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YOJANA

APRIL 2022 A DEVELOPMENT MONTHLY ₹ 22

FINTECH

SPECIAL ARTICLES

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Injeti Srinivas

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Bharat Lal

LEAD ARTICLE

Digital Identity
Dr Saurabh Garg

FOCUS

Fintech Revolution
Debjani Ghosh

PM GatiShakti

PM GatiShakti is a transformative approach for economic growth and sustainable development. The approach is driven by seven engines, namely, Roads, Railways, Airports, Ports, Mass Transport, Waterways, and Logistics Infrastructure. All seven engines will pull forward the economy in unison. These engines are supported by the complementary roles of Energy Transmission, IT Communication, Bulk Water & Sewerage, and Social Infrastructure. Finally, the approach is powered by Clean Energy and Sabka Prayas– the efforts of the Central Government, the State governments, and the private sector together– leading to huge job and entrepreneurial opportunities for all, especially the youth.

The Union Cabinet cleared the PM GatiShakti- National Master Plan for multi-modal connectivity to economic zones on 21 October 2021. It is a giant stride in India's ambitious goal of achieving USD 5 trillion economy. Announced during the Prime Minister's address to the nation on the 75th Independence Day from Red Fort, PM GatiShakti typed and proper focuses on India's citizens, industries, manufacturers, farmers, and villages among others. PM GatiShakti is supposed to break departmental silos and institutionalize holistic planning for stakeholders across major infrastructure projects.

PM GatiShakti aims to ensure that India of the 21st century does not waste money or time due to lack of coordination in infrastructure projects. A technology platform has also been prepared for every megaproject so that every department has accurate information on time. It shall bring various stakeholders together and help integrate different modes of transportation. It will give new energy to the present and future generations of the country to build India of 21st century and lay the foundation of Atmanirbharta for the next 25 years.

The master plan takes a holistic approach to sector-specific developments by integrating 16 ministries in a joint committee to implement and monitor Rs 100 lakh crores of investment. A closer look at the sector-wise take-outs are as follows:

- In the Telecommunication sector, a total length of 35,00,000 km of optical fibre cable network is to be laid down by 2024-25. Connecting all 2,56,000 Gram Panchayats with high-speed internet and 4G mobile connectivity by 2022.
- New and Renewable Energy sector capacity is to be increased from 87.7 Gigawatt to 225 Gigawatt by 2024-25. Around 50 per cent of India's power generation capacity is to be met by renewable energy sources by 2024-25.
- The power transmission network is to be upgraded from 4,25,500 circuit km to 4,54,200 circuit km by 2024-25. Transmission network performance parameters to match the best global standards.
- In Petroleum and Natural Gas sector, 17,000 km long trunk pipeline, connecting major demand and supply centres for industries, is to be added by 2024-25 making a total length of 34,500 km of pipeline across the country. All States are to be connected with the trunk natural gas pipeline network by 2027.
- Powered by Sagarmala, the shipping sector is to see an increase in cargo capacity at the ports to 1759 Million Metric Tonnes per Annum (MMTPA) by 2024-25 from 1282 MMTPA in 2020. Cargo movement on all national waterways will be 95 Million Metric Tons (MMT) by 2024-25 from 74 MMT in 2020. Cargo movement on Ganga to be increased from 9 MMT to 29 MMT by 2024-25. Powered by Regional Connectivity Scheme-UDAN, the civil aviation sector to see an increase in the aviation footprint globally. Around 20 airports, heliports, and water aerodromes are to be operational by 2024-25. A total of 109 airports including the existing 51 airstrips, 18 greenfield airports, 12 water aerodromes, and 28 heliports to be developed by 2024-25.
- PM GatiShakti Master Plan for Expressways will be formulated in 2022-23 to facilitate faster movement of people and goods. The National Highways network will be expanded by 25,000 km in 2022-23. Rs 20,000 crore will be mobilised through innovative ways of financing to complement the public resources. Powered by Bharatmala, in the road transport and highways sector, two lakh km route of the national highway network is to be achieved by 2024-25. Along the coastal areas, 5590 km of four & six-lane national highways are to be completed by 2024-25. All State capitals in North Eastern Region to be connected with either four-lane National Highway or two alternate alignments of two-lane configurations each by 2024-25.
- By 2024-25, Indian Railways to see a decongestion by 51 per cent due to completion of critical projects. Cargo to be handled by Indian Railways will be 1600 million tonnes up from 1210 million tonnes in 2020. Western and eastern dedicated freight corridors for faster movement of freight trains to be completed. Railways will develop new products and efficient logistics services for small farmers and Small and Medium Enterprises, besides taking the lead in the integration of Postal and Railways networks to provide seamless solutions for the movement of parcels. 'One Station-One Product' concept will be popularised to help local businesses & supply chains.

The scope of PM GatiShakti National Master Plan will encompass the seven engines for economic transformation, seamless multi-modal connectivity, and logistics efficiency. It will also include the infrastructure developed by the State governments as per the GatiShakti Master Plan. The focus

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YOJANA

Since 1957 A DEVELOPMENT MONTHLY

Let noble thoughts come to us from all sides.
Rig Veda

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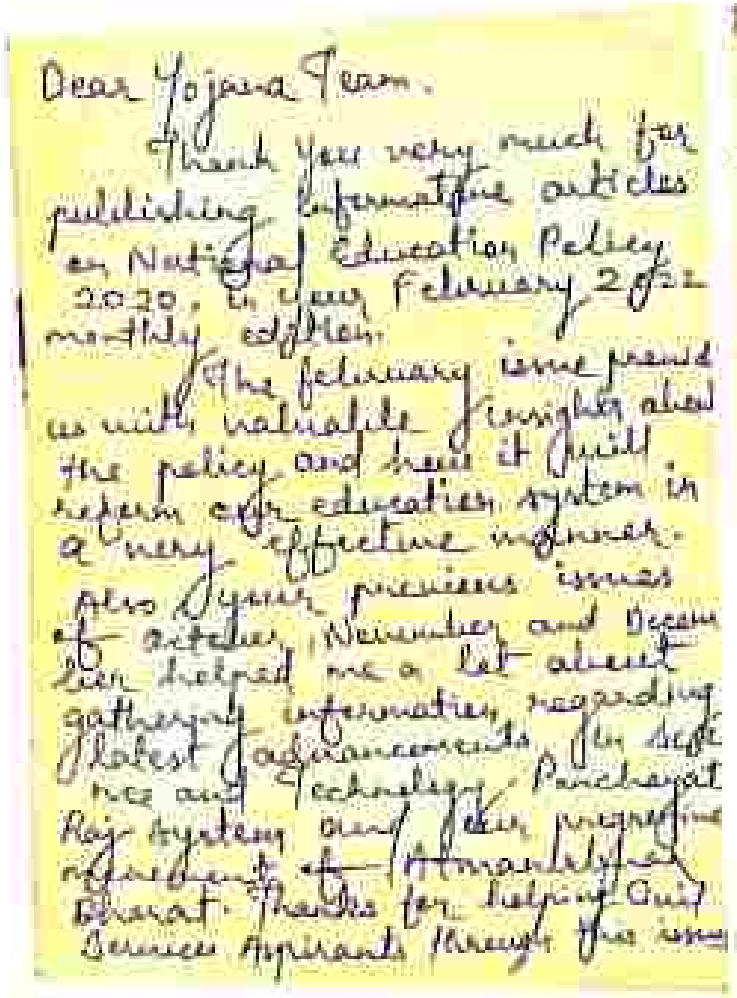
Dear Yojana Team,

Thank you very much for publishing informative articles on National Education Policy 2020, in your February 2022 monthly edition.

The february issue provides us with valuable insights about the policy and how it will reform our education system in a very effective manner. Also, your previous issues of October, November and December have helped me a lot about gathering information regarding latest advancements in Science and Technology, Panchayati Raj System and our progressive movement of Atmanirbhar Bharat. Thanks for helping Civil Services Aspirants through these issues.

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Valuable Insights

Thank you very much for publishing informative articles on National Education Policy 2020 in your February 2022 monthly edition. The issue provides us with valuable insights into the policy and how it will reform our education system in a very effective manner. Also, your previous issues of October, November, and December helped me a lot in gathering information regarding the latest advancements in Science and Technology, Panchayati Raj System, and our progressive movement of Atmanirbhar Bharat. Thank you for helping Civil Services Aspirants through these issues.

–Vaibhav Vijay Panchal
Mumbai, Maharashtra

Budget 2022-2023

A lot of thanks to the Yojana Team for presenting an all-encompassing views and an insightful issue on Budget 2022-2023. I am a student and an avid and regular reader of this esteemed monthly magazine.

–Nitesh Kumar Manjhi

Thought-Provoking

Being a consistent reader of Yojana for a considerable period of time, I came to the assumption that it is only helpful to UPSC aspirants. In the February issue, there was an article about the 'role of media' which was so thought-provoking. There was a line in that article about media role which says media must be helpful for attaining suraj ya (good governance). I, from bottom of my heart would say thanks to the entire team of Yojana for such wonderful content.

–Ajit P
Vizianagaram

Fascinating Content

I encountered Yojana for the first time in July 2021 and it fascinated me so much so that I bought Yojana of past one and a half years and now I have become an avid reader of this magazine. I request the Yojana Team to come up with an issue revolving around our great freedom fighters.

– Baljeet Rajput
Gopalganj, Bihar

National Education Policy

Young aspirants have got to read Yojana to update their knowledge. Ever since I retired in 2000, I have had the time to pursue the information Welfare Schemes

Each leader has his own vision. NEP-1986 laid stress on Human Resources Development to implement Govt Schemes planned with greater know-how and vigour for efficient management of projects for welfare. ICT was part of NEP-1986 which has revolutionised ITES for business and economic growth at a great speed from 1990 to enter the 21st century. NEP 2020 lays stress on the basic academics of students and the teachers for Foundational Learning and Numeracy. However, little stress is seen on Maths, Science (Physics-Chemistry), Biology and Botany for innovation and inventions in industry, engineering, healthcare of humans/animals, and creating an environment for healthy living on this planet by avoiding pollution and global warming.

– A Reader
Bathinda, Punjab

Precisely Disseminates Information

Since the Development Monthly, Yojana, celebrated "Azadi Ka Amrit Mahotsav" through its esteemed articles, I would like to thank the team and all its contributors for being so precise and accurate in disseminating the information to the common mass at an affordable price. The recent edition is a much-needed topic to be comprehensively covered since the education system has undergone a tumultuous period due to Covid-19. Prima facie, the New Education Policy seemed quite impressive with its updated formats. I am thankful to Yojana for presenting the nuances associated with this new system.

– Sayan Karmakar
Kolkata, West Bengal

Holistic and Multidimensional

I would like to thank Yojana team for providing us with excellent source of insights. I was waiting for this topic (NEP) for a long time. Every article of this magazine is the best in every manner. Its multidimensional approach and illustration give us a holistic point of view for every topic. I am preparing for UPSC CSE and this magazine is very helpful for me in developing insights.

– Gyan Singh
New Delhi

Inclusive Development

Just finished reading this month's Yojana Magazine on the Union Budget. I loved reading the comprehensive and broad based coverage of it. The analysis and deeper insight of the budget in the magazine really provided a context to the Budget in an easy to understand way. Kudos to the team! Please consider publishing an issue on inclusive development post-Covid, especially in the context of K-shaped recovery and rising inequality.

– Anjali Singh
New Delhi

An Index to Current Events

I am an ardent follower of the magazine. It is like an index to all the current events taking place in the country. I would like the team to also publish economic topics like disinvestment, economic growth, etc., which give an overview of the global models with our country's contemporary ones. To take the Indian economy to 5 trillion, a comparison of other countries' models can be inherited and worked upon. As our economy is in a phase of recovery, it would be great for all to know the views of experts.

– Shivain Bhardwaj

Knowledgeable Content

I would like to share my feedback on reading Yojana regularly. This magazine is useful to all of us for gaining extra knowledge and is different as compared to others. It is written in a very simple language. I am suggesting to all the readers, this magazine is not only important for UPSC but it is also important for our clarity, anyone can read this easily. Thank you so much team Yojana!

– Ganesh Wadagale
Ahmednagar, Maharashtra

Government Policies

Dear Yojana Team, I am following Yojana for the last two years and I find it very helpful in improving my knowledge, reading skills; it's like a knowledge hub of government policies. I like your 'Do You Know' section. So, thank you for giving such knowledgeable content.

– Aman Rawat
Dehradun, Uttarakhand

Fintech as an Enabler

There was a time when going to the market without carrying a wallet loaded with cash was unfathomable. Eventually, the ATM cards reduced the amount of cash we needed to carry in our wallets to some extent. In today's time and era, be it the roadside vegetable vendor or big stores in malls, all are accepting digital payments. These are interesting times when mobile payments are surpassing ATM cash withdrawals.

This has brought ease to the consumers and has immensely expanded the scope of the digital ecosystem in the financial sphere. The long queues at the highway tolls and the subsequent delays have been reduced to a great extent with the automated FASTag system. The pandemic was, in a way, boon for the sector when 'touchless' transactions didn't remain a luxury but a necessity to combat the spread of infection. Most of the activities saw a shift from a brick-and-mortar model to personal screens for a long duration. This made a good use-case for fintech. Despite the economic downturn, fintech payments saw investments double in the first half of 2020. Digital India opened new avenues of innovation and brought ease through financial technology. Today, it is paving the way to financial inclusion and taking innovations to the last mile, thus empowering local communities.

Fintech is an integration of technology in financial services to provide better delivery to consumers. It is broadly based on the four pillars of income, investments, insurance, and institutional credit. For the citizens, the government making use of technology to link them to the financial benefits and initiatives is another aspect of fintech. With its array of applications, the scope and opportunities are immense.

The Jan Dhan-Aadhaar-Mobile, or JAM Trinity has been a gamechanger in financial inclusion in India. This year, the Union Budget has laid a sound roadmap for fintech and its scope in augmenting services to the people. The introduction of Digital Currency and core banking in post offices are considered the next leap in this direction. Direct Benefits Transfers and e-RUPI have enabled targeted delivery and have reduced leakages in the system while initiatives like PM SVANidhi have enabled access to credit for small vendors across the country.

Though the urban market is embracing fintech, rural India is still a lesser-tapped market for the industry. The infrastructure and manpower required for the fintech solutions to be a part of rural livelihoods need to be further strengthened to reap its benefits. Also, there is a need to ensure trust in the use of these technologies by the people and a system wherein their money and investments are safe and secure. Policy support in the area of data security and fraud management is essential. The use of new technologies like Blockchain, geo-fencing, geo-tagging, or a framework to prevent phishing attacks can be a step forward in ensuring a secure and stable digital financial ecosystem. With the plethora of opportunities, fintech and its ecosystem have a long way to go as an enabler technology, that is accessible and affordable for economic and social well-being. ❑

Fintech Beyond Boundaries

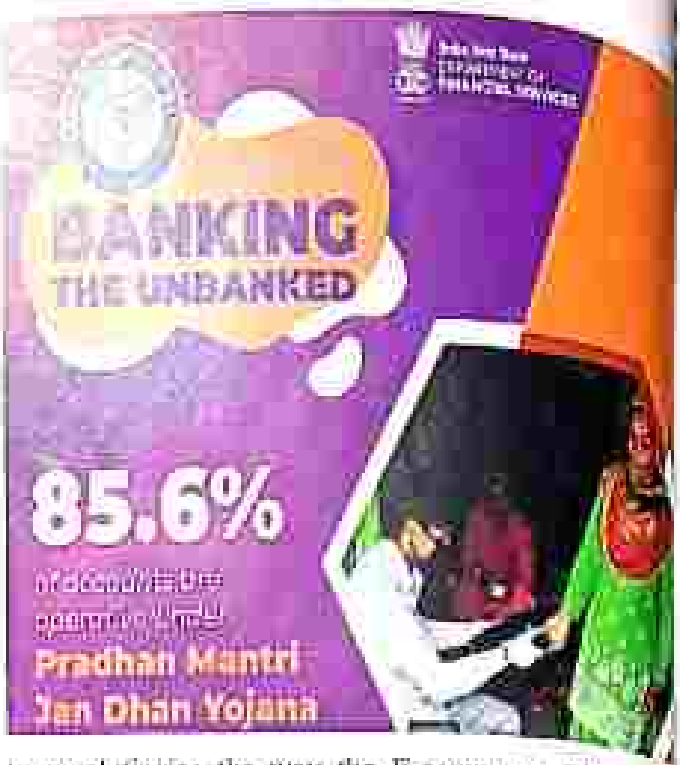
Injeti Srinivas

India's emergence as a fintech ecosystem has been spectacular where fintech's financial institutions, regulators, and Governments have followed a collaborative approach to provide a comprehensive and continuous impetus to the growth of this sector. While transformational digital initiatives by the governments have helped fintechs to enhance the economic and social well-being of millions of people around the world, the next stage of the digital revolution lies in moving beyond fragmented digital solutions to digital infrastructures that will spur digitalisation across economies and societies.

The Government has demonstrated to the world a unique model of Public-Private Partnership by building a strong public infrastructure in the India Stack– that facilitates and enables private sector innovation. The India Stack is based on a four-pronged approach. First, biometric identity in the form of Aadhaar for identification; second, getting everyone a bank account through Pradhan Mantri Jan-Dhan Yojana (PMJDY) and building financial inclusion; third, building scalable platform(s) to transfer money [Immediate Payment Service (IMPS), Unified Payment Interface (UPI), Bharat Bill Payment System (BBPS), etc.] and finally, allowing banks and fintechs also to access platforms like UPI, Goods and Services Tax Network (GSTN) & DigiLocker to innovate. This open-API infrastructure has been leveraged heavily by fintechs to address diverse use-cases and will continue to act as the core pillar for powering the next wave of growth.

Despite a slowdown in economic activity due to the pandemic in 2020, the fintech industry in India continued to showcase growth by capitalising on the digitisation opportunities posed by the pandemic and leveraging public digital infrastructure among other things. India is one of the largest and fastest-growing fintech markets in the world with more than 2,100[1] Fintechs and is the third-largest fintech ecosystem in line after the US and China. India has a fintech adoption rate of 87 per cent, which is the highest in the world with the global average at around 64 per cent. As of December 2021, India has over 17 fintech companies[1] which have gained 'Unicorn Status' with a valuation of over USD 1 billion and India's market

The author is Chairperson, International Financial Services Centres Authority, Email: chairperson@ifsca.gov.in



itself was USD 50-60 billion in FY 2020 and is expected to grow to USD 150 billion by 2025 as per a recent study conducted by Boston Consultancy Group.

While transformational digital initiatives by the governments have helped fintechs to enhance the economic and social well-being of millions of people around the world, the next stage of the digital revolution lies in moving beyond fragmented digital solutions to digital infrastructures that will spur digitalisation across economies and societies. Digital Public Infrastructure (DPI) solutions can improve the lives of people around the world by enabling digital inclusion. Successful governments have been able to harness these digital tools to address urgent challenges facing nations. Countries that had a comprehensive and operational DPI before the pandemic were able to build a coherent and rapid response to the virus.

