affected.

Inputs
(i) Genes
(ii) Environment
(iii) Physical and mental health
(iii) Social behaviors
(iii) Physical and mental health
(iii) Social behaviors
(iii) Physical and mental health
(iii) Social behaviors
(iii) Physical and mental health
(iv) Social behaviors
(iii) Physical and mental health
(iv) Social behaviors
(iii) Physical and mental health
(iv) Social behaviors
(iv) Cognitive skills
(iv) Health status
(iv) Cognitive skills
(iv) Cognitive skills
(iv) Health status
(iv) Cognitive skills
(iv) Cognitive skills
(iv) Health status
(iv) Cognitive skills
(iv) Health status
(iv) Cognitive skills
(iv) Cognitive skills
(iv) Health status
(iv) Cognitive skills
(iv) C

For tourism-dependent countries, such uncertainties lead to a downswing in tourist footfall owing to concerns of safety and well-being. Investors shy away from investing in turbulent societies and the cost of insurance goes up. With lower liquidity the cost of servicing debt also increases trapping civilians in a vicious circle of inflation.

Physical disruptions also lead to logistical delays such as disruptions in supply chains. Most recently, as a direct fallout of the Russia-Ukraine crisis and the blockades in supply chains, the world witnessed a sudden rise in food prices which was normalised only after a settlement was reached which ensured safe passage for food grains. A new threat that looms the region largely is that of energy security.

world brought together on the ideas of unity, development and collaboration the indirect costs of conflict are unreal to predict. Thinking of the unthinkable will just deepen the crevices even further but eventualities the larger humanity has to be prepared for. And potentially the biggest impact is over the human life cycle itself.

The present situation in Israel is also leading to the threat of a

larger energy crisis if allowed to persist for too long. Allaying

on the fears of the conflict getting spilt over to the wider

Middle East region, economists fear of a sharper increase in

global oil prices. For emerging market economies which are

still grappling with the aftereffects of an economic slowdown

induced by the pandemic and the Russia-Ukraine conflict such

tumult will be a shock pushing them further away from

The cost of the on-going developments in Gaza reportedly

have a financial implication to the extent of \$264mn a day for

the Israeli government and this again is just an estimation of

the direct costs. The indirect costs are aplenty. Thus for a

It is hence important to invest in tackling structural challenges like economic reforms, redistributive policies as well as infrastructure investments that can enable the changes which potentially reduce the risk of violence. Parallelly there are the softer aspects as well that result into conflicts, including for instance the perceptions of exclusion. It is important, for example, that laws and regulations and the societal framework in general is true, fair, inclusive and appropriate.







# Adapting infrastructure strategies in a dynamic world - Navigating shifting alliances

Infrastructure landscape has seen significant improvements in recent years. Governments around the world, have initiated numerous projects, including the construction of railways, urban infrastructure, airports, roads and bridges. Despite all the efforts, the funding gap remains significant, and there is a major need for innovative solutions to bridge it.

In India, traditional infrastructure financing primarily relies on government funding, public-sector undertakings, or foreign direct investment. While these sources actively contribute to the development of key infrastructure sectors, they are often limited in scope. Moreover, the overwhelming dependence on public funds can lead to uncertainty due to geopolitics and the changing landscape of alliances.

In an era marked by geopolitical uncertainties and rapid technological advancements, alliances and partnerships between nations and even organizations are becoming increasingly dynamic and ever-changing. The ability to remain agile is crucial for infrastructure players, allowing them to navigate the circumstances and leverage opportunities.

Temporary alliances, driven by geopolitical, economic, or technological factors, have become a norm in todays' world. Countries and organizations form partnerships to respond to unexpected events, exploit on mutual interests, or focus on specific challenges. However, the transient nature of these alliances force infrastructure players to be cautious and responsive. Political shifts, economic fluctuations, or technological breakthroughs can swiftly reshape the alliances, impacting the infrastructure landscape.