Digital public goods are helping DPI reach a global scale. The beauty of digital public goods, i.e., open-source software, open data, open AI models, open standards, etc., is that anyone, anywhere, can contribute to it and use them. They are proving to be a critical tool for building infrastructure in ways that address some of the limitations of solutions that rely on proprietary software and gain value as they are shared and reused. India has been a frontrunner in creating low-cost and scalable digital public goods which promote inclusive development. The CoWIN portal developed by India is an example of a digital public good. Another notable one is the Open Network for Digital Commerce (ONDC) which is expected to revolutionise the way the E-commerce industry is operating currently.

DPI must be inclusive, protect the privacy and security of citizens, and be governed by regulatory frameworks that ensure accountability and transparency in their implementation. It must be built to enable governments to collaborate with the private sector and promote innovation on top of the foundational layers to create new value out of it. This is essential for ensuring that citizens get access to a range of services like healthcare, insurance, financing, and other services.

Building meaningful Public-Private Partnerships is going to be instrumental in developing good DPI. As already mentioned, the digital payments ecosystem grew in India after Aadhaar and Unified Payment Interface (UPI) were put in place, and many companies were able to build on the foundational layer to deliver new services and gain sizable market shares. It has also allowed for competition and innovation between various payments applications. Digital transactions around the country have reached a new high both for big and small banks. UPI also removed barriers to entry, democratising innovation to old and new businesses alike.

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Many countries have been building their own digital public infrastructure and it is not easy to get it right. There are no quick fixes. Only through better coordination, mobilising more resources, and a clear understanding of a DPI and what it matters can we accelerate deployment and local value creation.

The concept of 'Fintech

Beyond Boundaries" was pioneered by "InFinity Forum", a flagship financial technology and global thought leadership event from 3 December 2021 and witnessed participation of the United Kingdom, Indonesia, and South Africa as partner countries to the event. The event received over 96,528 registrations across 70+ countries. The speakers included four Finance Ministers and three Technology Ministers across four countries. The event included sixty-two speakers from nine countries with eight 'Infinity' talks and nine 'Infinity' panels. The Forum provided a platform where pressing problems, progressive ideas, and innovative technologies from across the world get Discovered, Discussed, and Developed into Solutions. It united the world's leading minds in policy, business, and technology to discuss and come up with actionable insight into how technology and innovation can be leveraged by the Fintech industry for inclusive growth and serving humanity at large.

The Forum focused on three key themes (i) "FinTech beyond boundaries" with governments and businesses focusing beyond the geographical boundaries in the development of global stack to promote financial inclusiveness, (ii) "FinTech beyond Finance by having convergence with emerging areas such as Space Tech, Green Tech, and Agri Tech to drive sustainable development", and (iii) "FinTech Beyond Next" with focus on how Quantum Computing could impact the future of Fintech industry in the future and promote new opportunities. Each theme extends the realm of Fintech beyond boundaries, keeping in line with the overarching spirit of the event.

Going forward, India can collaborate with other nations on how digital identity can be built for other countries by using the digital architecture and systems in India. Also, India may collaborate with international organisations in building standards for international identity so that digital identity, which is a means for empowerment, is available across the world.

IFSCA has a unique advantage to look outwards taking the lead into connecting the best of individual stacks and coming up with the concept of a Global Stack which will result in wider growth of Fintech industry and help in inclusive growth. The concept of 'Global Stack' has the potential to take the agenda of "Fintech Beyond Boundaries" forward and upwards.

The success of India's Fintech story can be attributed to the development of India Stack. Similarly, other countries have been building their own Stacks with different measurements of success. Currently, all jurisdictions are inward-looking. IFSCA has a unique advantage to look outwards taking the lead into connecting the best of individual stacks and coming up with the concept of a Global Stack which will result in wider growth of fintech industry and help in inclusive growth. The idea of a global stack was introduced by IMF called Bali Fintech Agenda in 2018, and the concept of 'Global Stack' has the potential to take the agenda of "Fintech Beyond Boundaries" forward and upwards.

A workshop on Aadhaar 2.0 was held in November 2021. It focused on ushering in the next era of Digital identity and Smart governance and included "Aadhaar as an international digital identity standard" as one of its vision and primary theme. Aadhaar has taken the centre stage in the international arena for countries that are charting their digital identity roadmap and architecture and can play a leadership role in the formation of the international digital identity standard-setting body.

There are still more than 1.7 billion[2] adults in the world without access to financial services and Fintechs can have a major social and economic impact on them. All the countries are trying to reap these benefits while also mitigating the risks. We need greater international cooperation to achieve that and to make sure the fintech revolution benefits many and not just a few. The concept of Global Stack shall provide a useful framework for countries to assess their policy options in adapting and building a foundation for digital economy suiting their own circumstances and priorities.

Fintechs solve problems that straddle across the different financial sector domains namely Banking, Capital Markets, Insurance, Funds, etc. As a unified regulator for the IFSCs, IFSCA provides a unique opportunity to fintechs to craft solutions for Open banking, Open Insurance, Open Investment eventually leading to an Open Finance Ecosystem that augurs well for the Open Data Economy of the future. Truly, it is a brave new world that is open and beyond boundaries for fintechs.

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Accelerating Socio-Economic Development

Bharat Lal
Spurthi Kolipaka

In recent years, the Government of India has taken a number of steps to improve the 'quality of life' and enhance 'ease of living' of people with a targeted approach towards poverty elimination, especially of those living in rural areas, by ensuring basic services like housing, toilets, electricity, clean cooking gas, healthcare, financial services, social security, broadband connectivity, roads, etc. The logical aspiration of people has now risen to have the provision of tap water within their household premises. The digital era provides the opportunity to utilise data analytics to measure and monitor the impact of various initiatives, to integrate and promote digital governance. This is possible, even more so with the massive linkage of Aadhaar to the rural households. Time has come to understand the impact of the accessibility of these services to the poor and marginalised sections of society, and whether the families have been able to escape the vicious cycle of poverty.

Clean drinking water supply not only reduces the burden of water-borne diseases but is also a prerequisite to ensure improved sanitation and hygiene, leading to an overall improvement in public health. It also relieves women and young girls, who are considered the primary water managers, from the age-old drudgery of fetching water from a distance, and gives them the time to pursue education or vocation of their choice. However, with the increasing population, the impact of climate change, and competing demand for water from various sectors in a fast-developing economy, many regions face water stress especially during low rainfall years, leading to water supply systems not performing optimally. The overall goal is to ensure that water does not become a limiting factor in India's rapid socio-economic development and quest for high economic growth to eliminate poverty.

Jal Jeevan Mission

Addressing these challenges, on 15 August 2019, Prime Minister, in his Independence Day address to the nation, announced 'Jal Jeevan Mission (JJM)– Har Ghar Jal', to be implemented in partnership with States, to make

Bharat Lal, who presently works as Secretary, Lokpal of India, is the founder Mission Director of National Jal Jeevan Mission. Email: bharatlal@gmail.com
Spurthi Kolipaka is working as a Consultant, UNICEF, India.

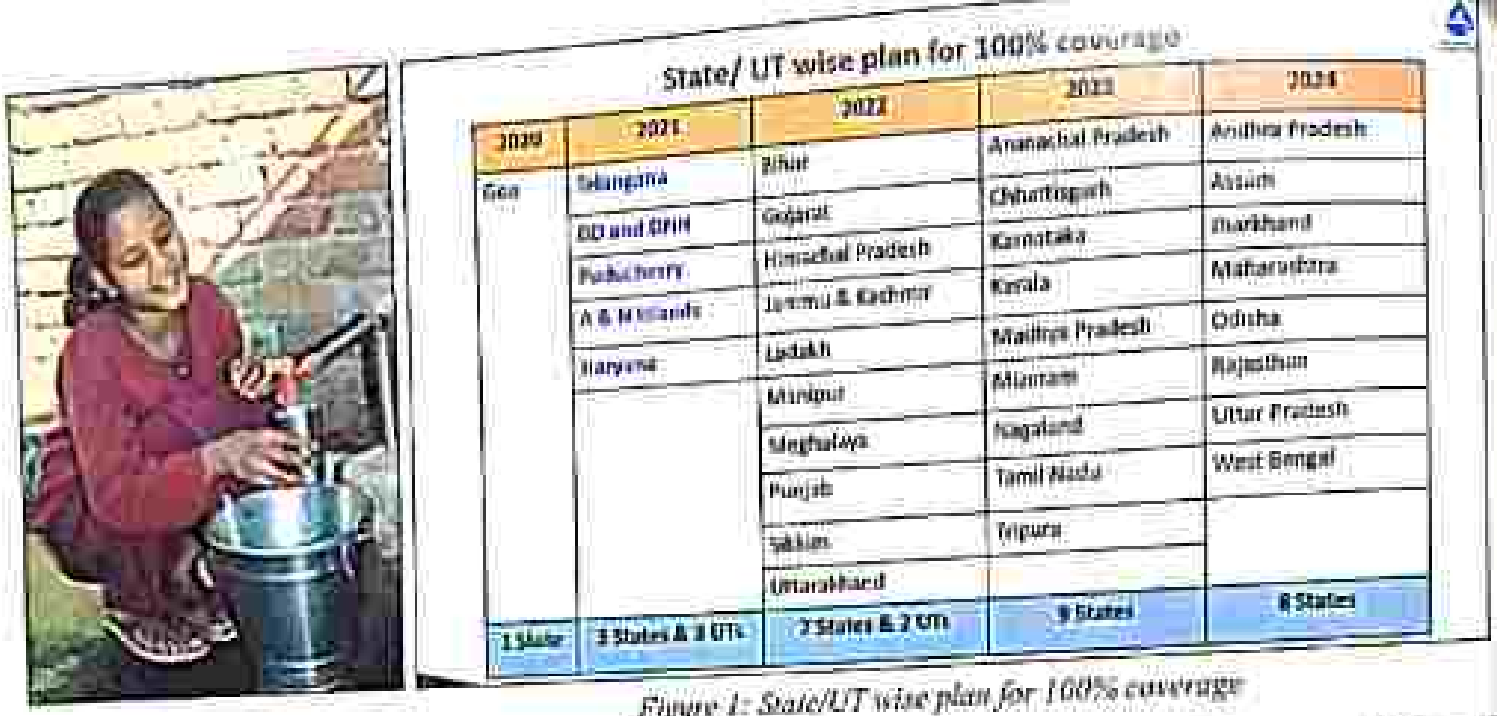

Figure 1: State/UT wise plan for 100% coverage

provision of tap water connection to every rural home and public institution by 2024. The focus is on 'assured and regular potable water service delivery at household level', i.e., water supply in adequate quantity (55 litres per person per day) of prescribed quality (as per Bureau of Indian Standards) with sufficient pressure on a regular and long-term basis.

Challenges

In August 2019, at the time of the announcement of JJM, out of total 18.70 crore rural households, only 3.23 crore (17%) households were having provision of tap water supply. However, in the last two years, the number of households has also increased, which must be considered while developing a strategy. As on date, there are over 19.32 crore rural households across 21 different edapho-climatic conditions in the country. In India, conditions vary from cold desert to hot desert, Indo-Gangetic plains to mountains, vast alluvial mainland to forested areas, more than 7,000 km long coastal belt, to many islands. Each such region has its own unique challenges. India, as a country with a 5,000 years old civilisation possesses huge traditional knowledge, wisdom, and practices to overcome these challenges. However, with increasing population, the impact of climate change, and competing demand for water from various sectors in a fast-developing economy, many regions have started facing water scarcity, which impacts women and girls the most, as in many regions, managing homes and fetching water for domestic use is considered to be their responsibility. During summer, in many drought-prone and desert areas, women accompanied by their daughters walk long distances just to secure a minimal amount of potable water.

Adding to this challenge is the fluctuation in rainfall patterns with western Rajasthan receiving 100 mm per year to Mawsynram in North East receiving 11,000 mm annual rainfall. India has the highest groundwater consumption in the world with about 10 abstraction structures every km, which indicates the over-exploitation of groundwater sources. As per the Central Ground Water Board report, 2017, about 50% of groundwater sources either have quality or quantity issues, which means simple in-situ water supply systems based on groundwater may not work on a long-term basis in half of the country. Further, it is projected that water demand will be twice its availability by 2030 and it is questionable considering that the per capita annual freshwater availability is likely to decline to 1,293 cu.m by 2025, which is very close to the water scarcity line.

> **JJM is about achieving long-term drinking water security in such a way, so as to avoid making emergency arrangements through the deployment of tankers or trains, handpump installation, etc., in any village. It envisions working with a 'utility-mindset' and making use of information technology at the village level, empowering and enabling local communities.**

Thus, with the launch of JJM in 2019 to ensure clean tap water supply to the remaining 83% of rural households, as well as new households on a long-term basis, water supply infrastructure is to be created by providing functional household tap connections within 5 years along with upgrading existing water supply systems to make them JJM compliant is a huge challenge. This also means that drinking water sources have to be strengthened and greywater has to be treated and reused. The scale of the work is so huge that the number of tap water connections to be provided every year is equivalent to

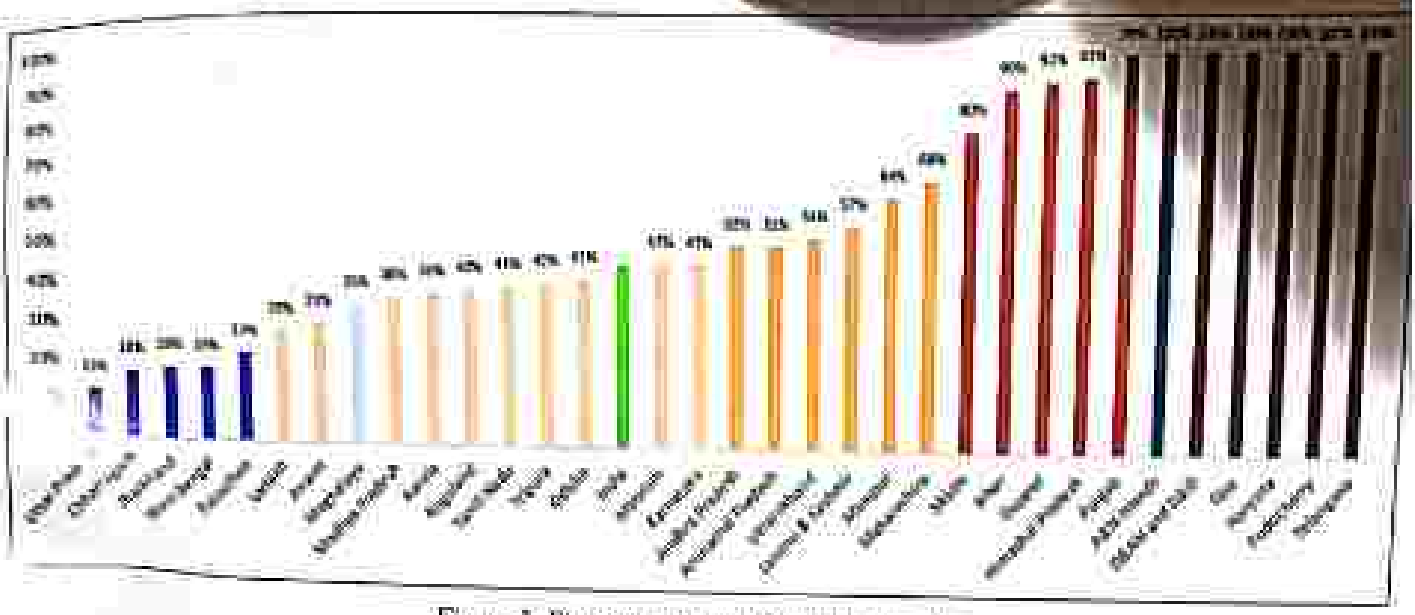

Figure 2: State-wise status of tap water supply

the total number of taps provided accumulatively in the last 70 years.

Community at the Centre

JJM is about achieving long-term drinking water security in such a way, so as to avoid making emergency arrangements through the deployment of tankers or trains, handpump installation, etc., in any village. It envisions working with a 'utility-mindset' and making use of information technology at the village level, empowering and enabling local communities. To ensure long-term assured service delivery to every home and executing the work in a time-bound manner with transparency, involving the village community is the key. The Gram Panchayat or its sub-committee, i.e., Village Water and Sanitation Committee (VWSC)/Pani Samiti, etc., are to shoulder key responsibility in planning, implementation, management, operation, and maintenance of in-village water supply system. A typical VWSC consists of 10–15 members with 50% representation of women and proportionate representation of weaker sections of society. This committee is empowered under the Panchayati Raj Act so that they are able to shoulder the assigned responsibility. As on date, about 5 lakh VWSCs/Pani Samitis have been constituted and made functional, thus signifying the robust institutional mechanism being established at the grassroots.

Every village is being taken up as a unit so that they become water secure, for which a 5-year Village Action Plan (VAP) co-terminus with the 15th Finance Commission period (2021-22 to 2025-26) is being prepared through the participation of the local community, focusing on four key components, i.e., i) augmentation and strengthening of local drinking water sources; ii) in-village water supply infrastructure to make provision of tap water supply to every home and public institution like schools, anganwadi centres, ashramshalas, Health & Wellness Centres (HWCs), community centres, gram panchayat buildings, etc.; iii) greywater collection, treatment, and reuse; and iv) regular Operations and Maintenance (O&M) of water supply systems.