India's strategic partnerships with multiple countries play a crucial role in its infrastructure landscape. The nation has collaborated with traditional allies and emerging powers to bolster its ambitious projects, such as the Bharatmala and Sagarmala initiatives. However, the evolving geopolitical scenario demands a constant reassessment of these alliances. For instance, changing dynamics between major players like China, United States and Russia can influence India's infrastructure partnerships and costs due to supply chain disruptions. Staying up to date with changes is of

utmost importance to ensure continued support and financing.

The changing landscape with the emergence of Russia-Ukraine war, or the Canada-India diplomatic scuffle, are recent examples of how supply chain or investments can get hampered overnight. With massive public sector infrastructure projects like the bullet train from Ahmedabad to Mumbai, co-sponsored by the Japanese government, or the Dedicated freight Corridor under the Ministry of Railway, with financing from the World Bank, any infrastructure player has to be ready for any possibility.

The geopolitical landscape is inherently fluid, with partnerships shaping and disappearing based on shifting power dynamics and regional interests. Infrastructure projects are capital-intensive, and economic shifts can impact funding sources, project viability, and the overall investment climate. Thus, the players have to conduct thorough risk assessments and develop contingency plans to mitigate geopolitical uncertainties.

Economic factors, such as trade agreements, market dynamics, and global economic downturns, influence the stability of alliances in the infrastructure sector. Infrastructure players must actively monitor economic indicators, foresee changes, and adapt their strategies to ensure financial strength. Flexibility in financing models and the ability to pivot in retort to economic fluctuations are crucial aspects of maintaining agility.

Further, the rapid pace of technological advancements brings out another layer of complexity to the infrastructure landscape. New and Emerging technologies often create new alliances or make existing ones obsolete. The technological changes also affect the cost structure or the profitability of any infrastructure project. Thus, infrastructure players must lead technological advancement, encouraging cooperation with innovative partners, and accepting digital transformation. The ability to integrate cutting-edge technologies into infrastructure projects enhances adaptability and positions organizations to thrive in a rapidly evolving environment.







# Sustainable technology - more a "Need" now rather than a "Luxury" in Maslow's hierarchy

The significance of technology in sustainable development has risen as the world tackles the effects of climate change. Technology is seen as a key enabler of sustainable development. However, what is sustainable technology? - an overarching term referring to technologies that positively impact the environment or align with sustainability goals. It encompasses technology either designed to address existing environmental challenges or one that is created using green materials or processes. This can be understood in three different ways:

- Shift in resource usage: technology that transitions from non-renewable / non-biodegradable to renewable / biodegradable materials in its production.
- Prevention: technology that mitigates or reduces any negative environmental impact through its application or production.
- **Efficiency:** technology that is efficient and optimises the utilisation of energy and resources, thereby reducing wastage and maximising productivity.

Sustainable technology has been typically understood as wind turbines, solar panels, LED lights, and energy-efficient appliances. However, the advancement in software-based technologies, such as Al-ML, cloud computing and the Internet of Things (IoT) has changed how technology can be used for sustainable development.

Sustainable technology is not confined to solutions that solely generate renewable/green energy. Instead, businesses are leveraging Al-ML, IoT, AR/VR and other innovative technologies to enhance energy management, operational efficiency, resource allocation and upgrade manufacturing production processes, resulting in reductions in energy consumption, emission, and industrial waste. According to Gartner, sustainable technology represents a framework that leverages digital solutions to facilitate positive ESG outcomes in three critical business areas: internal IT, enterprise, and customer operations.

#### **Examples of Sustainable Technology**

Google's Deepmind is a prime example, where Al-driven algorithms are helping energy-intensive data centres to become sustainable by enhancing efficiency of the cooling system and

forecasting day-to-day energy requirements.

IoT is playing a significant role in promoting sustainability in fields like smart transportation and agriculture. IoT sensors facilitate the monitoring and analysis of various factors, including traffic conditions to alleviate traffic and improve fuel efficiency, real-time data for optimising agricultural operations, and dynamic adjustments in irrigation systems to reduce water and energy waste.

Renewable energy such as solar, bioenergy and wind power face critical challenge of storing energy. Al and IoT technologies hold potential to minimise greenhouse gas emissions by providing real-time predictions for energy demand and supply, spanning all energy sources, including fossil fuels.

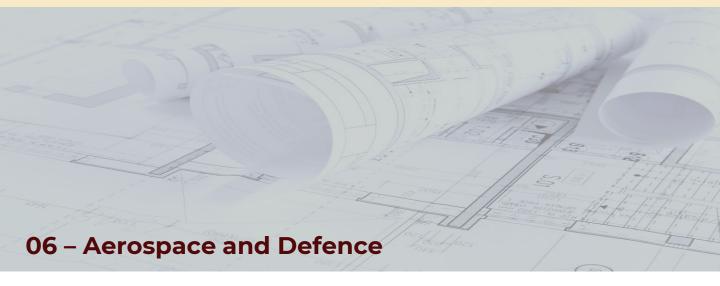
Amazon is using AI to manage the company's packaging waste. Over the last five years, AI applications brought 33% reduction in Amazon's packaging requirement. Walmart is using advanced algorithms for its supply chain network to optimise shipping routes and minimise fuel consumption. IKEA is employing AR technology by allowing customers to visualise furniture to reduce product returns and exchanges, thereby reducing the environmental impact of business operations.

#### **Future Outlook**

Sustainable technology will become the bedrock for all organisations in the future. Studies show that AI has the potential to achieve 79% of the Sustainable Development Goals, while IoT solutions are projected to reduce greenhouse gas emissions by 16.5% by 2030. As global practices push for sustainability, many industries will adopt sustainable technologies in the coming years as a response to growing climate concerns. The ability to integrate, utilise and scale the use of Al, IoT, and other innovative technologies in current business practices will be pivotal for driving growth, profitability, and enhancing customer experiences. However, it is essential to also consider factors such as the initial costs of setting up technology, interoperability, and concerns about data security breaches when implementing such solutions. The emergence of these technologies will expand the horizons for practising sustainability and achieving sustainable development goals.







# Defence Testing Infrastructure Scheme - Elevating India's indigenous capabilities

India@2047 targets a 25% share in GDP from the manufacturing sector. This includes efforts towards indigenization across sectors, including defence. As the defence manufacturing is rising exponentially, it needs to be parallelly complemented through an enhanced and streamlined defence testing ecosystem, keeping in mind the stringent quality requirements in the A&D sector.

A world-class defence testing infrastructure is not just a prerequisite for national security but also a strategic asset to propel India's self-reliance in defence technologies, bolstering innovation and indigenous production in the ever-evolving global landscape. The Government has embarked on a mission to strengthen defence testing infrastructure through multiple targeted initiatives.

#### Opening of government testing facilities for private industries

The existing facilities / proof ranges / field firing ranges of armed forces, DRDO, DGQA, DGAQA and DPSUs have been made available for the industry, particularly to support the MSMEs and startups who face a mammoth challenge of catering to testing requirements for their products. Nodal officers/teams of professionals have also been designated to help the industry. The list of accessible testing facilities along with details of the procedure have been made available on the respective websites of the government entities.

### Defence Testing Infrastructure Scheme (DTIS)

DTIS is a key initiative and flagship scheme of Ministry of Defence to set up world class DTIs in the country in specific focus sectors with a total grant-in-aid of INR 400 cr from the government of India for promoting indigenous defence production.

Each DTI will be setup through a Special Purpose Vehicle (SPV) which will comprise a mix of DPSUs, private industry players, academic / R&D institutions, industry associations and government entities. The SPV is proposed to be incorporated as a Section 8 company and shall be responsible for operations and management of the DTIs created. Around 75% of the project cost will be given by the government with remaining 25% to be borne by the SPV. All the DTIs are expected to be made fully operational by 2025.