To strengthen and empower the Panchayats to shoulder the responsibility of long-term operation and maintenance, Rs 1.42 lakh crore tied grants for water

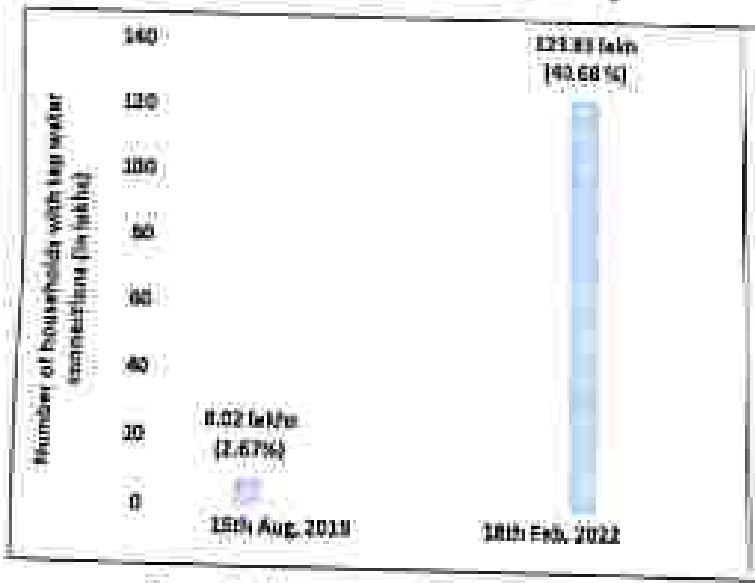

Figure 3: Progress in JE/AES areas

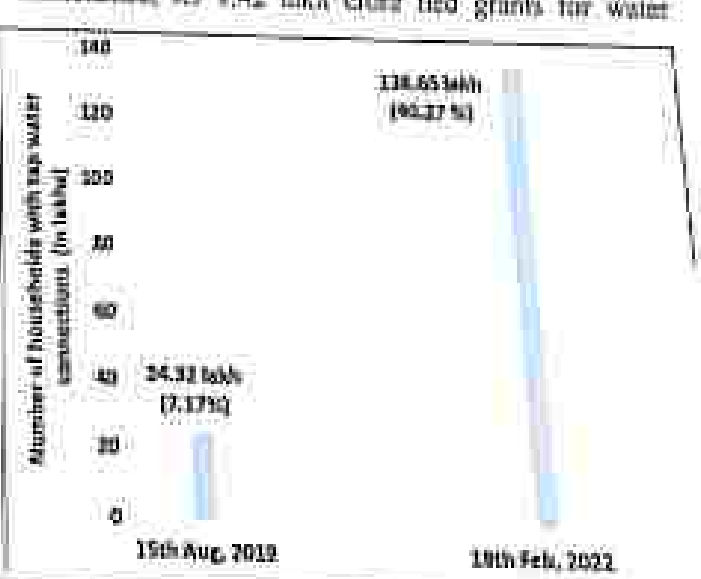

Figure 4: Progress in Aspirational Districts

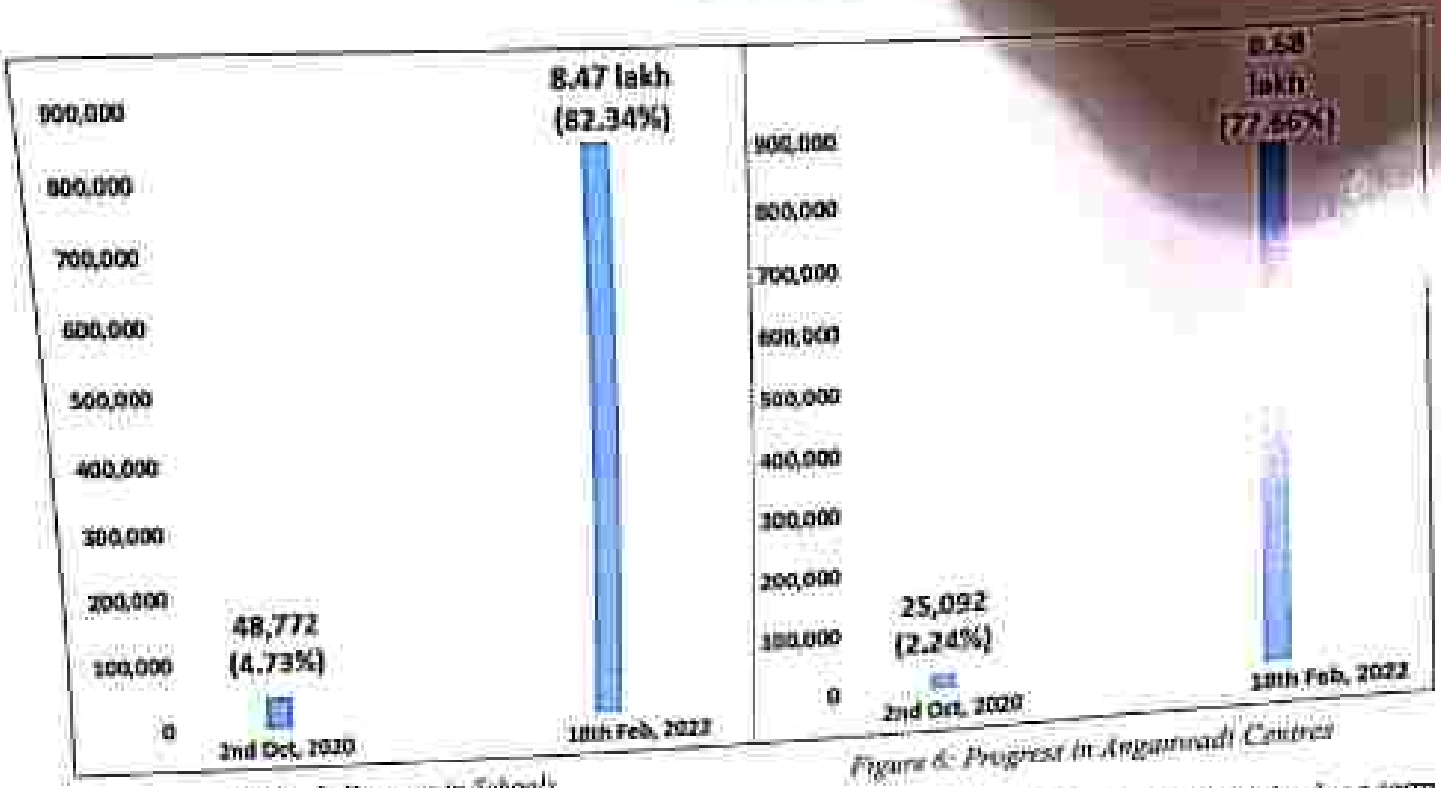

Figure 5: Progress in Schools

Figure 6: Progress in Anganwadi Centres

and sanitation is made available from 2021-22 to 2025-26, in addition to Rs.30,375 crore provided in 2020-21. This assured funding to rural local bodies and panchayats is a game-changer in decentralisation and preparing them to shoulder the responsibility of assured water supply, improved sanitation, and hygiene in rural India. The long-term success of JJM, i.e., assured piped water service delivery hinges on the functioning of Gram Panchayat as a public utility, thus bringing a change in their mindset. This decentralised approach for involving, preparing, developing, and empowering the local village community is the most crucial part of JJM.

The GPs/VWSCs are being trained to plan and utilise the fund judiciously to ensure water service delivery and improved sanitation in villages, as well as to inculcate the habit of contributing towards water user charges for the long-term sustainability of the system.

JJM is a decentralised, demand-driven, and community-managed programme that aims to instill a 'sense of ownership' among the local community. It may not be feasible for State Governments' Departments or their parastatal organisation to manage water supply to every household, and therefore the role of Gram Panchayat and/or its sub-committee has become critical. Moreover, the Panchayats have a constitutional mandate to manage the drinking water supply in villages. State Government and its Public Health Engineering Departments are playing the role of a facilitator. This approach will bring long-term sustainability in the sector and is essentially a concerted effort to transform every village in the country into a fully self-reliant, i.e., Atmanirbhar villages in consonance with the principles of Mahatma Gandhi's 'Gram Swaraj'.

Under JJM, to promote ownership among village communities for in-village piped water supply infrastructure, communities will contribute 5% of the capital cost in the form of cash and/or kind and/or labour in hilly and forested areas such as the North East and Himalayan States, and 10% in other villages. After the commissioning of the Scheme, 10% of the capital expenditure will be given to the concerned GP or VWSC/ Pani Samiti as an incentive, which will serve as a revolving fund to meet the emergency repair and maintenance cost of the Scheme.

Thus, the bottom-up approach is expected to ensure sustainability of sources, water supply systems, as well as financial sustainability.

The Gram Panchayat or its sub-committee, i.e., Village Water and Sanitation Committee (VWSC)/Pani Samiti, etc., are to shoulder key responsibility in planning, implementation, management, operation, and maintenance of in-village water supply system.

Implementation Strategy

To achieve the goal of JJM in a time-bound manner, a well-thought strategy has been developed and adopted. In villages with existing piped water supply system(s), all remaining households, and public institutions, viz. schools, AWCs, ashramshalas, PHCs/ CHCs, wellness centres, community centres, GP building, etc., are being provided with tap water connections

by taking up retrofitting/augmentation of existing water supply schemes, if needed, to make them JJM compliant. In villages where ground/surface water of good quality in sufficient quantity is available, Single Village Schemes (SVS) are being planned and executed, which is the most preferred option as it is easy to operate and maintain by the local community. In villages with adequate groundwater but having quality issues, water is being treated to remove contaminants, and/or a surface water-based water supply scheme from a dependable source is planned. In water-stressed, drought-prone, and desert areas, bulk water transfer, treatment plants, and distribution systems are being planned and executed with equal emphasis on strengthening of local drinking water sources to achieve long-term water security, so that O&M expenses on water transfer/ pumping are kept to the minimum. In isolated tribal hamlets/hilly/forested areas, stand-alone solar-based and/or gravity-based water supply systems are being given priority as such systems have low O&M expenses and are easy to operate and maintain by the local community.

Acknowledging the urgency to ensure potable tap water supply in difficult areas, priority has been accorded to water quality-affected habitations, villages falling in drought-prone & desert areas, Japanese Encephalitis/Acute Encephalitis Syndrome (JE/AES) and Aspirational Districts, SC/ST majority villages and Samsad Adarsh Gram Yojana (SAGY) villages. With a focus on better health and well-being of children, a campaign was started on 'Gandhi Jayanti' in 2020 to make the provision of piped water supply in schools, anganwadi centres, and ashramshalas for drinking, cooking, hand washing, and use in toilets.

In view of the scale of the work, JJM is being implemented truly in a mission mode, for which 'change management' was brought in the system perceiving JJM as an opportunity for the entire nation as the present funding is available till 2024 and it is the bounden duty of every State to provide better services to citizens to improve their lives.

Under JJM, every State/UT prepared a 'saturation plan' to achieve 100% coverage or 'Har Ghar Jal' status by incorporating these elements, followed by 'Annual Action Plans.'

Projected Outcomes

An effort has been made to bridge the urban-rural gaps in terms of services and facilities by focusing on implementation with 'speed and scale' especially in unserviced areas while ensuring that 'no one is left out'. While it is a given or a common expectation in urban areas to have a 24x7 tap water supply, the aspiration is to ensure similar arrangements in rural areas as well. The only difference being the village community shares a common overhead tank, unlike the urban individual household tanks. Further, people should be able to drink water directly from the tap enhancing the 'ease of living' and completely removing the requirement for any domestic purification systems. This vision has been achieved by many advanced countries already and India is ready to ensure the same.

Skilling a Necessity

To ensure the availability of skilled human resources in villages and to carry out regular O&M, local youth are being upskilled as masons, plumbers, electricians, motor mechanics, fitters, pump operators, etc. Also, five women in every village are being trained on using Field Test Kits (FTKs) to test the quality of water supplied, conduct sanitary surveys, and upload data on the JJM portal. Further, there is a boost in the manufacturing industry of pipes, motors, cement, steel, valves, faucets, etc. Employment opportunities are also increasing for the local youth in their own villages.

> **The Panchayats have a constitutional mandate to manage the drinking water supply in villages. State Government and its Public Health Engineering Departments are playing the role of a facilitator. This approach will bring long-term sustainability in the sector and is essentially a concerted effort to transform every village in the country into a fully self-reliant, i.e., Atmanirbhar villages.**

Partnerships & Capacity Building

In line with the motto of Jal Jeevan Mission, i.e., 'Building partnerships, Changing lives', 185 organisations, *viz.* UN agencies, trusts, foundations, etc., have been roped in as Sector Partners to dovetail their resources and efforts in achieving the collective goal of 'Har Ghar Jal'. For building the capacity, reorienting, and training of public health engineers, massive capacity building, training, and community mobilisation activities have been taken up, for which 104 reputed institutions in the country have been involved as Key Resource Centres (KRCs). About 14 thousand local NGOs, VOs, CBOs, women SHGs, etc., are also engaged by States as Implementation Support Agencies (ISAs) to handhold GPs/VWSCs/Pani Samitis. All these efforts are being made to make JJM a 'Jan Andolan'- people's movement.

To build the capacity by providing learning opportunities to public health engineers, the 'National Centre for Drinking Water, Sanitation and Quality (NCDWSQ)' has been set up at Kolkata as an apex institution for Public Health Engineering (PHE). The institute will follow a 'hub and spoke model' and partner with the KRCs, two Centres of Excellence (CoE), and five Professor Chairs being set up across the country and work in the areas of training and capacity building, education,

and academic programmes, research and innovation, and outreach and consulting.

Water Quality Monitoring & Surveillance

About 10 lakh women have been trained across villages signifying the mission-mode implementation of programme with an emphasis on ensuring water quality. Laboratories are being standardised and upgraded across the country. More than 2,000 water quality testing laboratories have been opened to the general public for testing their water samples at a nominal cost and one can also locate the nearby laboratory on Water Quality Management Information System (WQMIS). An innovation challenge is paving the way for portable water quality testing devices for use at domestic as well as village levels.

Innovation and Use of Modern Technology

To leverage new technologies and bring innovative solutions, a Technical Committee under the chairmanship of Principal Scientific Advisor (PSA) to the Government of India comprising of State representatives, scientists, innovators, etc., has been constituted. To ensure transparency, accountability, effective fund utilisation, and assured service delivery, several steps have been undertaken to promote digital governance. The online JJM Dashboard in the public domain provides State/UT, district, and village-wise progress and status of the provision of tap water supply in rural areas. Sensor-based IoT pilots are underway in more than 100 villages for automatic data capturing to measure and monitor the daily water supply. WQMIS has been developed by using the reports generated from water quality testing through FTKs as well as Laboratories.

> There is a need to adopt innovative technology in the sector especially towards sewage treatment, in-situ combustion/ energy production from human excreta, etc. in such a way to reduce the consumption of fresh water to flush tanks, often seen in urban areas. With the massive deployment of sensor-based IoT systems for measurement & monitoring of water supply, testing of water samples for quality and dashboard for data integration and analysis will ensure, transparency, assured service delivery, and grievance redressal.

With an outlay of Rs 3.6 lakh crore, JJM is not just about mere infrastructure creation, but the focus is on long-term assured 'service delivery'. Thus, emphasising the software components, 2% and 5% of the fund is allocated to WQMS and support activities, viz. training, capacity building, IEC, third party inspection, handholding by ISAs, etc., respectively.

Water Security for Development

Understanding water availability and purpose, out of total available freshwater, about 85% is used for agricultural, 10% for industrial, and only about 5% is used for drinking and domestic purposes. All water is received from precipitation during a limited 10 to 40 rainy days or snowfall in the Upper Himalayas, and this water is stored either over the ground or under the ground, to be used during the whole year. Thus, just like food grains that need to be carefully stored and ensured that they are not spoilt, water is a finite resource that needs to be replenished every year and must be consumed judiciously without polluting the sources. Due to issues related to environmental conservation and anthropogenic factors, the construction of new dams to meet the increasing demand for water is becoming more and more difficult.

Thus, to achieve water security, there is no choice except to focus on rainwater harvesting, recharge of aquifers, deepening of water bodies, proper storage, and efficient utilisation. It is even more important to collect water from precipitation and keep it clean for use considering that 256 out of the 734 districts are water-stressed already. This requires village communities, the users/owners to start water budgeting to understand and improve water-use efficiency by changing water usage patterns, shifting to less water-consuming crops, and/or switching to micro-irrigation, i.e., drip and sprinkler systems. Even a small reduction in agricultural use will enhance water availability for drinking and domestic purposes, enhancing the longevity and functionality of water supply systems.

Therefore, in 2019, a new Ministry of Jal Shakti was formed by integrating the two former ministries, i.e., water resources and water supply, to strengthen efforts for a holistic approach to the water sector. Further, to 'make water everyone's business' and to make water conservation a top priority, 'Jal Shakti Abhiyan', a time-bound mission-mode campaign was launched to accelerate asset creation and extensive communication to conserve water and bring long-term sustainability of sources.

Water security, water conservation, and water-use efficiency have to become the priority in villages to ensure long-term sustainability. Convergence with schemes like MGNREGS, Atal Bhujal Yojana, Pradhan Mantri Krishi Sinchayee Yojana, etc., offers opportunities to dovetail resources at the village level.

Further, India focused on ending open defecation first in order to protect the water bodies and to drive a large-scale positive behavioural change towards improved hygiene. Similarly, many initiatives such as Solid Liquid

Waste Management (SLWM), plastic waste management, etc., are being promoted.

Achievement

The mission is making all-out efforts and as a result, currently, about 9 crore (46%) rural households in the country have assured provision of clean tap water supply. Every rural household in 101 districts and 1,40 lakh villages is getting a clean tap water supply. Three States, viz. Goa, Haryana, Telangana, and three UTs, viz. Andaman & Nicobar Islands, Daman & Diu, Dadra & Nagar Haveli, and Puducherry have become 'Har Ghar Jal' States/UTs. This is the 'speed and scale' with which work under JJM is being carried out with undivided focus to improve the lives of people living in rural areas.

India is a shining example on a global platform for its impactful WASH policies that are being driven on such a large scale while building a movement of behavioural change. India is now certainly in a position to transfer/ make available the knowledge/experience to other countries, especially the global south.

Road Ahead

The next steps for JJM would also be to set up further robust institutions such as regulatory bodies, certification provisions, and learning opportunities for engineers as well as to keep innovating on sustainable technologies. There is a need to adopt innovative technology in the sector especially towards sewage treatment, in-situ combustion/energy production from human excreta, etc. in such a way to reduce the consumption of fresh water to flush tanks, often seen in urban areas. The gated communities/upcoming colonies should be provided with such new sustainable technologies to immediately own it up. With the massive deployment of sensor-based IoT systems for measurement & monitoring of water supply, testing of water samples for quality and dashboard for data integration and analysis will ensure transparency, assured service delivery, and grievance redressal.

The mission aims to integrate health data and water supply data to establish disease surveillance. Leveraging new technology, providing quick and updated information meets the aspirations of a new India. The vision is to build public utilities ensuring long-term assured service delivery and hoping that the linked sectors are also influenced by this approach. India is heading to a future where such public utilities will act as service centres in villages, be it for water supply or agriculture, etc., and moving towards overall improvement in economic prosperity.

Views are personal.

Digital Identity

Dr Saurabh Garg

'Aadhaar', the unique, online verifiable digital identity is the backbone of India's Digital revolution. This public digital infrastructure, within a decade after it was introduced, has transformed the way the government welfare programmes are being implemented. The system– built on a unique 12-digit identification ID for each Indian resident– has significantly improved financial inclusion, access to welfare services, tax compliance, retail payments, and the management of government subsidies. Aadhaar infrastructure coupled with new technologies like Blockchains, IoT, etc., can deliver value, while staying within the boundaries of current and future laws of the land. It is most likely the single-most important element in India's exponential growth in fintech services.

When the Aadhaar project was launched in 2009 by the Government of India, it was an ambitious attempt to create requisite technology infrastructure and reach more than 1.3 billion people living in India's sprawling, varied, and sometimes inaccessible territory, to enroll for assigning a unique number, the 'Aadhaar', after de-duplication.

In 2014, it was combined with Jan-Dhan initiative, a financial inclusion programme for India's large number of unbanked households then. These new accounts had the provision to be linked to both mobile numbers and Aadhaar, creating the Jan Dhan-Aadhaar-Mobile, or JAM trinity. Today, more than 80% of all Indians have a bank account, up from half that level when the programme started. The Aadhaar Payment Bridge (APB), the soft infrastructure developed by the National Payments Corporation of India (NPCI), is now the catalyst for most of India's social security and cash transfer programmes. Today, the Central Government uses APB-enabled direct benefit transfers for 314 programmes/schemes. Another 450 programmes of the different State Governments also use these digital rails.

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In its March 2019 report "Digital India," McKinsey Global Institute observed that "the public sector has been one strong catalyst for India's rapid digitisation. The government's effort to ramp up Aadhaar has played a major and critical role."

Efficacy in Expanding Financial Services

Aadhaar has emerged as a preferred identity document because of its features.

- **Aadhaar is 'Know Your Customer (KYC)'-compliant**- The RBI states that if the Officially Valid Document (OVD) submitted for opening a bank account has the requisite personal details and address, there is no need to submit any other documentary proof. Aadhaar has both the details, so it's a valid single document for proof (for small accounts).
- **Electronic KYC (e-KYC):** Aadhaar platform provides e-KYC service. With the consent of the resident, their demographic details along with photographs are shared digitally with a service provider. This has made the customer acquisition process far simpler and cheaper.
- **Aadhaar is a single source of Authentication**- The ease of authentication via Aadhaar has interested financial institutions such as banks, insurance companies, stock brokerage companies, and government-related securities providers among others to consider the number to onboard new customers and to help Indians embrace digital services. Once residents enroll, they can use the Aadhaar number to authenticate and establish their identity multiple times. Aadhaar eliminates the hassle of repeatedly providing supporting identity documents each time a resident wishes to access services, benefits, and subsidies.

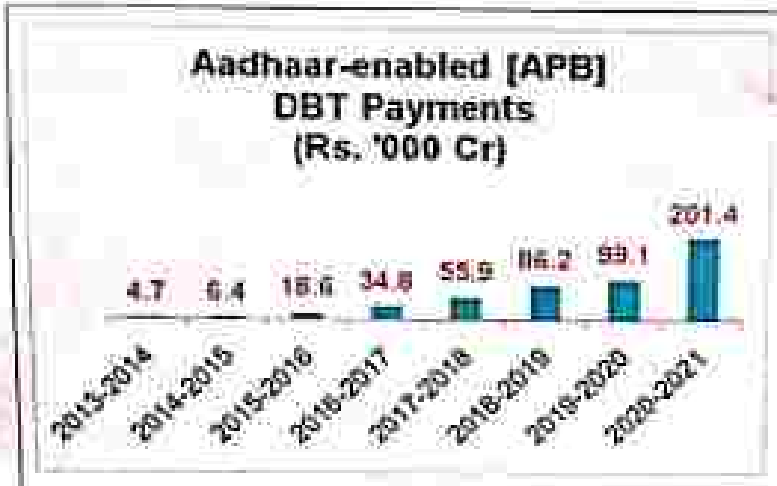
India's digital consumer base is the second largest in the world, and the benefits of technology are being felt by all segments of people. India's rapid pace of digital adoption has been driven by the Government's commitment towards digitising key aspects of the economy, combined with private-sector innovation and investment to promote internet access and use. The Government catalysed the process by establishing a strong national digital foundation– public platforms and infrastructure– and by rolling out a host of digital applications and services. These have created real incentives for citizens to come online.

A suite of open APIs (Application Programming Interfaces)– such as the Unified Payments Interface (UPI) and Bharat Interface for Money (BHIM)/Bharat Quick Response (QR) code for payments, DigiLocker for online document access and retrieval, electronic "Know Your Customer" (e-KYC) for electronic verification of customers' identities, e-sign, APB, Aadhaar Embled Payment System (AEPS), and the Bharat Bill Payment System (BBPS)– form part of India's strong financial digital foundation. In the future, a range of different digitally verifiable identity systems will continue to evolve while upholding the privacy concerns of every citizen. The Government also triggered discontinuous growth in digital payments through the launch, in 2014, of the Pradhan Mantri Jan-Dhan Yojana, the national financial inclusion drive, which opened millions of Aadhaar-authenticated bank accounts. Indians have opened some 44.58 crore Jan Dhan bank accounts (as of 26 January 2022). Digital solutions increasingly pervade lives.

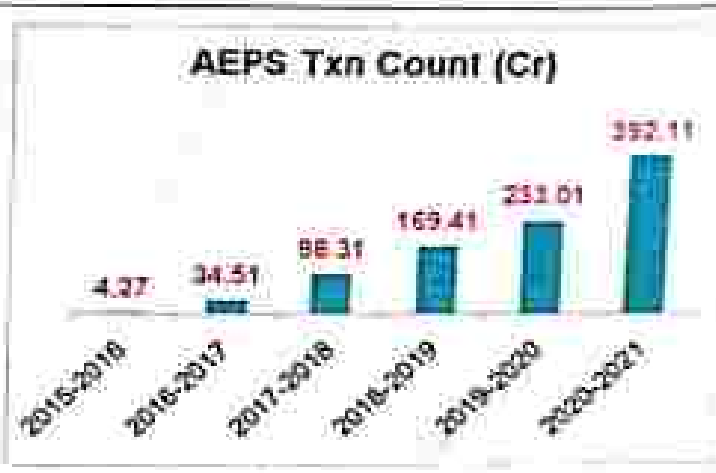
India Stack – a term used to refer to the universal biometric identity programme, Aadhaar, along with a suite of open APIs linked to it– has played a catalytic role in India's digital foundation and in the country's digital evolution. It is founded on the core principles that digital services could be "presence-less", or capable of being authenticated from anywhere, "paperless", or reliant on digital records; "cashless", or truly universalising the access and usage of digital payments; and "consent-based", or allowing secure movement of data authenticated by its owners. Global technology trends have spurred private-sector investment and innovation to expand India's digital consumer base.

The Aadhaar Payment Bridge (APB), the soft infrastructure developed by the National Payments Corporation of India (NPCI), is now the catalyst for most of India's social security and cash transfer programmes.

Fintech innovation has grown rapidly. One survey ranked India second in the strength of the fintech movement, with 76 per cent of consumers saying they use at least one non-traditional firm for financial services. The Government



850 Cr transactions & Rs. 5.75 Lakh Cr cash benefits
129 Cr Bank Accounts seeded with Aadhaar
75 Cr Aadhaar uniquely linked to a bank account



1200 Cr AEPS transactions
40 Cr successful transactions per month
50 Lac Micro-ATMs: 35 Lac transacting per month

has provided the right environment for private-sector innovation through policy labs, regulatory sandboxes, incubation centres, and other testbeds for new fintech and IoT-based applications, for example. Enabling private-sector innovation is critical to achieving Digital India goals.

To ride the fintech wave, banks are collaborating with fintech startups. India's Differentiated Banks (Payment & Small Finance Banks) have also driven significant digital innovation across the spectrum of financial services, facilitated by the banking regulator, the Reserve Bank of India, which has outlined a possible framework for the adoption of Blockchain technologies in the financial sector.

Micro-ATM with Aadhaar system is a well-stabilised system and many more applications can be built on this system. UIDAI is also exploring the opportunities on how we can leverage assisted mode for other new services related to insurance and investments by the residents.

India Stack– a term used to refer to the universal biometric identity programme, Aadhaar, along with a suite of open APIs linked to it– has played a catalytic role in India's digital foundation and in the country's digital evolution.

The number of UPI transactions has increased to more than 4600 million in the month of January this year. It is a massive expansion in the areas of payments, shopping, and e-commerce industries. It is very much clear that digital identities play a fundamental role in this. The India Stack and the technological advancements around its use have worked amazingly well in this area. Aadhaar infrastructure is no different and is evolving in multiple ways. It has already demonstrated its value in the direct payment benefits for the residents. And we are already to expect much more benefits in the terms of technology from Aadhaar as a digital identity. The UIDAI team is ready for this challenge. The AI/ML and other R&D teams at UIDAI are working very well in overcoming the current challenges. The new Aadhaar card has a sophisticated and secured QR code that also includes a photograph. Offline verification of Aadhaar using means such as the secure QR code is also something that provides a viable means of verifying the identity of individuals for various use-cases.

We believe that Aadhaar infrastructure coupled with new technologies like Blockchains, IoT, etc., can deliver value while staying within the boundaries of current and future laws of the land. However, it is very important to know how to use this data for the betterment of residents. Aadhaar is most likely the single-most important element in India's exponential growth in fintech services.

AEPS has also brought banking services like cash withdrawal, balance checking, etc., to the doorstep of the residents. This proved as a boon to the rural population, especially during the recent pandemic.

With 'Fintech' becoming the face of the financial world, an identification system that can go hand in hand with the evolving financial landscape is not just helpful, but essential.

This is just the beginning of the digital revolution, with a lot more to expect in 2022 and thereafter. Face Authentication and liveness detection features, the backbone of video KYC, are now being considered by the majority of the Fintech/BFSI industries as the simplest tools for customer identification. UIDAI is also taking significant steps to introduce the fourth modality of identification– face. Currently, UIDAI validates citizens based on OTP, fingerprint, and iris.

In 2022, it is a given that the majority of the Fintech/BFSI industries shall opt for these digital identity services that shall enable them to offer services at an affordable price and instantly as well.

UIDAI is also working on various new technological fronts and adapting the changes and moving abreast with the industry partners to have a new and fast-paced economy in the country.

Fintech Revolution

Debjani Ghosh

India's fintech landscape has evolved at a breakneck pace in the past decade. The once fully cash-dependant Indian economy has been transformed by the convenience and efficiency of digital services. As we zoom ahead into the tech-decade —'techade', inclusive technologies, innovation ecosystem, human-centricity, and progressive policies will establish India's fintech revolution for the world.

We are in India's techade, where technology will become indispensable to progress and strike a balance between profit and purpose. Today, India is anchoring itself as a global hub for technology and innovation in the digital economy. By any number of key matrices, from 834 million total Internet users to 4617 million total UPI transactions, India's fintech revolution is at a population scale, exceeding those of most countries globally.

To quantify this impact– digital payments have grown 160x in India since 2003, and by 2025 are expected to add 26 lakh jobs and Rs 2.8 lakh crores in economic value[1]. Our traditionally cash-driven economy has responded well to the fintech opportunity that was primarily triggered by a surge in e-commerce and smartphone penetration. This radical evolution of financial services has been continuously enabled by an integrated ecosystem wherein all participants (government agencies, financial and research institutions, technology experts) discuss ideas and turn the market's latent potential into business and economic growth. They say good technologies are invincible.

India's massive digital infrastructure played a key role in driving India's tech adoption with public digital platforms and open-source architecture becoming the core foundation of Digital India. The Government policies and regulations in the sector have followed the philosophy of inclusion and innovation. Years of effort have gone into the development of the fintech ecosystem, including the latest initiatives like Jan-Dhan Yojana (the world's largest financial inclusion initiative), e-RUPI (for cashless payments), India Stack (public digital infrastructure based on open APIs), and the multiple initiatives for financial literacy. BHIM UPI clocked over 3.2 billion transactions in July 2021, marking a game-changing penetration of digital payments in India[2]. FASTag, which became mandatory earlier last year and enables online toll collection, has already facilitated 192 million transactions. UMANG App which provides a one-stop platform for multiple government services has witnessed cumulate 1.7 billion transactions.

This rapid increase in the digital footprint in a country like India which was traditionally known for its vast swathes of unbanked and financially underpenetrated consumer

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segment, has not gone unnoticed. Several nations have shown interest in learning from India's digital infrastructure, especially for the high levels of transaction security and relatively low instances of technical glitches or frauds. The Additional Factor of Authentication (AFA) through a PIN or OTP has been recognised globally as an Indian innovation responsible for relatively lowering the incidences of frauds.

The Prime Minister had declared in the 2021 International Financial Services Centres Authority (IFSCA) event that the next stage of growth for India's fintech ecosystem will come from the four pillars of income, investments, insurance, and institutional credit. The adjunctive of financial inclusion across the nation will unify these pillars and pave the way for the industry's success, as well as our goal of a USD 5 trillion economy.

Fintech in Pre-Pandemic India

The best way to know where the industry is headed, and the patterns according to which it functions, is to look back at the journey and the catalysts that have got us to where we are today.

We can term the period prior to 2016 as *Digital Payments 1.0*. This was a period defined by the shift from cash to e-transfers - a time when cards and Real Time Gross Settlement (RTGS) were the most popular means of payment. RTGS was introduced around the year 2003-04 and recorded 100 transactions in that year, while the number of retail e-payment transactions was 21.5 crore. By 2010, all digital payments combined saw an over 2x increase that was primarily driven by business transactions.[1] This certainly was a period of steady growth at a pace which is expected from any sector. However, the use of digital payments was limited to premium retail and B2B segments, there was a lack of education for individual customers, and mobile and internet penetration were still in their early stages.

With the widespread use of 3G and 4G mobile technology post-2011, focus invariably shifted to the use of digital payments by individual consumers and mobile banking grew. This is the period of Digital Payments 2.0, which lasted till 2016. Halfway through that time (by 2013), digital wallets alone registered 3.3 crore transactions, and by 2016, mobile transactions overall grew 10x.[2] This period was largely indicative of the favourable appetite that Indian consumers have for technology innovation in Banking, Financial Services, and Insurance (BFSI). Supporting this shift on the provider side was the addition of feature-based credit and debit cards, new mobile banking applications, and greater digital transformation for the front, back and middle offices.

With the demonetisation in late 2016, 86 per cent of all cash in India was withdrawn from circulation. This disruption acted as a catalyst for further evolution in the industry and characterised Digital Payments 3.0, the 'network effect' era. This phase can be best described with technology and ecosystem advancement converging to push the next stage of exponential growth. During this era, India started exporting fintech solutions, rural internet use outgrew urban usage, there was a record-high number of Person-to-Merchant (P2M) transactions, and fintech entered the mobile-commerce age.

Covid-19 and Digital Payments

The year 2020 was a turning point for digital transformation and consumer behaviour. The disruption caused by Covid-19 has been one of the biggest humanitarian crises after the great recession. Once again, necessity brought about a fresh round of invention as virtual and touchless became the primary modus of conduct, and all businesses had to roll out digital applications or services to deal with the lockdown.

> **India's massive digital infrastructure played a key role in driving India's tech adoption with public digital platforms and open-source architecture becoming the core foundation of Digital India. The Government policies and regulations in the sector have followed the philosophy of inclusion and innovation.**

India already had the right infrastructure for digital payments on a large scale, which enabled it to reach a high of 411 crore monthly transactions in November 2020. Despite the economic downturn, fintech payments saw investments double in the first half of 2020. Even traditional BFSI players started accelerating their fintech initiatives and investing in emerging technologies, either by themselves or in partnership with Software as a Service (SaaS) providers, for the rollout of their

digital services. As of December 2021, India had over 17 fintech startups that joined the Unicorn club, and the sector saw cumulative funding of around USD 27.6 billion. Additionally, India is ahead of US, UK and China combined when it comes to real-time online transactions, with 25.5 billion real-time payments recorded in 2020.

The next stage of evolution, Digital Payments 4.0 will focus on reaching the masses with low-cost solutions. In India, the volume of digital payments is expected to reach 54,800 crores by 2025, a 16x rise in just five years (since 2020) driven by growth in digital commerce, personalised solutions, digital convergence, and regulatory innovation.

> The next stage of growth for India's fintech ecosystem will come from the four pillars of income, investments, insurance, and institutional credit. The objective of financial inclusion across the nation will unify these pillars and pave the way for the industry's success, as well as our goal of a USD 5 trillion economy.

The Network Effect

We saw the network effect in phase 3.0 that was enormously instrumental in driving attention and investment into digital payments and fintech at just the right time. In 4.0, or the post-Covid era, digital payments will gather such scale and reach what India will account for an estimated 2.2 per cent of the over USD 12 trillion global digital payments sector by 2023 as per PWC and PCI report. This growth will result in a significant boost to India's digital economy which is expected to reach USD 1 trillion by 2025. Additionally, by 2025, India will be at nearly 95 per cent financial inclusion across all user segments, will have achieved over 5x growth in e-commerce, and will add over Rs 25 lakh crores to the GDP by MSME digitisation[1].

Potential of Digital Payments 4.0

However, to ensure sustained growth there are a few areas that the ecosystem should pay attention to. Policy support in the area of data security and fraud management is essential. The use of new technologies like Blockchain, geo-fencing or geo-tagging, or the implementation of a framework to prevent QR-code-based phishing attacks can be a step forward in ensuring a secure and stable digital financial ecosystem. Greater customer awareness is also important to prevent frauds and cybercrimes. Secondly, with the mass adoption of digital payments, we need to simplify the KYC policy for merchants and customers. And lastly, we need to continue building the payments' infrastructure and facilitate offline payments inclusive for cities that fall into the categories Tier 3 and below.

Innovation cannot happen in silos and it has therefore become necessary to collaborate with other countries in linking national payment infrastructures.[2] India and Singapore have already taken a step in this direction. Their respective payments systems, i.e., UPI and PayNow will be linked by July 2022, allowing users to make instant and low-cost fund transfers directly from India to Singapore. The other big piece of enabling truly global stacks would be the harmonisation of some of the basic laws and regulations in the digital economy.

The Government initiatives along with India's strong startup and innovation ecosystem have laid a strong foundation for the growth and development of India's fintech maturity. In just two decades, the evolution of India's fintech ecosystem has been extraordinary, and the outlook for the future is promising. As we reflect on the journey that has brought us here today, it has been continuous efforts by the integrated ecosystem that has enabled success.

In the last seven and half decades, India has made a tremendous leap to become a robust digital economy. Winning the techade, India must build on its digital advantage and pivot towards a more data-driven structure of governance to create a more inclusive, sustainable, and impact-led innovation. The future of our country will be defined by how well we can integrate digital solutions across platforms, build digital talent at scale, and balance between profit and purpose to truly lead in this techade. ❑

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Artificial Intelligence in Financial Sector

Balendu Sharma Dadhich

The crucial role of Financial technology is unquestionable in India, where transactions worth Rs 22.5 lakh crore were made through digital systems in the last financial year. It is expected to go up to Rs 75 lakh crore in 2026. Due to the government's efforts and in the wake of the Covid-19 catastrophe, the sheer popularity of digital payments and fintech in India has startled the world's leading economists and technologists. The ACI Worldwide report concludes that India had become numero uno in the world in terms of online transactions two years ago itself. China, South Korea, England, Japan, and America were trailing us which happened when digital transactions in India stood at USD 25 billion that year. Today, manifold progress has been made since then, and the successful journey continues.

India's success in the field of fintech is a result of various facets such as the rapid adoption of digital technology by banks and the establishment of a comprehensive system of digital payment modes. Such a technical system has been developed in the country which can be integrated into other technical systems or combined with them. The system encompasses everything from Unified Payments Interface (UPI) to dozens of digital payment applications and cards like RuPay to micro-banking. These systems have progressed rapidly, and today we are in a position to conduct money transactions using APIs even in the applications used for chat, which is considered the next big revolution in the financial sector. Apart from all this, another area of blockchain technologies is opening up, which has the potential of new possibilities.