Proposed DTIs for specific target areas under DTIS									
UP Defence Industrial Corridor	TN Defence Industrial Corridor								
Unmanned Aerial Systems	Unmanned Aerial Systems								
Mechanical and Material	Mechanical and Material								
Communication	Electronic Warfare								
	Electro Optics								

Testing Facilities for Ammunition, EMI/EMC and Environmental testing are also reportedly under consideration in DTIS apart from the above-mentioned areas

Apart from these TIDCO is also planning to setup a testing facility for 'EMI/EMC and Communication' in collaboration with Ministry of Electronics and Information Technology (MeitY) and industry partners.

### Nodal Umbrella Body for A&D Testing

In 2022 Union budget, an important announcement was made regarding establishing a nodal umbrella agency for a widerange of testing and certification requirements of defence systems. This will streamline the A&D testing ecosystem in the country, making it more effective and convenient for the industry. Discussions are ongoing to chalk out the structure and scope of such nodal agency.

India's defence testing infrastructure is a critical catalyst for self-reliance in defence technology and stands at a crucial juncture. The government's proactive and resolute measures have set the stage for progress. However, to ensure India's growth story in defence sector, it is imperative to implement the following recommendations:

- Improving ease of access for existing facilities,
- · Establishing a uniform set of standards and specifications
- Modernizing the existing facilities and using the proposed facilities to augment the existing ones
- Creation of online central database and single window portal for users

Continued commitment to enhancing defence testing infrastructure remains paramount for achieving nation's 'Atmanirbhar' goals in defence sector and become a global defence leader @2047.







# Unveiling the Vitality of Allied Health Sciences: Unsung Heroes at the Heart of Healthcare

India's healthcare system, one of the fastest-growing in the world, is undergoing significant transformations to meet the needs of its vast and diverse population. Amid this change, the inclusion of allied health sciences professionals is emerging as a critical element for a more comprehensive and efficient healthcare ecosystem.

In India, allied health sciences encompass a diverse spectrum of healthcare professions that work collaboratively with medical and nursing professionals to deliver patient-centered care. These professionals include physiotherapists, prosthetists, orthotists, speech therapists, clinical psychologists, medical laboratory technologists, and more. They play an essential role in various aspects of healthcare delivery, from patient assessment and diagnosis to treatment and rehabilitation.

The importance of bringing the Allied Health Sciences into the spotlight is that in a resource-constrained country like India, these professionals offer cost-effective services, improving healthcare accessibility for all socioeconomic segments of the population. Integrating allied health professionals into mainstream medicine optimizes healthcare resources and improves accessibility of medical treatment to a larger population.

Dietitians, for instance, help in developing culturally relevant dietary plans, and physiotherapists offer rehabilitation services, reducing the need for travel to major healthcare centers. Many allied health professionals are at the forefront of preventive care. They educate patients on lifestyle modifications, exercise, and nutrition, thereby helping to prevent chronic diseases and reduce the burden on India's healthcare infrastructure.

The challenge arises in the lack of awareness about the scope of services that these allied health professionals are trained to offer and thus underutilizing their potential. The ignorance does not only lie amongst the general public but also within the medical fraternity, where mainstream medical practitioners, policymakers and administrators are also not aware of many practices in the allied health sector. This results in lack of opportunities for the allied health professionals to hone their skills and thus stunt their professional growth which adversely impact the overall healthcare system and the patients are denied of the quality of care that they need.

Due to lack of opportunities, these fields also fail to attract good talent and retain workforce.

The facilities then have to resort to substandard service delivery which sets back the healthcare system in India far behind the global standards.



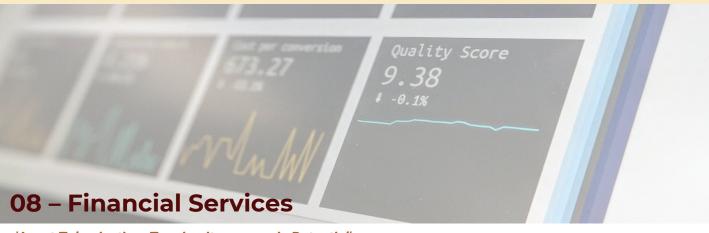
Due to lack of funding in Research and Development in these sectors, there is barely any scope for innovation in practices or technology. Prosthetics, for example, is a multibillion-dollar industry and a field of interest for innovators across the globe as it has scope for integration of sophisticated tech that works for social impact. However, India does not have any indigenous product that can even come close to the western offerings.

Despite there being a National Commission for Allied Healthcare Professionals Bill, 2020, there have been little efforts in improving the standards of education and training to the professionals. The curriculum continues to be outdated and does not meet the requirements of today's day and age. There has also been neglect in building infrastructure that supports the requirements of practice of several allied health sciences. Due to negligence on part of the government, the private industry has monopolized these practices and driven them to be unaffordable to the general public, further increasing the gap in the already inaccessible healthcare services.

As India continues to evolve and expand its healthcare infrastructure, recognizing and promoting the role of allied health professionals is not only a strategic choice but a necessary one to address the diverse healthcare needs of the nation. By leveraging their skills and expertise, India can make strides in achieving comprehensive, accessible, and affordable healthcare for all its citizens, thereby contributing to the overall health and well-being of the nation.







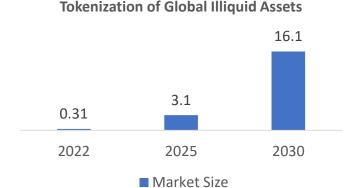
# 'Asset Tokenization: Tapping its economic Potential'

Web3 is an extremely diverse sector and its applications have adapted to the world around it in ways that offer specific benefits exclusive to the technology. The Technology has greatly expanded its scope to blur the boundaries among sectors and showcase a truly revolutionary toolkit capable of enhancing operations across industries.

Asset tokenization is one of the marquee applications of Web3 and blockchain which has the potential to transform asset ownership through digitisation on a distributed ledger. Asset tokenization refers to transforming real-world assets, which range from tangible and intangible items such as commodities, intellectual property, real estate and art into digital tokens using blockchain technology, offering several advantages to investors.

#### The Economic Opportunity

A report by the Citi Group dubbed Asset Tokenization as the 'killer use-case' of blockchain and forecasted that the market would be valued at USD 5 trillion by 2030, while another report by the Boston Consulting Group (BCG) estimated the total size of tokenized illiquid assets, including real estate and natural resources could reach \$16.1 trillion by 2030. It also stated that as a large chunk of the world's wealth today is locked in illiquid assets, On-chain asset tokenization could solve this problem.



#### Real World Impact

The real-world impact of Asset tokenization can be felt the most in sectors such as Finance, Art and real estate, where it is helping to develop customized smart solutions for these

industries. The Real Estate market is a prime example where Asset tokenization can help to enable fractional ownership, giving rise to many new investment opportunities for both investors and financial institutions, making it easier for buyers and sellers to interact with each other due to the absence of multiple intermediaries on the blockchain and helping increase liquidity.

#### On the path to Regulatory Certainty

Asset Tokenization has been gaining momentum in the Indian context with several developments related to the Asset Tokenization taking place over the past year.

In September 2023, The International Financial Services Centres Authority (IFSCA) formed a seven-member committee of experts to develop regulations and policy guidelines for tokenization of real-world assets.

In July 2023, the Telangana government announced plans to launch its Asset Tokenization Standards Framework aimed at providing a common set of rules and guidelines for the tokenization of assets in India.

In conclusion, while several challenges remain, positive signs have emerged in over recent years, indicating a change in attitude towards the sector in general.

The recently released IMF-FSB Synthesis paper, developed through directions from the Indian G20 presidency, includes asset tokenization framework in its scope and ambit of its implementation roadmap, according to which, the FSB will undertake a global market analysis to achieve regulatory clarity and identify changes which may be needed from a policy perspective.