Two questions naturally arise in the wake of such prolific advancement. First, what comes next; and second, what are the challenges emerging within it. Given the tenfold increase in financial transactions in India between 2019 and 2021, the first question tries to find out whether this trend will continue like this. And if yes, for how long. The answer is that there are still many possibilities to take this process forward in India, and this phase may continue to grow at a swift pace for the next five years. The answer to the second question is that while the advent of digital technologies has, on one hand, resulted in incredible savings in terms of money, resources, labour, processes,

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and time, on the other hand issues related to security and privacy have also cropped up. Frauds, identity thefts, and dozens of other crises have come to the fore, harming the common man and our financial system. Although the level of loss as compared to profit is only marginal, the financial sector should not be vulnerable to even the slightest security lapse.

There are many challenges today that have not been seen before. Something needs to be done to keep these systems impenetrable. What can be said about a country's criminal disappearing in the internet universe after committing a crime in another country? We have also seen that an SMS becomes a means to access a person's bank account and steal his savings. Human beings have a role in finding their solution, but results cannot be achieved solely based on human capabilities. The answer to the challenges emerging from technology should be equally fast-paced, and this solution can also be achieved with the aid of technology. Digital security systems are still in place at several stages in the financial system, and the consumer has also become more vigilant than before. Still, the new-age challenges continue to confront the capabilities of the existing security system. Perhaps we need to find a safe haven in artificial intelligence, quantum computing, and blockchain.

But it is also not that the scope of using these new technologies is limited only to maintaining the security of the data and increasing efficiency. They can also play a role in better handling of the conventional functioning of banks. Today, thanks to artificial intelligence and data analytics, it is also possible to analyse the information very accurately and predict how to control the bad account, choose the right persons for loans, and look for better opportunities for reinvestment. In addition to all this, processes such as providing better services to customers and maintaining personal contact with them have also become more manageable and possible with the help of technology. Earlier, we were dependent on human effort for these initiatives. That is why despite deploying more human resources, the results were not as good as achievable today with less human resources.

The role of technology in the financial sector is becoming increasingly intensive. Today, crores of people have become part of the banking system through Jan-Dhan Yojana. Apart from these, financial services are making way to many people in the formal and informal sectors. With the advent of Aadhaar cards and mobile connections, many banking and financial sector processes have become more manageable, resulting in an increasing number of consumers in the financial sector. Where earlier it used to take a few days or a few weeks to open Demat, bank loan and investment accounts, etc., now it takes only a few hours. Though it depends on the preparedness of the particular bank, the speed of processes has been accelerated four to five times. The procedures related to KYC (Know Your Customer) have become more effective even after becoming more effortless than before. With the use of mobile and Aadhaar, it has become possible to authenticate the identity of the actual account holder on the spot. There has been a widespread expansion of internet and mobile technologies in India, which has helped create the right ecosystem and background for all this. The government has shown farsightedness, and industries have also taken up many new initiatives. Today, the One Time Password (OTP) that we have come to use frequently, many experts consider it a gift of the Indian financial sector to the world, as cheap, effective, and robust method of a person's identity verification.

The impact of all the changes is also visible in financial digitisation. There is a flood of mobile applications used for money transactions. More than 60 per cent of transactions are covered under the UPI, and more than 250 banks are members of it. Within no time, the scope of some of these has become even more extensive than many banks. Now RBI has started providing money transactions even on ordinary mobile phones without the internet facility, indicating the magnitude and totality of the whole development. According to a study, the situation will change further by 2026, when 44 per cent of the total financial transactions in India will come through payment gateways and aggregators, while 34 per cent will be done through QR codes. Not only this, 22 per cent of the payments will be done through POS (Point of Sale) machines (handheld).

While the advent of digital technologies has, on one hand, resulted in incredible savings in terms of money, resources, labour, processes, and time, on the other hand issues related to security and privacy have also cropped up.

Nowadays, a new area is also gaining popularity in financial technology called 'Buy Now, Pay Later (BNPL). These are loans of a small amount for which negligible or very little interest is charged. Small loans are also being offered for smaller payments (such as movie tickets or food bills), to be repaid over a few days, weeks, or months.

Today, the One Time Password (OTP) that we have come to use frequently, many experts consider it a gift of the Indian financial sector to the world, as cheap, effective, and robust method of a person's identity verification.

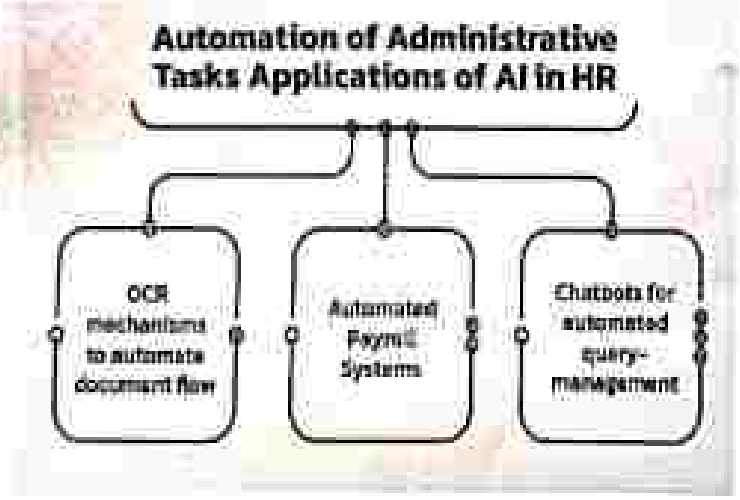
You have probably heard about the concept called Big Data which implies that today, information is being generated in infinite sizes based on the activities of people on digital mediums. In the light of these changes, technologies such as Artificial Intelligence, data analytics, cyber security, and quantum computing need to take the driving seat to focus on both the opportunities and challenges of the modern era. AI plays a vital role in the technologies that monitor and analyse customer behaviour and activities. If it is analysed properly, it can be used to get the best results in economic, political, defence, and other such areas. It also applies to the financial sector, where banks can grow their business and reach good and safe customers by analysing such data. Predictive analysis is often mentioned in the field of data analysis. It can be predicted who may need a loan, who will want to transfer the loan taken from another location, and who will face this kind of need in the coming years. Similarly, it can identify people facing adverse circumstances, and giving them loans can prove to be a loss-making deal.

These technologies can also be of excellent use in fraud prevention. First, AI can recognise similar patterns, and secondly, it can indicate what methods can prove effective to solve them. If a criminal ever repeats a fraudulent pattern, this technology can alert security systems and block payment systems. In the year 2020, various companies lost about USD 56 billion through online frauds. This amount is about 42 lakh crore rupees in Indian currency. Nowadays, there are threats like ransomware that can cripple the financial sector. Banks, financial institutions and companies, and governments are not entirely safe from this challenge. In such a situation, AI and data analytics can emerge as the backbone of our security solution systems. Quantum computers can play an important role in these works in the coming days.

Criminals who commit crimes like money laundering are considered very cunning and technically capable. Traditional methods and existing techniques are ineffective in identifying their activities. AI can 'sniff' the suspicious activities of such people. The same applies to identity theft, misuse of credit cards, etc. For example, suppose someone's credit card has been used at multiple places simultaneously or from a place where the chances of presence of the person concerned are negligible. In that case, it is only the technology that can immediately point out such crimes.

Nowadays, the role of Chatbots equipped with AI is increasing in providing services to customers. These are software capable of analysing the pre-existing data and the questions asked by the customer and answering them at the same time. You've probably seen a box on some websites that says– 'How can I help you?' Such boxes are also seen on the websites of many banks. These are the chatbots that can be taken as faceless robots. When one starts chatting with them, they respond promptly and can access one's personal information. When the customer's questions go beyond their capabilities, they transfer communication to a human. But before this, all the process is done efficiently that one cannot perceive that they are not talking to a human being. These chatbots can interact with hundreds of millions of users simultaneously and can provide solutions to their inquiries, questions, and general doubts. Based on AI, these capabilities benefit the banks and the customers. Additionally, the efficiency of banks increases, and they can reach more and more customers.

In the coming years, the first of the five critical areas in which we will witness constant change and innovation driven by technology is– making the functioning of the financial sector fast-paced, safer, and more organised. The second area is to seek, identify and convert new possibilities into opportunities. The third critical area is interaction with customers, where the remaining barriers and limits will also be knocked down in the days to come. The fourth big area is the ability to relate financial processes to people's backgrounds and behaviours, which can bring about a paradigm shift in the sector. The last and fifth area is cyber security, which will ensure that our financial infrastructure remains secure, despite the enormous increase in the scope and volume of transactions, and variations in the financial sector. ❑



Rural Banking and Financial Services

Osama Manzar
Megha Kuthiala
Dr Syed S Kazi

Schemes such as JAM (Jan Dhan-Aadhaar-Mobile) Trinity and Digital India marked a watershed moment in the financial inclusion of rural India. The digital push gave a new fervour to making financial and banking services accessible to rural areas. In 2016, the National Payments Corporation of India (NPCI) launched the UPI to streamline the digital payments system in India. As per NPCI data, in 2021 UPI has transacted Rs 6.39 trillion.[1] However, with only 28% internet participation from rural India, these transactions largely tell the story of urban India.[2] Yet, one cannot ignore the increasing participation in digital payments and banking from rural India.

Steady changes in rural India's digital usage for financial purposes owe themselves to increasing Internet and mobile penetration. It is linked to the gradual success of BharatNet, the world's largest rural broadband connectivity programme, which according to India's Finance Minister accounted for 13,000 terabytes of data consumption in June 2021.[3] Rural India is no more isolated unlike its urban counterpart and is fast catching up with the speed of the Internet. The growth in digital financial services marks the landmark rise of the rural digital citizen.

The rural Indian economy is primarily cash-driven. Undergoing a change in its predominantly agrarian image, there is an increasing diversification in jobs and incomes in rural India. The non-agricultural sector now contributes two-thirds of agricultural income.[4] Over the years, Banking Correspondents (BCs) have performed a central role in digitally empowering rural areas. They are agents of the bank who extend banking services beyond the physical reach of brick and mortar bank branches. Banks have also pushed for Aadhaar and phone number linking. By using digital means, BCs enable access and education of the digital financial ecosystem to rural citizens.

Identifying this, since 2017, Digital Empowerment Foundation (DEF) has been working with BCs to increase digital financial literacy and participation at the grassroots level. We spoke to twenty such BCs to understand the digital financial literacy experience in rural India. We approach this from both an access and a delivery perspective in rural India, the two key pillars of unpacking the digital financial developments. DEF has established more than 2000 digital resource centres across India run by Soochnapreneurs (information entrepreneurs) who also serve their community as a "banking correspondents".

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Benefits: Saving Time, Distance and Money

"Without the benefit of digital services, our lives will be incomplete," said a woman BC working in Rajasthan. All our BCs (Soochnapreneurs) unanimously agreed that digital banking and financial services have many benefits for the common rural citizens. Access to digital banking services has promoted widespread usage of digital financial and banking services by rural citizens, especially at the time pandemic and lockdown when going to far-off places was next to impossible.

All BCs echoed the convenience and ease of transactions permitted by digital payment and banking services. This is particularly crucial given that a bank branch covering many villages in the district, is located far away from most villages. In an economy where every penny matters, one has to spend money to earn money from the bank. "It's Rs 20 in a one-way bus ticket or Rs 50-60 in petrol. Then we have to walk 2 kms," said a BC in Rajasthan. Similarly, one can borrow from relatives without the cost of travelling.

Even ATMs are sparsely placed. As per the World Bank, India's rural areas have only 20% of the country's ATMs.[4] It estimated this to be one ATM per 10 villages. While almost all BCs said that they do withdraw money from ATMs, a few pointed out that this is rare. They mostly rely on online transactions. One BC in Rajasthan never withdraws money from an ATM because it is located 20 kms away from his village. AEPS, i.e, Aadhaar Enabled Payment System makes it easy for people like him to manage all their financial transactions.

No Cash–No Theft

Fear of theft is a widespread concern in rural India. This ranges from storing money at home to carrying large amounts on one's person while going to the market. 'The fear is particularly acute on the route back from the bank after withdrawing a lump sum of cash', noted a BC in Haryana.

One BC in Madhya Pradesh said that he doesn't even carry his Debit Card. "What if a friend sees my PIN and misuses my card? What if I lose it or it's stolen?" he commented. For him, even the physical aspect of a digital tool such as an ATM and debit card is a safety burden. He feels reassured by the double security and convenience provided by an SBI App which allows him to withdraw money from any SBI ATM on the rare occasion when he needs to. The App requires a self-generated PIN and an OTP generated at the time of withdrawal to secure access to cash from one's account.

Convenience of Access: 24x7 Money

"What if it's a bank holiday and you can't withdraw your money? Earlier, very few had debit cards. Your money is stuck in the bank," observed a BC in Madhya Pradesh. One bank serves many people. Plus, there are days when banks are off. "There were big lines of senior citizens withdrawing their pensions. They'd come on the day the pension was deposited. Not all could be served by the bank in a day so the withdrawal would be delayed," pointed out a BC in Haryana.

Digital access enables people to access their money anytime and anywhere. Digital payments make it easier to pay exact amounts without worrying about change, said a BC. Many BCs across States pointed out that one can easily purchase goods in the market even if they forgot to carry money or had to make an emergency purchase.

Making Budgeting Easier

"The phone makes it easy to view all transactions and budget your expenses," said a BC in Haryana. Net banking allows easy access to bank statements. Even digital payment apps linked to accounts make it easy to view account balance. Phones make personal financial management simpler for every household and foster digital financial citizenship.

Breaking Barriers: Universalising Access to Finance

Rising awareness and digital financial literacy camps have increased access to digital financial systems. 'Almost all men in the village use digital financial services either themselves or through the BCs', reported many BCs across States. Rising education levels have informed many young women who run their own business, are employed or are graduates, to use online financial transactions. Many BCs, including women, specifically target educating and training women of their village to empower them digitally and financially.

Over the years, Banking Correspondents (BCs) have performed a central role in digitally empowering rural areas. They are agents of the bank who extend banking services beyond the physical reach of brick and mortar bank branches.

Age is another hurdle surpassed by digital access to financial services. While many youths enthusiastically use digital modes themselves, senior citizens can easily access their pension without making physical trips to

distantly located banks. They also don't need to fill out long complicated forms anymore. "Senior citizens and Adivasi women approach us for help," said a BC in Madhya Pradesh. Another BC in the same State makes home visits to senior citizens and women who can't leave their homes to enable their access. Fingerprint machines to withdraw money also make access easier for senior citizens and even people with lower literacy levels.

Enabling Businesses and Entrepreneurs

"Since Covid lockdown, almost all shopkeepers have put up QR codes," said a BC from Madhya Pradesh. Digital payments promote the convenience of purchases and make it easier for entrepreneurs to receive payments without default. Most businessmen approach BCs to transfer larger amounts of money to their vendors, withdraw cash or deposit money. Some have learned to operate digital banking themselves and don't approach BCs anymore. Many women entrepreneurs, who operate Kirana stores, run a dairy business or a tailoring shop use digital services for improving their business operations.

Challenges

At the time of launching Digital India, internet and server connectivity were the foremost concern of policymakers. Efforts were made to ensure internet and mobile penetration through the country. While a lot has changed, there is a long way ahead. Some BCs said they never face any issues. On the other hand, some said that while they do face network and server issues, it is rare. A few others observed the improvement in network connectivity when compared to the beginning of the digital journey.

A village in Madhya Pradesh faced severe confusion when their online account balance didn't match their offline balance received from the branch because the bank's server was down. The plight continued for 15 days and eroded users' trust. Users lose trust when their money gets stuck midway during online transactions due to network and server issues. The user's fear of fraud, mistrust of the digital system, and lack of understanding of the internet affect the situation. "Over time and with experience, we know that money will come back to the account in a maximum of 7 days. So now we confidently reassure the person," said a BC in Rajasthan.

> Rising education levels have informed many young women who run their own business, are employed or are graduates, to use online financial transactions. Many BCs, including women, specifically target educating and training women of their village to empower them digitally and financially.

Grievance Redressal Mechanisms

BCs are commonly the first point of contact of aggrieved users. BCs and users call the toll-free helpline number of the bank to register their complaints. Many reported having to approach bank officials. In Rajasthan, a woman BC received her money after registering an online complaint since the bank officials had been unresponsive. Upon action by senior officials, the branch officers called her to come to sign the application and expressed shock that she had filed an online complaint. Another BC avoids approaching the bank because bank officials are rude. A person with a disability felt that his money transfer application was scrutinised more closely because officers were suspicious of him having a large amount of money, despite knowing that he is a BC. However, most BCs reported not facing problems or even having to visit banks to resolve issues.

Victims of Fraud: Lack of Trust and Literacy

The increasing use of digital payments has been accompanied by increased cases of online fraud. Criminals, posing as bank officials, obtain sensitive information from gullible and usually illiterate users. They withdraw large amounts of money or empty the victim's bank account entirely. Most people are wary of technology and such instances only erode the trust further.

Gendered Use of Digital Financial Services

"Very few women use it," was a common response we received upon inquiring how many women users are there in the village. From recording a low of 1% to a high of a mere 45% of women users in the entire village, we wondered why so few women used phones. Educated, young graduates, and working women formed a prime part of digital users, a clear attribution to the rising education rates of girls.

"Older women who must be 45+ very rarely use phones," observed a BC in Madhya Pradesh. He added that even in cases where women have a bank account, the husbands' numbers are registered to the account and so husbands

operate those accounts. In some places, educated young girls use it for limited purposes of phone recharge or payments. This is detrimental to the government's efforts to open bank accounts for women to encourage their financial participation and attain financial independence.

"They don't take any interest. I have tried explaining the importance to them but still, they don't. They don't have mobile phones," said another BC from Madhya Pradesh. The few who do have phones have keypad ones. "It is the men of the household, husbands, and sons, who largely own Android phones and operate digital services," said a BC in Rajasthan.

Patriarchal norms that attribute financial and household power to men hinder women's access to digital infrastructure and services. We've mentioned, some BCs visit women who can't step out of their homes. While enabling a limited form of digital financial access, it defeats the idea of digital independence enjoyed by other users.

"I do purdah. Men feel uncomfortable talking to me directly. They either bring their wives, or I take the help of a senior woman or child to help mediate the conversation," says a woman BC from Rajasthan. She loses out on business customers since fewer men come to her for work.

Sustaining a Banking Correspondent

Operating a business is tough for many banking correspondents. Some have diversified into taking other projects or including ancillary services to maintain a steady income. A woman BC in Rajasthan says, "My shop is in my house and is located a little outside the village. I get few customers. I want to open a shop in the village, but I need finance and infrastructure to be able to do that." Other BCs find it difficult to operate since they cannot afford a portable laptop, scanner, etc., required for business.