The planned study will go on until 2024, following which subsequent measures may be taken to expand on the market. While the market for asset tokenization in India is still at a nascent stage, with the correct regulatory support the sector will play a significant role in the growth of the Indian economy.



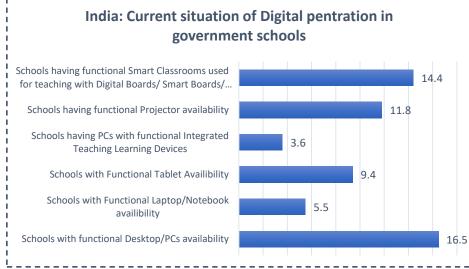




# Digital penetration in Indian government schools – still a long way to go

Learning, creativity and use of technology in education go hand in hand. Ranging from digital content with 2-D and 3-D animations, introduction to AI, AR, ML, robotics and all such type of initiative has helped students to learn and grow in a better way. It matters a lot when a child from an under-privileged background coming to government schools has the access to these new tools and technology. This is also the basic and broad idea of central and various state governments as well, to give such exposure children through digital initiatives.

Though the intent was already there, the pandemic paved the way for a more focused approach using technology to overcome learning losses. Hence the government's long term strategy towards ensuring new age learning is shaping digital education through various initiatives under schemes like RMSA, SSA to Samagra Shiksha to now PM SHRI schools and this will help in substantial growth. Having said that, if we look at the status of digital penetration in government schools in the country, the data is not encouraging. As the graph suggests, the availability of digital devices for various purposes and in various categories are not even 20% of the total classes.



\*\*\*The figures are in %age and as per UDISE+ data of year 2021-2022.

- less than 10% of government schools of the states like Uttar Pradesh, Bihar, Jharkhand, Madhya Pradesh, Assam, Meghalaya, Manipur, and Tamil Nadu have functional Desktop/PCs availability.
- Whereas states like Maharashtra, Sikkim, Gujarat, Kerala, Punjab, Chandigadh and Delhi has over 40% of schools with Functional Desktops/PCs where Delhi schools having a score 100% in this category.

For a country like India, this clearly shows a digital divide, and the learning is affected due to such disparity.

- More than 19 states and UTs have less than 10% of schools with functional Smart Classrooms used for teaching with Digital Boards/ Smart Boards/ Virtual Classrooms/ Smart TV availability.
- 13 states and UTs have less than 10% of schools with functional Projector availability and 26 states & UTs have less than 10% government schools with PCs with functional Integrated Teaching Learning Devices.

This entire data suggests that though government is working with dedicated approach to bring the benefits of digital medium

in different ways like introducing DIKSHA, ICT@schools scheme, launching National Digital Education Architecture (NDEAR) and emphasizing it in NEP 2020 as well, still a lot is required to be done.

- More focus is to be given on the states where the digital divide is more and resulting overall learning loss and scoring less in PGI.
- Also, a timely intervention for the execution is also much needed as most of the time the approved budget does not get fully utilized and get lapsed.
- States too must be more cognizant of their schools and should not be only dependent on the funding of central government.







# Sabeer Bhatia

Co-founder: Hotmail, Showreel

Mr Sabeer Bhatia's career has been marked by various entrepreneurial endeavors beyond Hotmail. He has been involved with diverse technology startups and ventures, driven by a commitment to innovation and the desire to create meaningful change in the tech industry.



Can you share the story of how the idea for Hotmail came about and what inspired you to create the world's first web-based email service?

The inception of Hotmail stemmed from a personal necessity that Jack Smith and I experienced—we found ourselves unable to check our personal emails due to the restrictive firewall of our corporate intranet. The concept was straightforward: bring email to the web, making it accessible anytime, anywhere. Given that it was the dawn of the internet era, when advertising-driven business models were prevalent, we opted to offer our service at no cost. This decision marked the beginning of Hotmail, a groundbreaking venture in the world of digital communication.

From revolutionizing email with Hotmail to your new venture, Showreel, you've been at the forefront of tech innovation. Could you provide us with an overview of Showreel, and its primary mission or value proposition? What inspired you to embark on this venture, and how does it address the current needs or challenges in the market it serves?

ShowReel's primary mission is to help present and aspiring entrepreneurs master the fundamental skills of entrepreneurship. These encompass the art of brainstorming innovative ideas, establishing robust networks, effective team recruitment, fostering motivation, and mastering the nuances of marketing, sales, and unwavering commitment to one's cause. We endeavor to impart these vital skills via an app-based course that uses Al to generate content and test these "critical thinking skills" via a verbal simulated interview on the app.

In developing countries like India, AI holds immense promise for economic growth, but there are concerns about potential job displacement. How do you believe such nations should navigate the regulatory landscape to strike a balance between fostering AI innovation and addressing the potential challenges of job loss?

The AI revolution is well underway, and there is no reversing its course. India must embrace this technological transformation with open arms, recognizing that it is here for the long haul. The country's priority should be to channel its extensive human resources towards harnessing AI to address societal challenges. At its core, India must acknowledge that its true power on the global stage lies in its people. Cultivating a mindset geared towards critical thinking and innovative problem-solving will undoubtedly propel the nation to unprecedented success and prosperity.

How do you envision the future of IPR and protection in the context of AI-ML, where algorithms, data, and innovations are

increasingly generated autonomously? What are the key challenges and strategies you see in safeguarding IPs within this rapidly evolving landscape?

This question poses a significant challenge, particularly given its legal complexities, and while I may not have a definitive answer, I am confident that staying updated with ongoing developments is crucial for adapting to changes in ownership and property rights. We are dealing with a kind of "superhuman" entity capable of producing content and ideas at a level beyond human capability. This shift necessitates a realignment of our focus and energies toward the uniquely "creative" domains where human ingenuity still surpasses Al's capacity to generate novel ideas and methodologies. Additionally, it is imperative that we guide the development of Al-based systems toward paths marked by empathy and ethical considerations.

Hotmail was one of the pioneering companies of the dot-com era. What lessons did you learn from the early days of the internet that are still relevant today? As a successful entrepreneur, what advice do you have for aspiring startup founders, especially those in the tech and internet sectors?

In the pages of our modern entrepreneurial landscape, the foundational principles of business creation remain as vital and relevant as ever beginning with identifying a problem that demands resolution, coupled with an unshakeable conviction in your chosen solution. Assembling the ideal team becomes your next crucial step, rallying a group of individuals who are as dedicated to your mission as you are.

Transforming this venture into the central focus of your life is imperative, embedding a sense of purpose and direction in everything you do. Yet, the ability to adapt is just as crucial, ensuring you remain flexible and responsive in an everchanging business environment.

Staying informed about the latest technological advancements is non-negotiable, as it fosters innovation and keeps you competitive. Amidst all these, humility, empathy, and honesty stand out as the cornerstones of a successful entrepreneurial spirit. They guide your actions, nurture your relationships, and maintain your integrity, both within yourself and in the eyes of those around you. Embracing these timeless principles is the secret to not just surviving, but thriving in the entrepreneurial world, ensuring that your venture stands the test of time and leaves a lasting impact.





#### **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: <u>feedback@primuspartners.in</u>



in Primus Partners India



# **Disclaimer**

The report is prepared using information of a general nature and is not intended to address the circumstances of any particular individual or entity. The report has been prepared from various public sources and the information received from these sources is believed to be reliable. The information available in the report is selective and subject to updation, revision and amendment. While the information provided herein is believed to be accurate and reliable, Primus Partners Pvt. Ltd. does not make any representations or warranties, expressed or implied, as to the accuracy or completeness of such information and data available in the public domain. While due care has been taken while preparing the report, Primus Partners Pvt. Ltd. does not accept any liability whatsoever, for any direct of consequential loss arising from this document or its contents.