Sometimes, customers deposit money into BCs' personal account who then transfers it online on their behalf.

Digital payments promote the convenience of purchases and make it easier for entrepreneurs to receive payments without default. Most businessmen approach BCs to transfer larger amounts of money to their vendors, withdraw cash or deposit money.

"Since I don't have a BC of the bank in which I have a personal account, the bank levies charges and I have to ask the customer to pay that." Opening of other banks' BCs and improvement in people's own knowledge of digital operations have also affected their business, note some BCs.

A BC in Rajasthan finds new products or changes confusing and wants regular training programmes by banks. Being updated will help maintain people's trust. Some BCs report that other intermediaries treat customers badly, don't give adequate information, or commit fraud. "To ensure trust and transparency, we give out slips, withdrawn amounts, and balances that the customer signs. We also keep our own record," says a BC in Madhya Pradesh.

'Phygital' Banking and Financial Services

Time and again, banks, governments, and private institutions have tried to address the two building blocks of financial inclusion– access and delivery. Recently, the Finance Minister urged the Indian Banks Association to increase the presence of banking services in rural India by deciding where they need to be physically present and where digital services can be extended.[5] The World Economic Forum believes that a phygital strategy, which balances physical and digital interactions as an absolute necessity is the way forward in the new normal.[6] In this vein, formulation of new products and easing regulations for simplified product and service delivery is the need of the hour. Banks and private companies can invest in awareness and reorientation training for BCs and users, to alleviate trust and digital literacy issues. A cohesive and collaborative effort that increasingly shifts the offline to online, while maintaining necessary aspects of the offline is required. A model that converges physical and digital into mutually complementary ways is the way forward to the digitally and financially empowered 'Bharat'. ❑

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Inclusive Infrastructure

Sachin Chaturvedi

In the recent past, the focus of Indian economy has been on inclusive development with emphasis on social sector, employment generation, low carbon footprints, and technology innovation. Though India's annual budget statements have addressed these issues comprehensively in the past few years, one cannot ignore the fact that challenges to lives and livelihoods have assumed unforeseen proportions globally with significant rise in vulnerabilities in India as well.

The new economic policy has unfolded the following five features capturing the whole new narrative, which became evident not only in the budget of this year, but also of the past two years. These five key features are: delivering quality social sector development over quantitative outcomes; moving from entitlement to entrepreneurship approaches to support widespread livelihood generation; localisation of development; achieving low-carbon trajectory in economic growth; and leveraging digital and technological solutions. Though India's annual budget statements have addressed these issues comprehensively in the past few years, one cannot ignore the fact that challenges to lives and livelihoods have assumed unforeseen proportions globally with significant rise in vulnerabilities in India as well. There is even stronger emphasis on India's growing leadership on sustainability now. While the Government's consistent efforts in the past few years for achieving quality economic growth, promoting entrepreneurship, and leveraging technologies provided some cushion and enabled faster recovery, there are immediate concerns that need short-term and long-term mitigation strategies for vigorously carrying forward the relief measures announced in the wake of the pandemic in 2020.

The Government's sharp focus on social infrastructure development in the last couple of years is reflected in the fact that the total budget allocation for major centrally sponsored schemes in areas of rural roads, housing, drinking water, sustainable urbanisation and transportation, and infrastructure for healthcare went up from around 19 per cent in 2019-20 (actual) to almost 33 per cent (BE) among all centrally sponsored schemes (Table 1), suggesting comprehensive perspective towards supporting inclusive recovery.

Expanding Economic Opportunities

In order to strengthen infrastructural facilities, among others, there are provisions for telecommunication sector in general and 5G technology in particular, to enable growth and offer job opportunities. Further, there are sunrise opportunities for Artificial Intelligence, Geospatial Systems and Drones, Semiconductor and its ecosystem, space economy, genomics and pharmaceuticals, green energy, and clean mobility systems which hold immense

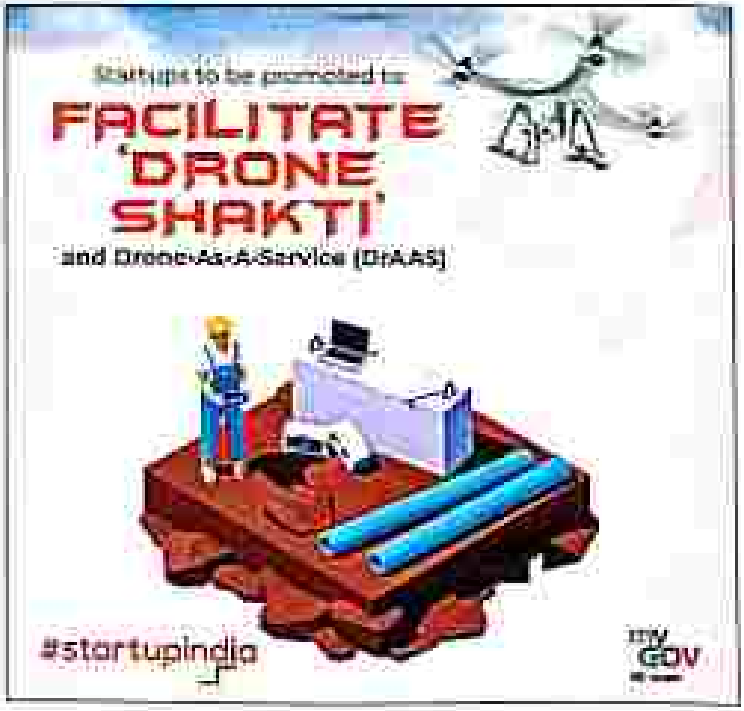

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Table 1: Budgetary Allocation for Centrally Sponsored Infrastructure related Schemes, Rs. Crores

Central Sponsored Schemes	2019-20 (Actual)	2020-21 (Actual)	2021-22 (Revised)	2022-23 (Budget Estimates)
Pradhan Mantri Gram Sadak Yojna	14017.48	13687.50	14000.00	19000.00
Pradhan Mantri Awas Yojna	24963.65	40259.84	47389.84	48000.00
Jal Jeevan Mission / National Rural Drinking Water Mission	10030.42	10998.22	45011.00	60000.00
Pradhan Mantri Ayushman Bharat Health Infrastructure Mission				4176.84
Urban Rejuvenation Mission: AMRUT and Smart Cities Mission	9598.68	9753.61	13900.00	14100.00
Sub-Total	*58610.23 (18.9)*	*74699.17 (19.5)*	*120300.84 (29)*	*145276.84 (32.8)*
Grand Total	**309552.68**	**383975.69**	**415350.81**	**442781.19**

Source: Author's compilation from Union Budget of various years

potential for assisting sustainable development at a large scale and modernise the country. At the same time, they provide employment opportunities for youth, and make Indian industry more efficient and competitive. In this respect, the government has also promised supportive policies, light-touch regulations, facilitative actions to build domestic capacities, and promotion of R&D that would guide its approach. For R&D in these sunrise opportunities, in addition to the efforts of collaboration among academia, industry and public institutions, the government support has been ensured.

As housing is an integral part of infrastructural development, it is expected that 80 lakh houses in 2022-23 would be completed for the identified eligible beneficiaries of PM Awas Yojana, both rural and urban. In this regard, the Central Government will work with the State Governments for reduction of time required for all land and construction-related approvals and promoting affordable housing for middle class and Economically Weaker Sections in urban areas. The financial sector regulators would be roped in for expanding access to capital along with reduction in cost of intermediation.

Giving added momentum to development of North Eastern Region, a new scheme, namely Prime Minister's Development Initiative for North-Eastern region, PM-DevINE, would be implemented through the North-Eastern Council to fund infrastructure, in the spirit of PM GatiShakti, and social development projects based on felt needs of the North-East. As border villages with sparse population, limited connectivity, and infrastructure often get left out from the development gains, such villages on the northern border would be covered under the new Vibrant Villages Programme. These would cover aspects such as construction of village infrastructure, housing, tourist centres, road connectivity, provisioning of decentralised renewable energy, Direct to Home access for Doordarshan and educational channels, and support for livelihood generation.

For urban development, a high-level committee of reputed urban planners, urban economists and institutions would be formed to make recommendations on urban sector policies, capacity building, planning, implementation, and governance. For urban capacity building, support would be provided to the States. Also, modernisation of building by-laws, Town Planning Schemes (TPS), and Transit Oriented Development (TOD) would be implemented. The Central Government's financial support for mass transit projects and AMRUT scheme will be leveraged for formulation of action plans and their implementation for facilitating TOD and TPS by the States. Strengthening urban planning and design, and to deliver certified training in these areas, five existing academic institutions in different regions will be designated as centres of excellence and each would also be provided endowment funds of Rs 250 crore. AICTE would be tasked to improve syllabi, quality, and access of urban planning courses.

There are sunrise opportunities for Artificial Intelligence, Geospatial Systems and Drones, Semiconductor and its ecosystem, space economy, genomics and pharmaceuticals, green energy, and clean mobility systems which hold immense potential for assisting sustainable development at scale and modernise the country.

The outlay for capital expenditure in the Union Budget is once again being stepped up sharply by 35.4 per

cent from Rs 5.54 lakh crore in the current year to Rs 7.50 lakh crore in 2022-23. This has increased to more than 2.2 times the expenditure of 2019-20 and this outlay in 2022-23 will be 2.9 per cent of GDP. With this investment taken together with the creation of capital assets through Grants-in-Aid to States, the 'Effective Capital Expenditure' of the Central Government is estimated at Rs 10.68 lakh crore in 2022-23, which will be about 4.1 per cent of GDP.

The Central Government will work with the State Governments for reduction of time required for all land and construction-related approvals and promoting affordable housing for middle class and Economically Weaker Sections in urban areas. The financial sector regulators would be roped in for expanding access to capital along with reduction in cost of intermediation.

Skill Development

The budgetary allocation for the "Startup India Initiative in Higher Educational Institutions" within the Ministry of Education has been increased by 100 per cent from Rs 30 crores in 2021-22 to Rs 60 crore. Further, dwelling on the subject of skill development and quality education, Startups will be promoted to facilitate 'Drone Shakti' through varied applications and for Drone-As-A-Service (DrAAS).

In the realm of vocational courses, in order to promote crucial critical thinking skills and give space for creativity, it is proposed to set up 750 virtual labs in science and mathematics, and 75 skilling e-labs for simulated learning environment, would be set up. There is also a plan to develop high-quality e-content in all spoken languages for delivery via internet, mobile phones, TV, and radio through Digital Teachers for building a competitive mechanism for development of quality. It is also planned to set up e-content by the teachers for empowering and equipping students with digital tools of teaching and facilitating better learning outcomes.

The plan for establishing a Digital University for providing access to students across the country for world-class quality universal education with personalised learning experience at their doorsteps. This would be made available in different Indian languages and ICT formats. The University is planned to be built on a networked hub-spoke model, with the hub building cutting edge ICT expertise.

Further, it is also envisaged that world-class foreign universities and institutions will be allowed in the GIFT City to offer courses in Financial Management, Fintech, Science, Technology, Engineering, and Mathematics free from domestic regulations, for facilitating availability of high-end human resources for financial services and technology.

Skilling programmes and partnership with the industry are being reoriented to promote continuous skilling avenues, sustainability, and employability. The National Skill Qualification Framework (NSQF) will be aligned with dynamic industry needs. Digital Ecosystem for Skilling and Livelihood – the DESH-Stack e-portal will be launched. This aims to empower citizens to skill, re-skill, or up-skill through on-line training. It will also provide API-based trusted skill credentials, payment and discovery layers to find relevant jobs and entrepreneurial opportunities.

Owing to the pandemic-induced closure of schools, our children, particularly in the rural areas, and those from Scheduled Castes and Scheduled Tribes and other weaker sections, lost almost two years of formal education, mostly in government schools. Therefore, imparting supplementary teaching and building a resilient mechanism for education delivery is also envisaged. In this regard, 'One Class-One Channel' programme of PM eVIDYA would be expanded from 12 to 200 TV channels for enabling all States to provide supplementary education for classes 1-12 in regional languages.

Innovation in Health Sector

In the wake of the Covid-19, and in order to strengthen infrastructure in health and associated sectors, the Government has continued with the enhanced support that is necessary for these sectors at this point as given in Table 2. Under Ayushman Bharat Digital Mission, an open platform for the National Digital Health Ecosystem would be rolled out. It would consist of digital registries

Table 2: Health and well-being in the Budget 2022-23 (Rs Crore)

	Actuals (2018-19)	Actuals (2019-20)	Actuals (2020-21)	Revised Estimates (2021-22)	Budget Estimates (2022-23)	% change in 2022-23 BE over 2021-22
Ministry of Health and Family Welfare						
Department of Health and Family Welfare	52954	62397	77569	82021	83000	0.10
Department of Health Research	1728	1934	3125	3080	3201	3.93
Ministry of AYUSH	1554	1784	2126.46	2664.42	3050	14.47
Sub Total	*56236*	*66115*	*82820.46*	*88665.42*	*89251*	*0.66*
COVID vaccination		-	-	39000	5000	-87.18
Department of Water and Sanitation	18412	18264	15967.3	51037	67221	31.71
Jal Jeevan Mission	5484.15	10030	10998.22	45011	60000	33.30
Total	**80132.15**	**94409**	**109786**	**223713.4**	**221472**	

Source: Author's compilation from Union Budget of various years

of health providers and health facilities, unique health identity, consent framework, and universal access to health facilities.

An innovative idea of having an open platform for the National Digital Health Ecosystem is in pipeline which would comprise of digital registries of health providers and health facilities, unique health identity, consent framework, and universal access to health facilities has come up. Further, Covid-19 health crisis accentuated mental health problems of people of all ages, for providing better access to quality mental health, whereas counselling and care services, a 'National Tele Mental Health Programme' is being planned with a network of 23 tele mental health Centres of Excellence. National Institute of Mental Health and Neurosciences (NIMHANS) would be the nodal centre and International Institute of Information Technology-Bangalore (IIITB) would provide technology support.

It also needs to be underscored that India has always stood up for collective self reliance. Therefore, development experience of Atmanirbhar Bharat can definitely help in paradigm shift in development of global cooperation for promoting collective self reliance. ❑

Quality Education

Shalender Sharma
Dr Saneel Thakur

The education system in India is transforming itself from focusing on universalisation of access to education to access to quality education, in line with the Sustainable Development Goals (SDG 4 in particular). As per the National Sample Survey, the literacy rate of persons of age 7 years and above at the All-India level stood at 77.7 per cent. The 2030 Agenda for Sustainable Development adopted by India in 2015– aims to "ensure inclusive and equitable quality education and promote lifelong learning opportunities for all" by 2030.

India has made remarkable strides in recent years in attaining near-universal enrollment in elementary education through initiatives such as the Sarva Shiksha Abhiyan (now the Samagra Shiksha) and the Right to Education Act. However, the data for higher grades indicate some serious issues in retaining children in the schooling system. The GER for Grades 6-8 was 90.9%, while for grades 11-12 it was only 56.5%, which indicates that a significant proportion of enrolled students drop out after Grade 8. As per the 75th round household survey by National Sample Survey Office (NSSO) in 2017-18, the number of Out Of School Children (OOSC) in the age group of 6 to 17 years is 3.22 crore. In this context, the education policy is attempting to reduce the dropout rate and achieve a 100% GER from preschool to secondary levels by 2030. The futuristic, outcome-oriented New Education Policy (NEP) 2020 stresses upon infrastructure development to ensure participation. The gradual adoption of this policy has thrusted upon wide-ranging reforms across the sector.

NEP focuses on reforming and revamping all aspects of the education structure, including its regulation and governance, to create a new system that is aligned with the aspirational goals of 21st-century education. It is also envisaged to strengthen and expand high-quality institutions. The education system, however, has always been constrained by infrastructure, teachers, technology, policy, budget, etc. The reforms envisaged through the NEP would require a substantial increase in public expenditure on education as well as support through international development agencies, CSRs and CSOs.

Further, it is also proposed to expand and strengthen open schools for meeting the learning needs of the youth of India who are not able to attend a physical school. As per the NEP, in addition to cognitive development, the students also need to be equipped with critical 21st-century skills. Experiential learning methods proposed under the NEP will increasingly be adopted, including hands-on learning, arts-integrated and sports-integrated education, story-telling-based pedagogy, (among others, as the new standard pedagogy within each subject) and include explorations of relations among different subjects. To close the gap in the achievement of learning outcomes, classroom transactions will shift towards competency-based learning and education. Every student will take a fun practical course during Grades 6-8, through which they would be able to sample a hands-on experience of important vocational crafts, such as carpentry, electric work, metalwork, gardening, pottery making, etc.,– decided by States and local communities and as mapped by local skilling needs.

The Policy also aims to provide quality textbooks at the lowest possible cost namely, at the cost of production/printing– in order to mitigate the burden

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of textbook prices on the students and on the educational system. Similarly, to maintain the high quality of education, a National Assessment Centre, PARAKH (Performance Assessment, Review, and Analysis of Knowledge for Holistic Development)– as a standard-setting body under MHRD that fulfills the basic objectives of setting norms, standards, and guidelines for student assessment and evaluation for all recognised school boards of India, guiding the State Achievement Survey (SAS) has also been proposed in NEP.

Apart from the above, NEP aims to establish school complexes/clusters, and the sharing of resources across complexes will have a number of other benefits as a consequence, such as improved support for children with disabilities, more topic-centred clubs, and academic/sports clubs.

In the coming years, there is a pressing need to focus on the digital delivery of education. It is proposed to develop a National Digital Education Architecture (NDEAR) to support teaching and learning activities including educational planning, governance, and administrative activities of the Centre and the States/Union Territories. Apart from this, enhancing teachers' training and introduction of indigenous toy-based learning also need to be prioritised. Considering this new paradigm, the actual budget of Rs 279 crores for Digital India e-learning in the year 2020-21 has been increased to Rs 421 crores in the present budget.

School Education and Literacy

- It is well accepted that the pandemic-induced closure of schools has led to a loss of almost two years of formal education. School children in rural areas, and those from Scheduled Castes and Scheduled Tribes, and other weaker sections, have comparatively been more affected due to lack of quality digital media-enabled learning systems. Hence, the "One Class-One Channel" programme of PM eVIDYA will be expanded from 12 to 200 TV channels and will enable all States to provide supplementary education in regional languages for classes 1-12. High-quality e-content in all spoken languages will be developed

Key Relevant Schemes/Projects to achieve the aims and objectives of New Education Policy (NEP)

ASPIRE (Accelerating State Education Program to Improve Results): ASPIRE, a Centrally Sponsored Scheme supported by Asian Development Bank is proposed to be implemented in five States viz., Gujarat, Assam, Jharkhand, Tamil Nadu, and Uttarakhand with a total financial support of USD 500 million (3700 crore approx.) over a period of six years.

Exemplar: The Scheme of Exemplar aims to prepare more than 15000 schools of excellence which will help showcase the implementation of the NEP 2020 and emerge as exemplars and schools of excellence over a period of time. They will provide leadership in their respective regions in providing high-quality education in an equitable, inclusive, and joyful school environment that takes care of the diverse background, multilingual needs, and different academic abilities of children and makes them active participants in their own learning process as per the vision of NEP 2020.

New India Literacy Programme (NILP): A new Centrally Sponsored Scheme of Adult Education 'New India Literacy Programme' for Financial Years 2022-27 has been designed and developed by aligning with the recommendations on "Adult Education and Lifelong Learning" of NEP 2020.

Operation Digital Board (ODB): The Scheme of ODB provides class-centric digital intervention for teaching and learning and is proposed to be implemented for class IX to XII in all the government and aided schools in the country.

Pradhan Mantri Poshan Shakti Nirman (PM POSHAN): PM POSHAN earlier known as the National Programme of Mid-Day Meals in Schools is one of the foremost rights-based Centrally Sponsored Schemes under the National Food Security Act, 2013 (NFSA). The primary objective of the Scheme is to improve the nutritional status of children studying in classes I-VIII in eligible schools.

Pradhan Mantri Innovative Learning Programme (DHRUV): This Scheme is an initiative to provide guidance from renowned/prominent persons in their field to select talented students.

Samagra Shiksha: The erstwhile Schemes of Sarva Shiksha Abhiyan (SSA), Rashtriya Madhyamik Shiksha Abhiyan (RMSA), and Strengthening of Teacher Training Institutions have been merged to form the Scheme of Samagra Shiksha. The merger intends to give a holistic and integrated approach to School Education in line with NEP 2020.

Strengthening Teaching-Learning and Results for States (STARS): The STARS project seeks to support the States in developing, implementing, evaluating, and improving interventions with direct linkages to improved education outcomes and school to work transition strategies for improved labour market outcomes. The overall focus and components of the STARS project are aligned with the objectives of NEP 2020 pertaining to Quality-Based Learning Outcomes. □

Focused Head of Department of School Education and Literacy	2020-21 (Actual)	2021-22 (Revised)	2022-23 (Budget Estimates)
SSA/ Samagra Shiksha Abhiyan	27,835	30,000	37,383
Mid-day Meal Scheme/Pradhan Mantri Poshan Shakti Nirman (PM POSHAN)	12,878	10,234	10,234
Autonomous Bodies	10,388	11,073	12,359

for delivery via the internet, mobile phones, TV, and radio through Digital Teachers.

- NEP 2020 has emphasised school-level vocational education and within the vocational course, it is desirable to embed crucial critical thinking skills, to give space for creativity. A total of 750 virtual labs in science and mathematics and 75 skilling e-labs are planned to be set up for simulated learning environments.
- In Financial Year 2022-23, the corpus of Prarambhik Shiksha Kosh (PSK) is kept at 10000 crore in the Scheme of PM-POSHAN.
- Under Samagra Shiksha Abhiyan Scheme, the corpus of PSK and Madhyamik and Uchchtar Shiksha Kosh (MUSK), is 28000 crore and 5000 crore respectively.

The revised Budget 2021-22 of the Department of School Education and Literacy is around Rs 51,969 crore. The Union Budget 2022-23 has allocated Rs 63,449 crore to the Department of School Education and Literacy. The table above provides budgets of major heads of the Department of School Education and Literacy across the last three years.

Way Forward

Public spending on education has been in the range of 2-3.5% and continues to be so. The reforms envisaged through NEP would require a substantial increase in public expenditure on education as well as support through CSR activities and CSOs. The impact of Covid-19 on education has been all-encompassing. Most schools were closed since March 2020 and children were being taught online using available assets at home. The importance of access to data networks and electronic devices such as computers, laptops, smartphones, etc., has increased enormously. As per the Annual Status of Education Report (ASER) 2020 Wave-I (Rural), released in October 2020, the percentage of enrolled children from government and private schools owning a smartphone rose enormously from 36.5% in 2018 to 61.8% in 2020 in rural India[1]. If utilised well, the resultant reduction in the digital divide between rural and urban, gender, age, and income groups is likely to reduce inequalities in educational outcomes. To enable this process, the Government is implementing several initiatives to make education accessible to children during the pandemic. NEP 2020 has focused on learning in the local language; Budget 2022-23 has also recognised this fact and has announced to develop High-quality e-content in all spoken languages.

> To maintain the high quality of education, a National Assessment Centre, PARAKH (Performance Assessment, Review, and Analysis of Knowledge for Holistic Development)– as a standard-setting body under MHRD that fulfills the basic objectives of setting norms, standards, and guidelines for student assessment and evaluation for all recognised school boards of India, guiding the State Achievement Survey (SAS) has also been proposed in the NEP.

Apart from the Central Government, State Governments are also incurring expenses in the education sector. A coherent model of synchronisation of funds for the education sector should be developed. The Central Budget may examine the State Governments' budget provisions on education before making budget allocations for the education sector. The priorities of NEP have been considered adequately in the last year as well as in the Budget 2022 by the Central Government's budget and it is desirable that the respective State Governments include budget provisions in a similar, streamlined manner to achieve the aims of NEP-2020. This convergence of State and Central Government funds and educational schemes would be useful in many ways to achieve the objectives of NEP 2020. The cluster approach for the development of educational infrastructure is already envisaged; in addition to this, it is desirable that the merging of schemes with flexible fund flow mechanisms will bring more effectiveness in fund utilisation in the education sector.

Quality improvement in education is strongly emphasised in the New Education Policy as an essential requirement for building a competitive workforce that is at par with global standards. Accordingly, the flagship policy has included several reforms aligned to this thinking. However, the ultimate implementation aspects of such initiatives will depend on the efforts of the State Governments. In this context, a conditional financing model may be useful to meaningfully incentivise fund utilisation and implementation. ❑

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Digital Currency

Karishma Sharma
Bhavya Tyagi

The current digital landscape of India makes a strong case for introducing a Central Bank Digital Currency (CBDC). An increase in the availability of low-cost smartphones and low-cost 4G data has further deepened digitisation in India. Despite a diverse range of virtual currencies being available, penetration of private digital currencies remains low which offers a strong case for India's own digital fiat rupee that will promote financial inclusion and increase demand for real money balances.

With reserves of precious metal becoming more competitively priced, metal objects like iron and aluminum were introduced. But a major problem that occurred with this medium of the transaction was the immense difficulties in carrying around a large number of these heavy metal objects as transactions grew. Soon, certain regions of the world moved from commodity money to a representative and later, a fiat form of money like paper money and non-precious coinage. Fiat money is not backed by any commodity such as gold or silver and is typically declared by a decree from the government to be an enforceable legal tender.

Following the teleological arguments of Aristotle, money's function is to serve as a unit of account or as a medium of exchange expanded to what he says in a rather reproachful tone, "breeding money from money". From Aristotle's money to today's digital *avatar* of money, i.e., cryptocurrency, the world has moved to a lighter, more efficient, and effortless means of not only exchange but also accumulation and investment.

Today, countries are seized with the idea of cryptocurrency as in this modern digital age, paper banknotes are gradually losing their role as a reference value in payment systems across the world. Digitisation of payments cannot be ignored by the countries and therefore, it has become pertinent for Central Banks to consider new technologies in payments in order to ensure that their money can still remain a safe payment anchor in this era. This article is an attempt to unravel the world of cryptocurrencies and highlight the opportunities that India faces with the introduction of the Digital Rupee.

To begin with, let's consider cryptocurrency that has emerged from obscurity, a little more than a decade ago, into a leading form of a digitised asset. Although it finds a mention as early as the 1990s, official development of the technology began in the 1990s. A cryptocurrency like bitcoin is a cryptography-based peer-to-peer electronic cash system, founded on blockchain and distributed ledger systems, that allow the transfer of values without any financial intermediary such as banks.

Cryptocurrencies aspire to be a new, digital, encrypted, and decentralised form of currency. However, to be considered a currency, there has to be a unit and a defined process of issuance. A committee of International Financial Reporting Standards Foundation (IFRS) Foundation[1] pointed out that cryptocurrencies cannot be treated as financial assets as cryptocurrency is neither cash nor an equity instrument. This is the reason why many countries have refrained from officially recognising cryptocurrencies. a privately owned/created store of value in an encrypted format, as a digital currency, an electronic form of fiat money issued by the government.

Looking beyond the hype, there are reasons that legitimise the uncertainty regarding cryptocurrencies. One, the technology is decentralised where there is no central agent to regulate or stabilise the value of the currency. Two, the transactions are slow, costly, non-scalable, and the process is far from simple. For Ethereum, one of the leading cryptocurrencies, the average productivity of

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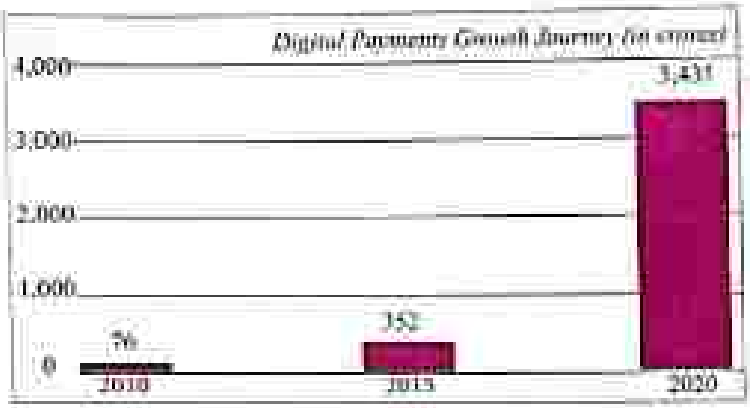

Source : India Digital Payments 4.0 / 2025 Outlook, NASSCOM

validators in 15.5 transactions per day and per validator[2]. This is against UPI that processed 136 million transactions per day in October 2021 alone[3]. Moreover, the average time taken to complete a bitcoin transaction is 24.50 minutes[4]. Three, cryptocurrencies are extremely volatile. From October 2013 to February 2022, the price moved from USD 196 to USD 38,360, with sharp peaks and valleys in between. And lastly, there is a threat to the security of the parties involved in the transaction and there is a potential risk of fraud.

So, clearly, if digital money has to exist, central banks have to play an important role as a regulatory, supervisory, and issuing authority.

The current digital landscape of India makes a strong case for introducing CBDC. Demonetisation in 2016 led to about a hundred-fold increase in digital payment transactions in India. An increase in the availability of low-cost smartphones and low-cost 4G data has further deepened digitisation in India. India pioneered the digital transactions space with the creation of the vastly successful Unified Payments Interface (UPI) back in 2016 and the revolutionary Jan-Dhan Yojana. The Digital India campaign today stands on the pillars of inclusivity, accessibility, and financial security for all. The ripple effects can be felt across the financial system in India.

Digital Rupee, hence, is a visionary yet achievable step in a country like India that ensured internet penetration for the masses in a matter of 5 years.

With the Budget of 2022, India has officially stepped foot into the digital currency space. The Finance Minister proposed to introduce a Central Bank Digital Currency (CBDC)– a digital version of the rupee, using blockchain and other technologies, starting 2022-23. RBI had earlier proposed amendments to the Reserve Bank of India Act, 1934, which would enable it to launch CBDC. Earlier this year, RBI also constituted a Fintech Department to facilitate innovation in fintech and supervise the current financial landscape in India.

Efforts to introduce CBDC are also gaining momentum across the world. According to Atlantic Council, 87 countries representing over 90% of global GDP[5] are currently exploring a CBDC in contrast to May 2020, when only 35 countries were considering it. Moreover, there are nine launched digital currencies in the world and 56 digital currencies are under research or development[6]. Jamaica recently announced its sovereign digital currency to be released in 2022. Eastern Caribbean countries launched a digital currency, DCash, in 2021 itself. Clearly, issuing a digital rupee is putting India right on track with the world.

What is CBDC?

A Central Bank Digital Currency is a digital token, similar to but not the same as cryptocurrency, issued by a central bank of a country. They are pegged to the value of that country's fiat currency and enjoy government mandate as opposed to cryptocurrencies. Usually, token-based CBDC doesn't require the two parties to have a bank account; a person can pay with CBDC much like a payment made in cash.

A BIS publication[7] highlighted three different 'variants' of CBDC:

1. Account-based, where Central Bank allows people to open an account and transfer money between account holders.
2. Token-based or retail-based, where each token represents 'digital cash' for use by the general public or non-banking entities.
3. Wholesale-based, where a restricted-access digital token is issued for wholesale settlements like interbank payments and even, cross-border payments.

Account-based CBDC can offer a direct substitute to traditional demand deposits in India. While there is a great potential to implement both the wholesale and retail-based channels to reduce both retail transaction costs and make existing banking institutions more effective and efficient. It can also enhance the financial independence of banks.

The RBI is currently working towards a phased implementation strategy[8]. Some key issues under examination are– (i) the scope of CBDCs– whether they should be used in retail payments or also in wholesale payments; (ii) the underlying technology– whether it should be a distributed ledger or a centralised ledger; (iii) the validation mechanism– whether token-based or account-based; (iv) distribution architecture– whether direct issuance by the RBI or through banks; (v) degree of pseudo-anonymity, etc.

It is important to understand that digital currencies are not the same as the transactions made on digital payments portals. The transactions on these portals are merely an exchange of fiat money facilitated by technology where no physical exchange is taking

Digital currencies are not the same as the transactions made on digital payments portals. The transactions on these portals are merely an exchange of fiat money facilitated by technology where no physical exchange is taking place between parties involved in the transaction. A digital currency on the other hand is another category of fiat money that lacks any physical attributes and exists only in electronic form.

place between parties involved in the transaction. A digital currency on the other hand is another category of fiat money that lacks any physical attributes and exists only in electronic form.

There are certain key factors that make the introduction of CBDC inevitable in India given the scope of digitisation in day-to-day banking activities. First, there is a diverse range of virtual currencies being circulated and the market currently is extremely fragmented. Second, due to their limited scale and efficiency, the number of transactions occurring through private virtual currencies is very low as discussed previously. Third, the degree of pseudo-anonymity provided by private digital currencies discourages participation as the transactions have to be recorded on a public ledger that every participant has access to. Fourth, there are many technical and security concerns associated with its use. Moreover, cryptocurrency is largely decentralised with no issuance authority behind it which makes it a less trusted source of investment. And lastly, it is extremely volatile and subject to risks.

A Central Bank Digital Currency is a digital token, similar to but not the same as cryptocurrency, issued by a central bank of a country. They are pegged to the value of that country's fiat currency and enjoy government mandate as opposed to cryptocurrencies.

Despite a diverse range of virtual currencies being available, penetration of private digital currencies remains low which offers a strong case for India's own digital fiat rupee that will promote financial inclusion and increase demand for real money balances. It will ensure privacy, transferability, convenience, accessibility, and financial security.

It also presents a way to advance India's sustainability motives. Compared to Bitcoin which is known to be notoriously energy inefficient[8], CBDC lays its foundation principle on strong standards of environmental sustainability.

In a macroeconomic sense, the introduction of CBDC will also help in reducing the cost of transactions for corporate consumers, particularly large ones, across borders.

India's high currency-to-GDP ratio holds out another benefit of CBDCs that can replace large cash transactions and reduce the costs that the central bank bears for printing, transporting, and managing cash. As per RBI's Annual Report for 2020-21[9], the printing money bill stood at a staggering Rs 4,000 crore. CBDC currency is hard to duplicate or counterfeit and is secured by consensus mechanisms that prevent tampering. While they have all the positives of cryptocurrencies, CBDCs are regulated and standardised as opposed to being dictated by investor sentiments, usage, and user interest. This currency offers stability and safety in a digital currency market that is known to be volatile and thus replace legal tender around the world. As paper currency makes it difficult for interest rates to go negative at the time of financial crises, interest-bearing CBDC can allow banks to cut interest rates in response to a large deflationary pressure[10].

Discontinuation of paper currency is also desirable as a large sum of cash is precisely used to hide transactions in countries, especially India. Additionally, digital currencies offer a way to not just reduce but also track frauds, ensuring that resources of the economy are not misused. It comes as an additional step towards greater monetary stability in the country following the Bankruptcy and Insolvency Act.

India has been at the forefront of innovating and adopting innovation since the launch of the Digital India campaign. For a country that was almost completely cash-dependent until a few years back, the introduction of a central digital currency is a major leap forward in terms of penetration of the modern banking system.

Digital currencies have till now remained an elitist idea with only the uber-rich or more recently the conveniently well-off sections of the society had access to. With a Digital Rupee being launched, an elitist financial tool is also reaching the masses, ensuring better financial awareness and the use of modern means of finance in the day-to-day life of an average citizen of India.

Once the use of digital currency becomes widespread, backed by the government's mandate, it can be used in Direct Benefit Transfers (DBTs) to the vulnerable population ensuring increased exposure to digitisation and quick financial assistance at the same time. CBDC will also be a further push to e-commerce with the greater trust of the masses in digital transactions that are backed by the government.

While CBDC is sure to give a boost to the already strong digital infrastructure of the country, what will be exciting to witness will be the exact system that the government introduces for the adoption of the CBDC. A country like India with a large and diverse population works as a sample market for the entire world to understand the mechanism of a new product, in this case, a digital currency. □

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Facilitating India@100

Dr JD Agarwal
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Given the rebounding GDP growth of 9.2% in 2021-22 with controlled inflation at 5.6% and Fiscal Deficit at 6.9%, India has moved to a higher plane amongst leading economies of the world in every sphere of its activity. Investment in infrastructure viz. Roads, Railways, Airways, Ports, Mass Transport, Waterways, Defence corridors, and Logistics Infrastructure would enhance the productivity of the economy, generate huge employment and help revive the economy at a faster pace. This will add wings to India not only to move at fast track but fly high meeting the challenges of poverty, unemployment, and real effective growth improving the standard of living in light of minimum government and maximum governance.

The Government in this year's budget has rightly identified objectives, assigned priorities, recognised constraints, the technological innovations in the world economy, the needs of Indians and Indian industry. Transparency, Accountability, and Sustainability through Digital Influx in all spheres of public and private lives and livelihoods will add wings to India not only to move at fast track but fly high meeting the challenges of poverty, unemployment, and real effective growth, improving the standard of living in light of minimum government and maximum governance.

Employment generation; infrastructure boosting; inducing inclusive development with Atmanirbharta, transparency and digitalisation; repealing 25,000 compliances and 1,486 union laws towards ease of doing business, bringing stability in tax structure while targeting to control evasion or avoidance of taxes by imposing tax on virtual assets and bringing clarity through the announcement of RBI issuing Digital Currency in 2022-23 will help India increase productive efficiency and global competitiveness of the economy. While containing inflation in medium term, facilitating ease of doing business and ease of living in tune with the latest technological developments will take the economy to a higher platform.

This would directly benefit India, its youth, women, farmers, scheduled castes, scheduled tribes, senior citizens, BPL families, MSMEs, the "*have nots*", and those suffering from the ill effects of Covid-19.

Transformation, Employment, and Jobs

The government's initiatives will result in economic transformation through large investments, increased capital expenditure by 35.4% to Rs 7.50 lakh crore,

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enhanced infrastructure giving 'Gati' to the nation by development of National Highways network with additional 25,000 km and Rs 20,000 crore expenditure for easy movement of goods, and people using an innovative way of financing; development of multi-modal parks through PPP mode; bringing 2,000 km of network under Kavach using indigenous world-class technology along with 400 new Vande Bharat Trains; 100 PM GatiShakti Cargo Terminals; building metro systems; construction of 60 km of 8 ropeways to improve rural connectivity and promote tourism; construction of 80 lakh dwellings with investment of Rs 48,000 crores for BPL families; providing tap water to 3.8 crores families with allocation of Rs 60,000 crores; 68% of defence budget for domestic industry; 25% of defence R&D budget for industry, startups, academia and proposed generation of 60 lakh jobs, taking India on a digital plane for adding speed and scale to operations with ease of doing business and ease of qualitative living for all.

Investment in infrastructure viz. Roads, Railways, Airways, Ports, Mass Transport, Waterways, Defence corridors, and Logistics infrastructure would enhance the productivity of the economy, generate huge employment especially for the unskilled in the unorganised sector, yield higher revenue, increase tax collection, improving financial position of unskilled and skilled people living both in urban and rural areas by increasing consumption levels of people, and helping revive the economy at a faster pace. Investment in infrastructure (rural/urban or physical/virtual) in last 75 years has clearly proved to have helped generate employment and increase the farm incomes by providing easy access to markets while combating possible inflation, inducing ease of doing business and enriching living experience of common man. It is a well-known fact that large quantity of produce gets wasted due to non-accessibility to markets and lack desired infrastructure, even before reaching the users, thus resulting in the loss of national wealth and incomes to producers.

The Government has given due importance to Agriculture in the last 6 years and induces inclusive development of Agriculture with empowering farmers digitally via mKisan, Drone Facility for produce assessment and pesticides spray; Rs 1,400 crore in Ken-Betwa river linking irrigation projects; financial support to SC/ST farmers for Agro-forestry; NABARD financing for Agri & Rural Startups; Vibrant Village Programme for Northern Border and Rs 2.67 lakh crore direct payments to 1.63 crore farmers at MSP. Other key developments for rural India is being done via skill development, universalisation of quality Education One Class-One Channel, Digital University, Ayushman Bharat Digital Mission Tele Mental Health programme; *Har Ghar Nal se Jal* and housing for all. The PM's Development Initiative for North East Region; Aspirational Blocks Programme; Vibrant Villages Programme; Anytime-Anywhere Post Office Banking; Digital Banking (75 Units in 75 Districts); Digital Rupee, and the Fintech innovations will not only upscale standard of living, but will also improve livelihood, generate employment, reduce income disparity through financial development and inclusion for all– *Sabka Saath Sabka Vikas*.

The Government has recognised the importance of financial management & fintech as important subject free from domestic regulations under GIFT City setup to empower youth and better management of the scarce resource, i.e., finance for development of the common man.

Digital Rupee, Virtual Assets, and Digitalisation

The Budget has rightly announced that digital currency would be issued by RBI in 2022-23. The setting up of Post Office Banking in 1.5 lakh Post Offices and 75 Digital Banking units (DBUs) in 75 districts by SCBs will empower rural consumers with financial liquidity and mobility via JAM Trinity. Encouraging Digital Payments ecosystem that is economical and friendly will ensure formalisation of the economy and industry. Digitalisation for India@100 will help generate wealth, bring ease of doing business, improve livelihood through enhanced employment,

> The fintech innovations will not only upscale standard of living, but will also improve livelihood, generate employment, reduce income disparity through financial development and inclusion for all– Sabka Saath Sabka Vikas.

double farmer income through DBT at MSP and induce efficiency in currency markets. This process will help increase multi-fold the productive capacity of the economy and general employment at large scale, at all levels.

India@100 will witness the true growth given the foundation of digitalisation of the economy fostered through Digital Ecosystem for Skilling and Livelihood with the launching of the Desh Stack e-portal to empower citizens to skill, reskill, or up-skill to promote sustainability and employability. The launching of One Class-One Channel under PM e-Vidya, 200 TV channels will supplement equitable right to education in national and regional languages for classes 1-12; setting up of 750 virtual labs in science and mathematics along with 75 skilling e-labs to simulate a learning environment; development of high quality e-content in all spoken languages for delivery via internet, mobile, TV, radio, etc., will equip the teachers with digital tools of teaching and facilitating better equitable learning outcomes throughout the country for all, irrespective of income or states. The setting up of Digital University, rolling out of National Digital Health Ecosystem of digital registries of health providers and facilities, launching of tele mental health counselling through a network of 23 tele mental health centres of excellence with NIMHANS will ensure a healthy India.

Digitalisation for India@100 will help generate wealth, bring ease of doing business, improve livelihood through enhanced employment, double farmer income through DBT at MSP and induce efficiency in currency markets. This process will help increase multi-fold the productive capacity of the economy and general employment at large scale, at all levels.

The Productive Linked Investment Scheme in 14 Sectors with Rs 1.97 lakh crore spent in 2021-22 and additional allocation of Rs 19,500 crore for Solar and other schemes in Sunrise Opportunities; Energy Transition and Climate Action; Green Clearances; e-Passports; Urban Planning & Development support to States; Clean & Sustainable Mobility; Battery Swapping Policy; Land Records Management; IBC, accelerated corporate exit, modernising Government procurement; payment of 75 per cent of government running bills mandatorily within 10 days; setting up of ways to improve AVGC sectors with a view to generate employment and build domestic capacity; rolling out of 5G Mobile services for proliferation in rural areas' access to e-services and communication facilities will foster job creation and eco-friendly growth in all sections of society.

As far back as in 2017-18, the research entitled "The Theory of Money, Wealth and Efficient Currency Markets: Modelling 'M3' as Money supply with Crypto Currency" in Finance India, proposed setting up of "M3 as Money Supply" with CBDC, along the lines of being inclusive of other currency products developed in the last 50 years in order to promote efficiency in the money markets, transactional efficiency, and generating wealth along with positive contributions to the GDP and people at large. The Government's intervention or generation of the digital currency by the Central Banks is the need of the hour and critical for future economic and business conditions in the economy when businesses and labour market source are global and looking for currency efficient sources.

Equitable Investment & Growth

The infrastructure focus through raising allocations to more than 7.50 lakh crores (in reality Rs 10.50 lakh crores including grants-in-aid for investment in capital assets) along with large capital expenditure increase and investments through asset monetisation would result in growth. In these difficult times where even the developed countries are having negative real growth despite extensive fiscal spending, the Government's allocation of 50 years' interest free Rs 1 lakh crores to the States over normal borrowing will be catalysing overall investments and revitalising financially weak States to run developmental activities for generating remunerative employment and undertaking investment in productive capital assets.

The capital expenditure to create productive assets from borrowings is a good decision by the GoI given growth trends, as it results in a multiplicative factor for given rise of productive capacity of the economy. Borrowing as we say in Finance must not be considered

negative even if it results in higher fiscal deficit, as long as our growth is sustained, inflows of revenue are on an increase (Rs 1.43 lakh crore in GST receipts in January 2022 apart from other sources), strong foreign exchange reserve buffer, rupee value is strengthened, and monetary policy is stabilised by RBI. Almost all businesses around the world run profitably, based on financing projects with high leverage, by investing in productive assets.

The Government's intervention or generation of the digital currency by the Central Banks is the need of the hour and critical for future economic and business conditions in the economy when businesses and labour market source are global and looking for currency efficient sources.

The revenue deficit of 2.9% is sustainable and may be considered to be good financial management of the Government in the year 2021-22. This indicates that there was strict control on revenue expenditures and also revenue realisation of both direct and indirect with improved efficiency in collection. Higher revenue deficit, except under exceptional circumstances like war or pandemic, reflects on inefficiency of the government both on revenue and expenditure side.

Fiscal consolidation is always a matter of serious debate, a prescription of international agencies like IMF, ADB, and most economists. A fiscal deficit of 4% to 4.5% is recommended by fiscal policy makers, primarily with a view to maintain financial prudence and with a view to control wasteful expenditure of the Government. Accordingly, an attempt would be made to keep the fiscal defict 4.5% by 2025-26. The fiscal deficit estimate for 2022-23 at 6.4% of GDP is well-justified to meet the healthcare, employment, and livelihood needs of the common man. In the present situation of resurgence where the industry is on the path of revival and relief is to be provided to those who suffered from Covid-19, big developmental investment is to be made besides taking care of grants-in-aid and finances of States with additional Rs 1 lakh crore, 50 years' interest-free credit speaks volumes to take India forward, involving the States in the journey of growth.

Fiscal consolidation and tag on fiscal deficit is often recommended, ignoring the role of high leverage facilitation. A faster economic growth is provided to be used for investment in productive capital assets. A country gains tremendously when ROI (both social benefits and private benefits) from a project are higher than the cost of such funds invested in various projects (capital assets). Restricting fiscal deficit to a low level, say at about 4% is against the interest of nation as it will throttle growth and equitable development as has been taught at IIP for last 35 years. For a developing economy, own funds are never adequate for development and building up of productive assets. Fixing low deficit targets also indicates restricting the Government in its spending capabilities to induce growth, investment for India@100, and jobs for the youth. ❑

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Startups in Space Tech

Far-reaching reforms in the Space Sector are in place aimed at boosting private sector participation in the entire range of space activities.

Indian National Space Promotion and Authorization Centre (IN-SPACe) has been constituted as an autonomous agency in the Department of Space (DOS) for enabling space activities, as well as, usage of DOS-owned facilities by Non-Government-Private-Entities (NGPEs) and to permit, regulate, promote, hand-hold, monitor, and supervise Space Activities of NGPEs in India.

The Ministry of Defence (MoD) has taken steps to attract new startups in the field of Defence and Space. Technology Development Fund (TDF) Scheme is a programme of MoD executed by DRDO under the Make in India initiative. The Government has approved TDF Scheme to encourage industries, especially MSMEs and startups to develop various defence technologies. The Scheme operates in Grants-in-Aid Mode. At present, a total of six projects costing Rs 3310.58 lakhs, have been awarded to six startups under TDF Scheme and out of which one project in the field of Space tech has been awarded to two startups.

Atal Innovation Mission (AIM) with its mandate to support entrepreneurship and innovation across India has supported various initiatives and challenges related to Space Tech over the years.

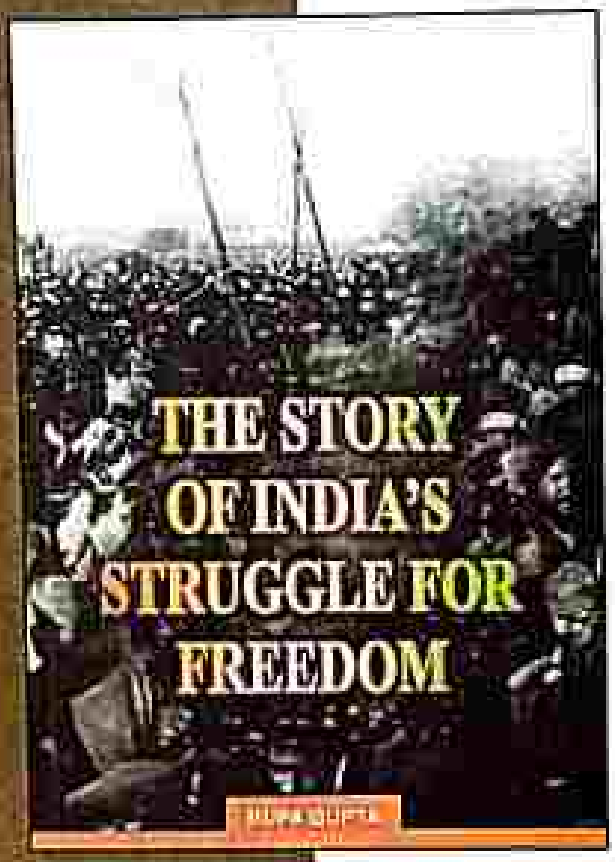
- Under Atal Tinkering Lab (ATL) Scheme: Atal Innovation Mission (AIM) in collaboration with the Indian Space Research Organisation (ISRO) and Central Board of Secondary Education (CBSE) launched the ATL Space Challenge in September 2021. The ATL Space Challenge was open to all school students across the country and was presented with four broad challenge themes- Explore Space, Reach Space, Inhabit Space, and Leverage Space. A total of eight virtual YouTube Live sessions were conducted to guide and motivate the students over a period of six weeks. The Challenge concluded with an overwhelming response of more than 2500 entries comprising of 6500 students' participation. The Top 75 teams were announced in January 2022.
- Under Atal Incubation Centre (AIC) Scheme: AIM has supported more than 15 startups working in Space Tech and related industries across India. The focus areas for these startups are in UAV, Drone and Surveillance Equipment, Aero tech, Air Taxi, Space debris tracking and monitoring service, and space education among others.
- Under ANIC Scheme: ANIC-ARISE programme of AIM in association with the ISRO launched challenge statements in the below focus areas:
  a. Propulsion– Green propellants, Electric propulsion, advanced air-breathing.
  b. Geo-spatial information using Machine Learning/Artificial Intelligence (ML/AI).
  c. Application of robotics, Augmented Reality/ Virtual Reality (AR/VR) techniques.

These problem statements were made open for startups/MSMEs through a call for application. After three rounds of technical and financial reviews, six startups are supported with grant-in-aid upto Rs 50 lakhs over the duration of 12 months. □

Source: PIB

The Story of India's Struggle for Freedom

Author: Rupa Gupta



Price: Rs. 135

The history of India's struggle for freedom is an enthralling one with incredible heroism carried out by many unsung warriors. Accounts of this period are replete with tales of loyalty and treachery, allegiance and insurrection, terrible atrocities and peaceful protests. Written in the form of a dialogue between two children and their old Masterji, this book chronicles four distinct phases of the freedom struggle and attempts to recreate the major events of the most tumultuous period of our history.

The narration traces the Great Revolt of 1857, the new growth of patriotic feeling and a spirit of national upsurge, the birth of Congress, and the final phase from 1920-1947, wholly dominated by Mahatma Gandhi who led and steered the struggle with his call for Satyagraha and Civil Disobedience. The book is aimed at inspiring the reader to remember the enormous sacrifices made by our forefathers to win us freedom at the stroke of the midnight. ❑

Continued from page cover II...

will be on planning, financing including innovative ways, use of technology, and speedier implementation. The projects pertaining to these seven engines in the National Infrastructure Pipeline will be aligned with the PM GatiShakti framework. The touchstone of the Master Plan will be world-class modern infrastructure and logistics synergy among different modes of movement – both of people and goods– and the location of projects. This will help raise productivity and accelerate economic growth and development.

Ken-Betwa and Other River Linking Projects

Implementation of the Ken-Betwa Link Project, at an estimated cost of Rs 44,605 crore will be taken up. This is aimed at providing irrigation benefits to 9.08 lakh hectares of farmers' lands, drinking water supply for 62 lakh people, 103 MW of Hydro, and 27 MW of solar power. Allocations of Rs 4,300 crore in RE 2021-22 and Rs 1,400 crore in 2022-23 have been made for this project. Draft DPRs of five river links, namely Damanganga-Pinjal, Par-Tapi Narmada, Godavari-Krishna, Krishna-Pennar, and Pennar-Cauvery have been finalised. Once a consensus is reached among the beneficiary States, the Centre will provide support for implementation.

Economic Zones

One of the important features of the master plan is the establishment of Economic Zones to boost the ease of doing business in India. Some sectors where Economic Zones are proposed are as follows:

- For the promotion of industry and internal trade, 11 industrial corridors comprising 32 nodes/projects are to be developed in four phases by 2024-25. Greenfield smart industrial cities are to be created for reliable, sustainable, resilient, and quality infrastructure for industries.
- A total of 90 textile clusters/mega textile parks to be developed by 2024-25. 10 mega integrated textile regions/parks to have plug and play facilities, common facilities, and integrated value chain to boost scale and efficiency with two parks partly dedicated to machinery manufacturing.
- A total of 109 pharma and medical device clusters to be developed by 2024-25. 10 pharma clusters to be developed by financing common facilities worth Rs 20 crore each. Further, three bulk drug parks and four medical device parks are to be developed.
- For electronics manufacturing, 38 Electronic Manufacturing Clusters (EMCs) are to be developed by 2024-25. Among them, 23 new clusters have plug & play and CFC facilities.
- By 2024-25, two defence corridors are to be developed with a target investment of over Rs 100000 crore each. A turnover of Rs 170000 crore including export of Rs 35000 crores in aerospace and defence goods and services to be achieved by 2024-25.
- By 2024-25, 197 mega food parks and agro-processing centres are to be developed, increasing the food processing and preservation capacity from 222 lakh MT to 847 lakh MT. Further, a value chain development of agri-food produce on a cluster basis would be done.
- By 2024-25, 202 fishing clusters/fishing harbours and major fishing landing centres to be developed with an additional fish production of 70 lakh metric tonnes, and doubling of fisheries exports. Integrated aqua parks as hubs of multifarious fisheries activity to be developed.

Institutional Framework

The institutional framework for rolling out, implementation, monitoring, and support mechanism is designed to have a three-tier system:

- Empowered Group of Secretaries (EGOs)
- Network Planning Group (NPG)
- Technical Support Unit (TSU)

EGOs will be headed by Cabinet Secretary and will consist of Secretaries of 18 Ministries as members and Head of Logistics Division as Member Convenor. The EGOS has been mandated to review and monitor the implementation of the PM GatiShakti to ensure logistics efficiency. It is empowered to prescribe framework and norms for undertaking any subsequent amendments to the Master Plan.

Cabinet Committee on Economic Affairs (CCEA) has also approved formation, composition, and terms of reference for Network Planning Group (NPG) consisting of heads of Network Planning wing of respective infrastructure ministries and it will assist the EGOs.

Further, in view of the complexities involved in the overall integration of networks, enhancing optimisation to avoid duplication of works for holistic development of any region as well as reducing logistics costs through micro-plan detailing, TSU is approved for providing the required competencies.

The GatiShakti Master Plan is designed to enhance efficiency and have an integrated approach by use of latest satellite imagery for visual understanding, coordination among all the stakeholders, synchronisation in implementation of projects, planning tools for route planning, land acquisition, permissions and congestion reduction and dashboard-based periodic monitoring for progress.

The PM GatiShakti National Master Plan will propel India's self-confidence towards the resolve of self-reliance. This National Master Plan will give impetus to India of the 21st century. Next-generation infrastructure and multi-modal connectivity will get momentum from this national plan. It will give impetus to the government policies related to infrastructure, from planning to execution. This Plan will provide accurate information and guidance for the completion of the government's projects within the stipulated time frame.

Source: PIB